PERTANIKA JOURNAL OF SOCIAL SCIENCES & HUMANITIES

About the Journal

Overview

Pertanika Journal of Social Sciences & Humanities is the official journal of Universiti Putra Malaysia. It is an open-access online scientific journal. It publishes original scientific outputs. It neither accepts nor commissions third party content.

Recognised internationally as the leading peer-reviewed interdisciplinary journal devoted to the publication of original papers, it serves as a forum for practical approaches to improve quality in issues pertaining to social and behavioural sciences as well as the humanities.

Pertanika Journal of Social Science & Humanities is a **quarterly** (*March*, *June*, *September*, *and December*) periodical that considers for publication original articles as per its scope. The journal publishes in **English** as well as in **Bahasa Malaysia** and it is open for submission by authors from all over the world.

The journal is available world-wide.

Aims and scope

Pertanika Journal of Social Sciences & Humanities aims to develop as a pioneer journal for the social sciences with a focus on emerging issues pertaining to the social and behavioural sciences as well as the humanities. Areas relevant to the scope of the journal include Social Sciences—accounting, anthropology, archaeology and history, architecture and habitat, consumer and family economics, economics, education, finance, geography, law, management studies, media and communication studies, political sciences and public policy, population studies, psychology, sociology, technology management, and tourism; Humanities—arts and culture, dance, historical and civilisation studies, language and linguistics, literature, music, philosophy, religious studies, and sports.

History

Pertanika Journal of Social Sciences & Humanities was founded in 1993 and focuses on research in social and behavioural sciences as well as the humanities and its related fields.

Vision

To publish journal of international repute.

Mission

Our goal is to bring the highest quality research to the widest possible audience.

Quality

We aim for excellence, sustained by a responsible and professional approach to journal publishing. Submissions can expect to receive a decision within 120 days. The elapsed time from submission to publication for the articles averages 180 days. We are working towards decreasing the processing time with the help of our editors and the reviewers.

Abstracting and indexing of Pertanika

Pertanika Journal of Social Sciences & Humanities is now over 27 years old; this accumulated knowledge and experience has resulted the journal being abstracted and indexed in SCOPUS (Elsevier), Clarivate Web of Science (ESCI), EBSCO, DOAJ, Agricola, ASEAN CITATION INDEX, ISC, Microsoft Academic, Google Scholar, and MyCite.

Citing journal articles

The abbreviation for Pertanika Journal of Social Sciences & Humanities is *Pertanika J. Soc. Sci. & Hum.*

Publication policy

Pertanika policy prohibits an author from submitting the same manuscript for concurrent consideration by two or more publications. It prohibits as well publication of any manuscript that has already been published either in whole or substantial part elsewhere. It also does not permit publication of manuscript that has been published in full in proceedings.

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The author must ensure that when a manuscript is submitted to *Pertanika*, the manuscript must be an original work. The author should check the manuscript for any possible plagiarism using any program such as Turn-It-In or any other software before submitting the manuscripts to the *Pertanika* Editorial Office, Journal Division.

All submitted manuscripts must be in the journal's acceptable **similarity index range**:
≤ 20% – PASS; > 20% – REJECT.

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An ISSN is an 8-digit code used to identify periodicals such as journals of all kinds and on all media–print and electronic.

Pertanika Journal of Social Sciences and Humanities: e-ISSN 2231-8534 (Online).

Lag time

A decision on acceptance or rejection of a manuscript is reached in 120 days (average). The elapsed time from submission to publication for the articles averages 180 days.

Authorship

Authors are not permitted to add or remove any names from the authorship provided at the time of initial submission without the consent of the journal's Chief Executive Editor.

Manuscript preparation

Most scientific papers are prepared according to a format called IMRAD. The term represents the first letters of the words *Introduction*, *Materials and Methods*, *Results*, *And Discussion*. IMRAD is simply a more 'defined' version of the "IBC" (*Introduction*, *Body*, *Conclusion*) format used for all academic writing. IMRAD indicates a pattern or format rather than a complete list of headings or components of research papers; the missing parts of a paper are: *Title*, *Authors*, *Keywords*, *Abstract*, *Conclusions*, *References*, and *Acknowledgement*. Additionally, some papers include *Appendices*. For manuscripts in **Bahasa Malaysia**, the title, abstract and keywords should be written in both **English** and **Bahasa Malaysia**.

The *Introduction* explains the scope and objective of the study in the light of current knowledge on the subject; the *Materials and Methods* describes how the study was conducted; the *Results* section reports what was found in the study; and the *Discussion* section explains meaning and significance of the results and provides suggestions for future directions of research. The manuscript must be prepared according to the journal's **Instruction to Authors** (http://www.pertanika.upm.edu.my/Resources/regular_issues/Regular_Issues_Instructions_to_Authors.pdf).

Editorial process

Authors who complete any submission are notified with an acknowledgement containing a manuscript ID on receipt of a manuscript, and upon the editorial decision regarding publication.

Pertanika follows a **double-blind peer -review process**. Manuscripts deemed suitable for publication are sent to reviewers. Authors are encouraged to suggest names of at least 3 potential reviewers at the time of submission of their manuscripts to *Pertanika*, but the editors will make the final selection and are not, however, bound by these suggestions.

Notification of the editorial decision is usually provided within 120 days from the receipt of manuscript. Publication of solicited manuscripts is not guaranteed. In most cases, manuscripts are accepted conditionally, pending an author's revision of the material.

As articles are double-blind reviewed, material that may identify authorship of the paper should be placed only on page 2 as described in the first-4-page format in Pertanika's Instruction to Authors (http://www.pertanika.upm.edu.my/Resources/regular_issues/Regular_Issues_Instructions_to_Authors.pdf).

The journal's peer review

In the peer review process, 2 or 3 referees independently evaluate the scientific quality of the submitted manuscripts. At least 2 referee reports are required to help make a decision.

Peer reviewers are experts chosen by journal editors to provide written assessment of the **strengths** and **weaknesses** of written research, with the aim of improving the reporting of research and identifying the most appropriate and highest quality material for the journal.

Operating and review process

What happens to a manuscript once it is submitted to *Pertanika*? Typically, there are 7 steps to the editorial review process:

1. The journal's Chief Executive Editor and the Editor-in-Chief examine the paper to determine whether it is relevance to journal needs in terms of novelty, impact, design, procedure, language as well as presentation and allow it to proceed to the reviewing process. If not appropriate, the manuscript is rejected outright and the author is informed.

2. The Chief Executive Editor sends the article-identifying information having been removed, to 2 to 3 reviewers. They are specialists in the subject matter of the article. The Chief Executive Editor requests that they complete the review within 3 weeks.

    Comments to authors are about the appropriateness and adequacy of the theoretical or conceptual framework, literature review, method, results and discussion, and conclusions. Reviewers often include suggestions for strengthening of the manuscript. Comments to the editor are in the nature of the significance of the work and its potential contribution to the research field.

3. The Editor-in-Chief examines the review reports and decides whether to accept or reject the manuscript, invite the authors to revise and resubmit the manuscript, or seek additional review reports. In rare instances, the manuscript is accepted with almost no revision. Almost

without exception, reviewers' comments (to the authors) are forwarded to the authors. If a revision is indicated, the editor provides guidelines to the authors for attending to the reviewers' suggestions and perhaps additional advice about revising the manuscript.

4. The authors decide whether and how to address the reviewers' comments and criticisms and the editor's concerns. The authors return a revised version of the paper to the Chief Executive Editor along with specific information describing how they have addressed the concerns of the reviewers and the editor, usually in a tabular form. The authors may also submit a rebuttal if there is a need especially when the authors disagree with certain comments provided by reviewers.

5. The Chief Executive Editor sends the revised manuscript out for re-review. Typically, at least 1 of the original reviewers will be asked to examine the article.

6. When the reviewers have completed their work, the Editor-in-Chief examines their comments and decides whether the manuscript is ready to be published, needs another round of revisions, or should be rejected. If the decision is to accept, the Chief Executive Editor is notified.

7. The Chief Executive Editor reserves the final right to accept or reject any material for publication, if the processing of a particular manuscript is deemed not to be in compliance with the S.O.P. of *Pertanika*. An acceptance notification is sent to all the authors.

9. The editorial office ensures that the manuscript adheres to the correct style (in-text citations, the reference list, and tables are typical areas of concern, clarity, and grammar). The authors are asked to respond to any minor queries by the editorial office. Following these corrections, page proofs are mailed to the corresponding authors for their final approval. At this point, **only essential changes are accepted**. Finally, the manuscript appears in the pages of the journal and is posted online.

ABSTRACTING AND INDEXING OF PERTANIKA JOURNALS
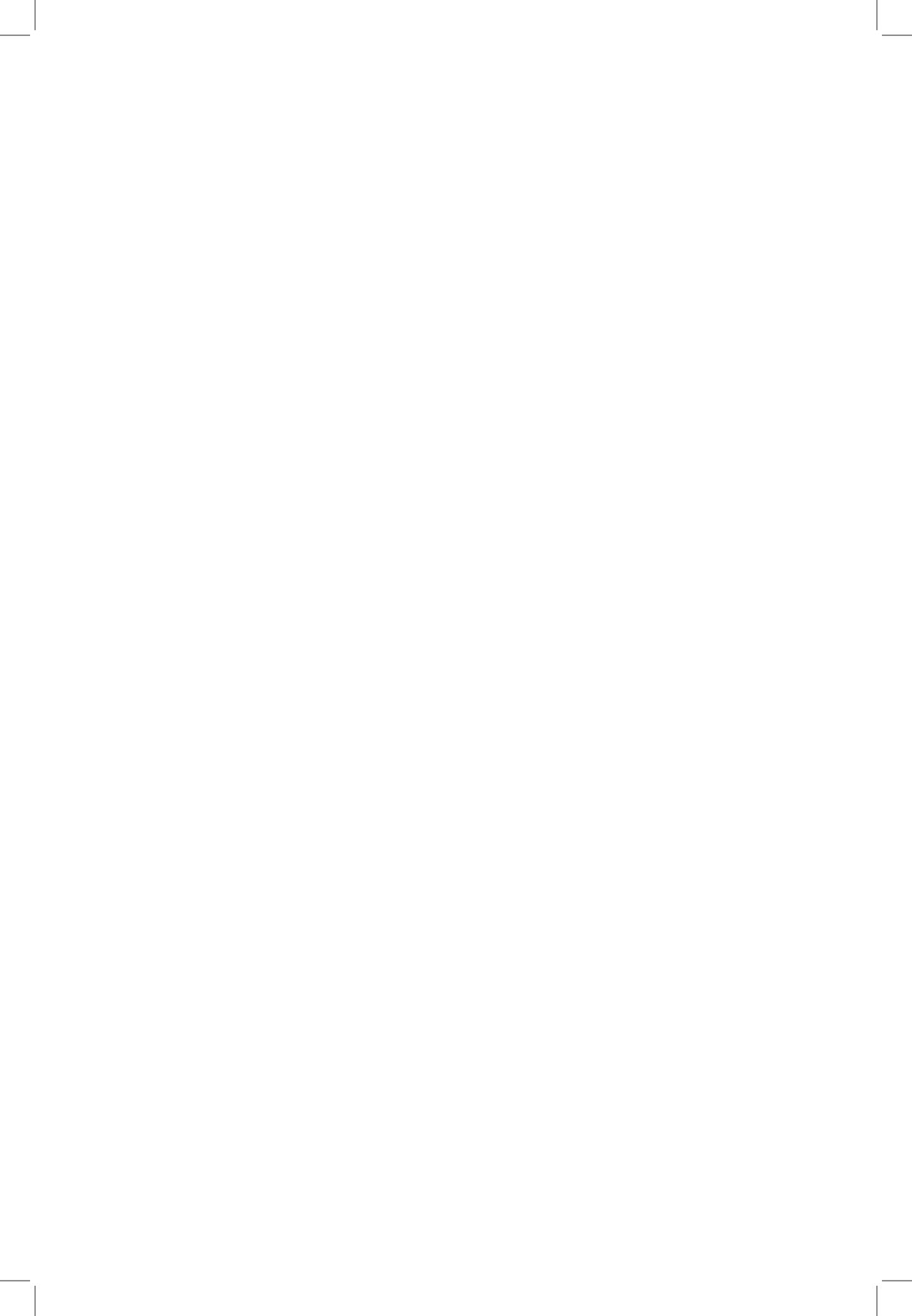
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Foreword

Welcome to the first issue of 2023 for the Pertanika Journal of Social Sciences and Humanities (PJSSH)!

PJSSH is an open-access journal for studies in Social Sciences and Humanities published by Universiti Putra Malaysia Press. It is independently owned and managed by the university for the benefit of the world-wide science community.

This issue contains 24 articles: one review article; and the rest are regular articles. The authors of these articles come from different countries namely China, India, Indonesia, Malaysia, Pakistan, Thailand and Ukraine.

A regular article titled "Social Interaction of Japanese Elderly in Chiang Mai, Thailand" sought to investigate the social interactions of Japanese elderly staying long-term in Chiang Mai, using purposive sampling. This study shows that the Japanese elderly regularly interacted with people in the community via daily life and social activities in daily face-to-face conversation in micro-system, mesosystem and exo-system surrounding. The detailed information of this article is presented on page 81.

Siti Balqis Md Nor and colleagues provide a critical revision to explore the counselling profession in terms of their method of perceiving the profession, the work emotions when dealing with clients, and the main job demands and resources of the counsellors, in their article entitled "Counsellors' Emotions at Work: What Can We Learn from Their Experiences?". The study's first finding shows that counsellors perceived their profession as challenging. As for the second finding, positive and negative emotions are the themes associated with the counsellors' emotions at work. Further details of the study can be found on page 139.

A selected article from the scope of population studies, titled "Vaxx-Confident and Vaxx-Hesitant Agents: Factors Affecting COVID-19 Vaccination Willingness among Young Adults in Klang Valley, Malaysia" examines the willingness of Malaysian young adults to get vaccinated, the contributing factors, and hindrance factors towards vaccination among young adults. The findings revealed that more than half of the respondents were willing to get vaccinated, emphasizing the salient role of reliable and trusted information in shaping their inclinations. Details of this study are available on page 339.

We anticipate that you will find the evidence presented in this issue to be intriguing, thought-provoking and useful in reaching new milestones in your own research. Please recommend the journal to your colleagues and students to make this endeavour meaningful.

All the papers published in this edition underwent Pertanika's stringent peer-review process involving a minimum of two reviewers comprising internal as well as external referees. This was to ensure that the quality of the papers justified the high ranking of the journal, which is renowned as a heavily-cited journal not only by authors and researchers in Malaysia but by those in other countries around the world as well.

A special thanks to the Editor-in-Chief, Prof. Dr. Gazi Mahabubul Alam for serving Pertanika Journal of Social Sciences and Humanity for the past year, in ensuring Pertanika plays a vital role in shaping the minds of researchers, enriching their lives, and encouraging them to continue their quest for new knowledge. We welcome the new Editor-in-Chief, Prof. Dr. Roziah Mohd Rasdi on board. We hope that her involvement and contributions towards Pertanika would not only improve its quality but also support the development efforts in making it an international journal of good standing.

We would also like to express our gratitude to all the contributors, namely the authors, reviewers, and Editorial Board Members of PJSSH, who have made this issue possible.

PJSSH is currently accepting manuscripts for upcoming issues based on original qualitative or quantitative research that opens new areas of inquiry and investigation.

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Review Article

Fishermen's Knowledge of Astronomical Phenomena in Fishery Activities: A Systematic Literature Review

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ABSTRACT

Fishermen still use knowledge-based astronomical phenomena in their fishing practices in this modern age. Several scholars were interested in this aspect, producing mixed results and formulating different perspectives. The diversity of these previous data and the differences in their perspectives have geared towards a need to review these past findings systematically. Therefore, established systematic literature is required as it provides advantages related to quality control and limits systematic bias by defining, screening and synthesising studies that address the research question. Hence, this study conducted a systematic literature review on how fishermen use their knowledge-based astronomical phenomena in their fisheries activities. This study relied on the review protocol-ROSES. Two main databases, Scopus and Google Scholar, and one supporting database, Dimensions, were used. Based on the thematic analysis, three main themes were identified and, thus, have further produced 11 sub-themes. Findings show that fishermen's astronomical knowledge influences their fishery activities based on six elements; first, know the best time to catch an abundance of marine catches; second, know the best location to catch an abundance of marine catches; third, enable fishermen to assess the maturity of marine species; fourth, repeating astronomical phenomena produced a calendar to assist fishermen in carrying out fishery activities; fifth, guide the estimation time and safety for

fishermen at sea; and sixth, guides fishermen on the most appropriate technique to use when carrying out fishery activities.

Keywords: Astronomical phenomena, fishermen's knowledge, fishery, systematic literature review

INTRODUCTION

Globally, the number of fishermen has crossed a million. By 2018, approximately 38.98 million fishermen had declared fishing as their primary livelihood ensuring life continuity (Food and Agriculture Organization of the United Nations [UN-FAO], 2020). The annual increase in fishermen demonstrates that fishing is still an important livelihood, particularly for communities living in coastal areas. Based on the socio-cultural background, an interconnected relationship between nature and culture will ensure the continuation of life by fishermen on the social, historical, economic, and cultural dimensions. The global fishery operation is directly affected by wind patterns, tidal and lunar cycles (Bezerra et al., 2012), seasons, fish's life cycle, and duration of rain occur (Silva, 2005). Most fishermen are familiar with marine life, which varies annually based on environmental and astronomical factors (Johannes & Neis, 2007). Thus, the information is crucial to reduce the risk of captures dropping, as these are their primary livelihood (Kalikoski & Vasconcellos, 2007).

Fishermen have extensively established their knowledge of astronomical phenomena in fishing cultures worldwide. For example,

the Bugis fishermen are aware of the moon and tides (Ammarell, 1999), and Malawi fishermen are expertise in the interpretation of natural signs (e.g. lunar cycle's effect, current and wave) to forecast the weather and improve their fisheries' efficiency (Nsiku, 2007). Furthermore, experts have identified that the optimum tidal conditions were the best time for fishing in the Vanuatu Islands as the fish migrated from deep waters to the reef region (Hickey, 2007). Additionally, the fishermen's community on the East Coast of North Sumatra knows that tidal cycles can be used for fishing (Aulia, 2019). Fishermen in the Patos Lagoon know that it is hard to capture croakers' fish during a full moon. They believe that the moon influences the time and the bounty of sea catch. Therefore, the fishermen's knowledge of the moon has constructed a calendar that guides the fisher's community (Kalikoski & Vasconcellos, 2007; Sulistiyono, 2014; Takeda & Mad, 1996). Overall, the main guideline for fishing activities is based on astronomical phenomena knowledge.

Hitherto, studies on fishermen's knowledge of astronomical phenomena in various fields have been carried out. Studies done by Nishida et al. (2006), Bezerra et al. (2012), and Jo (2018) have examined the influence of tides on the fishermen's fishing routines in Brazil and Korea, while Nash et al. (2017) studied how Oman's fishermen refer to the star when operating their fishing activities. The Gorontalo fishing community in Tomini Bay, Indonesia, also used the constellation sign to locate fish movement (Madjowa et al., 2020). Extensively, studies

by Galacgac and Balisacan (2002), Lefale (2010), Carbonell (2012), Nirmale et al. (2012) and Braga et al. (2018) reviewed how fishermen in the Phillippines, Samoa, Spain, India and Brazil have relied on astronomical knowledge in weather forecasting. Existing studies and increasing research on astronomical knowledge among fishermen have contributed more to existing literature. There is a mounting need to review these data systems to provide future scholars with an organised and comprehensive understanding of the pattern of previous findings. Despite this mounting need, however, the traditional way of reviewing previous studies related to fishermen is still practised by scholars such as Muhammad et al. (2016), Viji et al. (2017), Zain et al. (2018), Thakur (2018) and Sundaram et al. (2018). Traditional literature review (TLR) faces several issues without disregarding its importance. Firstly, it does not follow a particular method, and secondly, it places less emphasis on systematic search strategies, thus making such reviews vulnerable to recovery bias and transparency (Durach et al., 2017; Kraus et al., 2020). Kraus et al. (2020) added that quality control is virtually impossible as the TLR does not perform a quality assessment.

A systematic literature review (SLR) was performed to overcome this drawback in the traditional LR. SLR is a scientific method that aims to limit systematic bias by identifying, screening and synthesising research questions using a particular and systematic methodology (Petticrew & Roberts, 2008). Thus, quality assessment is done on all relevant articles to avoid bias (Kraus et al., 2020).

Based on the mounting need to systematically review existing literature and its benefits, as well as the numerous issues with TLR, this study aims to develop an SLR regarding how fishermen use their astronomical phenomena knowledge in fishing activities. This study was based on the research question, "How does fishermen's knowledge of astronomical phenomena influence fishery activities?" Besides, this study adduces a new perspective and integration regarding fishermen's knowledge about astronomical phenomena, which involves the relationship between the community's socio-culture and environment. Therefore, the contributions of this study indirectly fulfil the need for fishermen to understand astronomy to carry out fishery activities and ensure the sustainability of fishery resources.

METHODOLOGY

This section involves five main issues: the review protocol, formulation of research questions, systematic searching strategies, quality assessment and data extraction and analysis.

The Review Protocol – ROSES

This study was based on the review protocol referred to as RepOrting Standards for Systematic Evidence Syntheses (ROSES). ROSES was introduced specifically for systematic review and maps, which involves environmental management and better demonstrated the nuances and heterogeneity across diverse review needs (Haddaway et al., 2018). ROSES provides

methodological guidance for the researchers in the current SLR. Based on ROSES, the researchers have concluded four main methodological steps. First, the researcher designed suitable research questions. Next, researchers performed a systematic search strategy consisting of three main processes: identification, screening and eligibility. The researchers then proceeded with the quality assessment process and finalised the SLR methodology with data extraction and analysi*s* on the selected articles.

Formulation of Research Questions

Having a comprehensive research question is important in SLR. The research question will drive the selection of articles, data extraction and reporting (Xiao & Watson, 2019). Formulating the research questions was based on specific mnemonics (PICo; Lockwood et al., 2015). PICo is a tool for building research questions based on three keywords: **P**opulation, phenomenon of **I**nterest and **Co**ntext. Based on these three keywords, their relevance to this study is Fishermen (**P**opulation), knowledge about the astronomical phenomena and fishery activities (phenomena of **I**nterest), as well as global context (**C**ontext). Thus, the research question is, "How does fishermen's knowledge of astronomical phenomena influence fishery activities?"

Systematic Searching Strategies

There are three main phases in implementing the systematic searching strategies: identification, screening and eligibility. These three phases are shown in a flow chart in Figure 1, which is an adaptation of the flow chart by Shaffril et al. (2019).

Identification. The identification phase is a process that searches for synonyms, related terms and various terms related to the main keyword in this study, which are *local knowledge, fishermen, astronomy* and *fishery.* Enriching the main keywords was performed by referring to two sources: thesaurus online and previous studies' keywords. To avoid retrieval bias, as stressed by Durach et al. (2017), the researchers decided to use more than one database. Therefore, two main databases (Scopus and Google Scholar) and one supporting database (Dimensions) were used to find related articles. The reliance on Scopus as the main database is due to its status as a full indexing database that contains more than 70 million records and covers multidiscipline journals, and it has strength in terms of quality control, full-text search, maximum search string length, advanced search string and reproducibility of search results at different locations (Gusenbauer & Haddaway, 2020; Martin-Martin et al., 2018). Google Scholar was chosen as of the main databases based on several justifications. First, it provides more sources for review as it offers 389 million documents; second, it offers more documents related to social sciences and art and humanities; third, Google Scholars offers diverse publication types, as more proceedings, books, theses, chapters in the book and unpublished materials can be retrieved (Gusenbauer & Haddaway, 2020;
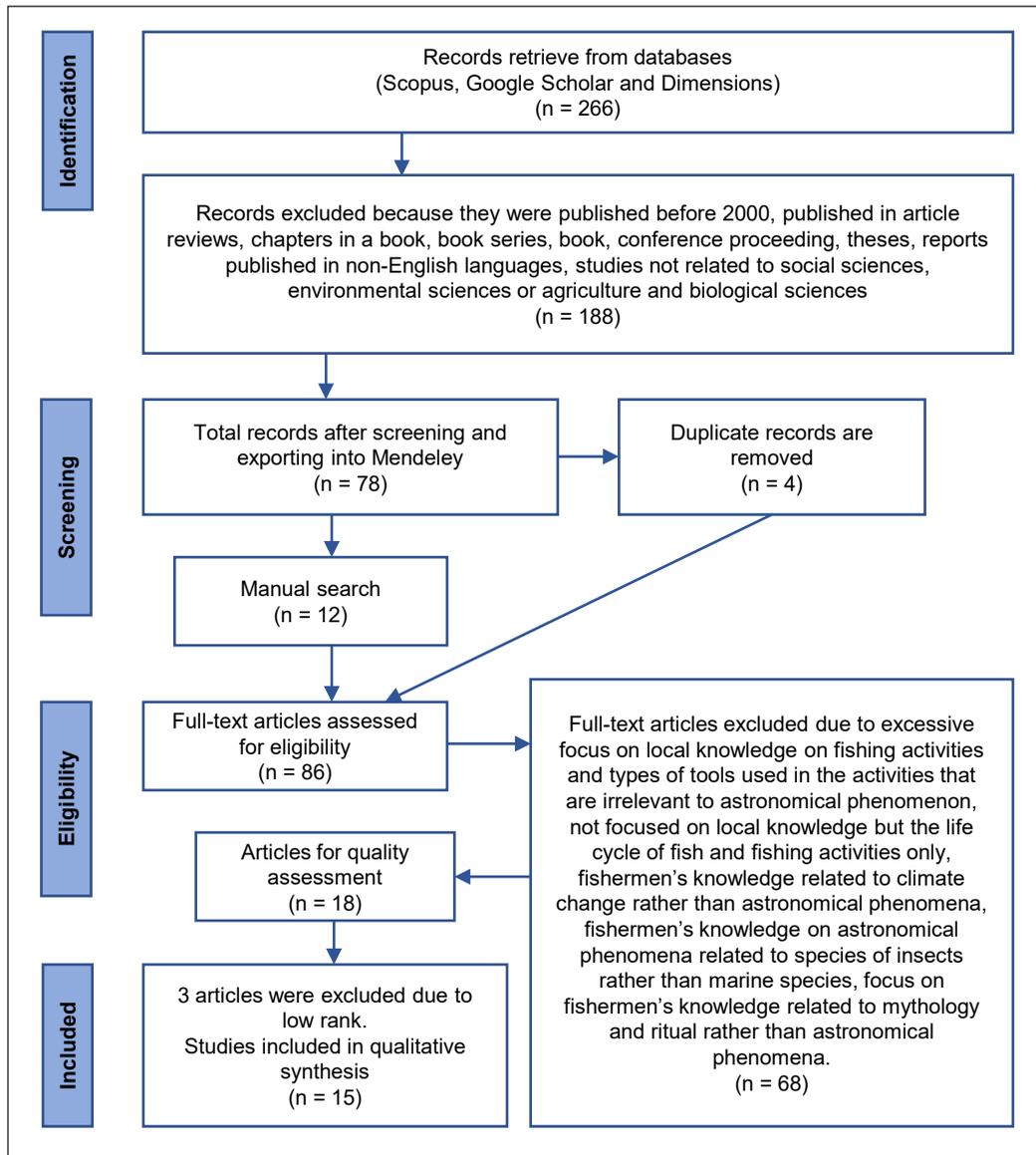
Figure 1. Flow chart adaptation from Shaffril et al. (2019)

Halevi et al., 2017; Martin-Martin et al., 2018).

In comparison, the Dimensions database was used as a supporting database because of its wide coverage and for discovering the right or most relevant article based on indexing, which is similar to the approach by Google Scholar (Bode et al., 2018). This database has more than 89 million publication records and more than 50,000 journals. As for the Scopus database, the search string formation process involved were field code function, phrase searching, the Boolean operator

(OR, AND), truncation and wild cards. The search process for the Google Scholar database is done via functions of phrase searching and Boolean operator (OR, AND). In addition, whenever appropriate, the combination of keywords such as "fishermen local knowledge", "fishermen local wisdom", "fishermen traditional knowledge", "fishermen folk knowledge", "fishermen celestial knowledge", "fishermen indigenous ecology knowledge", astronomy, ethnoastronomy, "folk astronomy", "culture astronomy", moon, star, tide, constellation, fishing, maritime and coastal were performed in the database. In addition to advanced searching, the authors relied on manual searching techniques such as handpicking and snowballing in Google Scholar. In another database, Dimensions, the formulation of the search string involved phrase searching, the Boolean operator (OR, AND) and the field code function. Searching for articles based on databases was carried out in August 2020. The full search string for the Scopus and Dimensions databases is shown in Table 1 below.

Out of all the searches based on the three databases, this study found 266 relevant articles.

Table 1
The search string

Databases	Keywords used
Scopus	TITLE-ABS-KEY(("local knowledge" OR "local wisdom" OR "local practi*e" OR "traditional knowledge" OR "folk knowledge" OR "celestial knowledge" OR "ecology* knowledge" OR "traditional knowledge" OR "indigenous knowledge" OR "indigenous ecology* knowledge" OR "local ecology* knowledge" OR "traditional ecology* knowledge") AND (fisherm*n OR trawler* OR fisher* OR fisherfolk*) AND (astronom* OR ethnoastronom* OR "folk astronom*" OR "culture* astronom*" OR moon OR lunar OR tide* OR star* OR constellation*) AND (fish* OR maritime* OR coastal))
Dimensions	("fisherman local knowledge" OR "fishermen local knowledge" OR "fisherman local wisdom" OR "fishermen local wisdom" OR "fisherman local practice" OR "fishermen local practice" OR "fisherman local practise" OR "fishermen local practise" OR "fisherman traditional knowledge" OR "fishermen traditional knowledge" OR "fisherman folk knowledge" OR fishermen folk knowledge" OR "fisherman celestial knowledge" OR "fishermen celestial knowledge" OR "fisherman ecology knowledge" OR "fishermen ecology knowledge" OR "fisherman ecological knowledge" OR "fishermen ecological knowledge" OR "fisherman indigenous knowledge" OR "fishermen indigenous knowledge" OR "fisherman indigenous ecology knowledge" OR "fishermen indigenous ecology knowledge" OR "fisherman indigenous ecological knowledge" OR "fishermen indigenous ecological knowledge" OR "fisherman local ecology knowledge" OR "fishermen local ecology knowledge" OR "fisherman local ecological knowledge" OR "fishermen local ecological knowledge" OR "fisherman traditional ecology knowledge" OR "fishermen traditional ecology knowledge" OR "fisherman traditional ecological knowledge" OR "fishermen traditional ecological knowledge") (astronomy OR astronomical OR ethnoastronomy OR ethno-astronomy OR ethnoastronomies OR "folk astronomy" OR "folk astronomies" OR "culture astronomy" OR "cultural astronomy" OR moon OR lunar OR tide OR tides OR tidal OR star OR stars OR constellation OR constellations) (fishing OR fisheries OR maritime OR coastal)

Screening. The 266 articles identified in the identification phase had undergone the screening process. For articles obtained from the Scopus and Dimensions databases, the screening process was carried out automatically using the '*limit to*' function found in the databases. In contrast, for articles obtained from the Google Scholar database, the screening process was semi-automatic because the '*limit to*' function is limited only to the year of publication. The criteria for selecting articles were based on the research question formulated earlier (Kitchenham & Charters, 2007). The choosing criteria are important for ensuring that the selected article is related to the study (Alsolami & Embi, 2018). Therefore, the screening process minimised the number of related articles (Okoli, 2015). Table 2 shows four selection criteria chosen by this study.

A timeline publication of 20 years was selected (2000–2019). This timeline is selected since this duration has produced an adequate number of articles to be considered in SLR, and this is in line with the concepts of study's maturity by Kraus et al. (2020) and Alexander (2020). Since this study focused on fishermen's knowledge of astronomical phenomena related to fishery

activities, the topic of this study related to social sciences, agricultural and biological sciences, and environmental sciences were earmarked. The choice of language used in the study was limited to only the English language because, according to Okoli (2015), a researcher can only examine an article written in a language that is easily understood. The selection of articles was also based on whether the article had been published in an indexed journal to ensure that the article was of good quality. As for the Google Scholar and Dimensions databases, articles published in indexed journals were manually selected by examining each article and determining whether the journals were listed in Scopus.

After screening the 266 articles, 78 were identified for the next process, while 78 were imported to Mendeley's reference manager software. The Mendeley software identified four redundant articles and discarded them from the software. According to Alsolami and Embi (2018), the manual searching process was also conducted with the help of Mendeley by using the '*related*' function and suitable keywords. Hence, to ensure comprehensive literature searching, both bibliographic database searching and

Table 2
Inclusion and exclusion criteria

Criterion	Inclusion	Exclusion
Literature type	Indexed Journal (research articles)	Non-indexed journals, article reviews, chapters in books, book series, books, conference proceedings, theses, reports
Language	English	Non-English
Timeline	Between 2000-2019	<2000
Subject Area	Social Sciences, agricultural and biological sciences, and environmental sciences	Non-social sciences, non-

supplementary search methods (Cooper et al., 2018) were used. This study used a supplementary search method in the form of manual searches using the Mendeley software and the forward references search method found in the Google Scholar database by identifying articles related to this study (Levy & Ellis, 2006). Twelve articles were identified using the manual searching method. Overall, 86 articles were identified for the eligibility phase.

Eligibility. The eligibility phase is a process where the researcher examines the article's relevancy to the needs of the study by examining the title, abstract, findings and discussions. Sixty-eight articles were excluded because they did not fulfil the study's needs. These articles were excluded due to excessive focus on local knowledge of fishing activities and types of tools used in the activities that are irrelevant to astronomical phenomena, not focused on local knowledge. However, the life cycle of fish and fishing activities only, fishermen's knowledge related to climate change rather than astronomical phenomena, fishermen's knowledge of astronomical phenomena related to species of insects rather than marine species, focus on fishermen's knowledge related to mythology and ritual rather than astronomical phenomena. Overall, 18 articles were selected for the next process, quality assessment.

Quality Assessment

The examination of these 18 articles involved a screening method that used the Mixed-Methods Appraisal Tool (Hong et al., 2018). This assessment tool was used because the selected articles had used qualitative and mix-methods in their studies. It was agreed that each article should fulfil at least three of the five criteria mentioned in the checklist to be eligible for the next process. As a result, only 15 selected articles eventually proceeded with the data extraction and analysis process.

Data Extraction and Analysis

This study relied on the qualitative synthesis of qualitative, quantitative and mixed-method studies (Okoli, 2015). This method of extracting the relevant data from the selected articles was based on the integration concept (Whittemore & Knafl, 2005). Data extraction was done by comprehensively examining the abstract, results and finding of each of the 15 selected articles. Data from the selected articles were extracted if they fulfilled several conditions. First, it can answer the determined research questions, and second, if it is related to the study's objective. As the study is performing a qualitative synthesis of mixed research designs, thematic analysis is the most appropriate technique (Flemming et al., 2019). The thematic analysis aims to identify, analyse and explain the themes and sub-themes based on the collected data (Braun & Clarke, 2006). First, the authors identify the themes and sub-themes by noting and identifying the similarities or relationships between the extracted data. Finally, the identified themes were encoded to produce the main themes. This

study initially found three main themes: astronomical phenomena, fish reproduction and fishing techniques. Next, from the three themes, this study produced 11 related sub-themes and later, the main and sub-themes were named, as shown in Table 3.

RESULTS

Background of Selected Studies

This study examined 15 selected articles. Based on the thematic analysis, three main themes were built: *astronomical phenomena, fish reproduction* and *fishing techniques.* Then the themes were analysed to produce 11 sub-themes: moon, tides, sun, star, wind, sea, season, spawning period, breeding period, fish catching, and crab catching. Examination of the articles showed that six studies used the mixed method approach, and nine used the qualitative method. Seven studies were carried out in Brazil, while eight were carried out in eight different locations, namely Venezuela, Mexico, Spain, India, Bangladesh, Oman, Portugal and Korea. Of the 15 articles, two were published in 2006, two in 2010, one in 2011, three in 2012, one in 2015, one in 2017, three in 2018 and two in 2019.

Themes and Sub-Themes

Astronomical Phenomena. Fishermen influence astronomical events such as the moon, the tidal cycles, the sun, the stars, the wind, seasons and marine conditions. Their knowledge of the moon enables them to identify abundant marine species. For example, specific marine species, such as

E. Itajara (Gerhardinger et al., 2006), *E. polyphekadion* (Boomhower et al., 2010), *A. Narinari* (Cuevas-Zimbrón et al., 2011), species of squid (Postuma & Gasalla, 2010) and those around Farol de São Thomé Port in South-eastern Brazil (Alves et al., 2019), were found in huge schools during the full moon phase. Fishermen are also familiar with a crab's (meat, among others) condition based on the lunar phenomenon. Fishermen on the coast of Ratnagiri in India (Nirmale et al., 2012) are aware that the crab caught on the new moon has more meat, while fishermen in Bangladesh (Deb, 2015) also know that crabs caught during the new moon have much muscle and eggs, whilst crab's price at the market is much higher than at full moon.

Fishermen also know the relations between the moon and the tidal cycle, apart from helping fishermen carry out their fishing activities. Fishermen know tidal cycle forces depend on moon phases (Carbonell, 2012). For instance, the tidal-cyclical force of fishing in Paraiba State, Northeast Brazil, has been predicted based on the moon-rise and setting (Nishida et al., 2006), while fishermen in Bangladesh (Deb, 2015) know that when the full moon, tidal force is higher and stronger than the new moon. The relationship between the knowledge of fishermen of tidal cycles and the lunar cycles produced a calendar for the support of sea fishing in Northeastern Brazil (Bezerra et al., 2012), Bangladesh (Deb, 2015) and Gomso Bay, Korea (Jo, 2018).

Knowledge of the lunar phenomenon is important to ensure the success of marine

Table 3
Table of findings

No	Studies	Years	Region	Astronomical Phenomenon							Fish Reproduction		Techniques	
				MN	TD	SN	SR	WN	SE	SS	SP	BP	FS	CR
1	Gerhardinger et al.	2006	Brazil	✓						✓	✓			✓
2	Nishida et al.	2006	Brazil	✓	✓									
3	Boomhower et al.	2010	Venezuela	✓							✓			
4	Postuma & Gasalla	2010	Brazil	✓					✓					
5	Cuevas-Zimbrón et al.	2011	Mexico	✓				✓	✓					
6	Nirmale et al.	2012	India	✓	✓	✓		✓	✓	✓		✓		
7	Carbonell	2012	Spain	✓						✓		✓		
8	Bezerra et al.	2012	Brazil	✓	✓			✓	✓	✓			✓	
9	Deb	2015	Bangladesh	✓	✓		✓	✓	✓					
10	Nash et al.	2017	Oman				✓	✓		✓				
11	Takahashi & Nishida	2018	Brazil	✓	✓									✓
12	Jo	2018	Korea	✓	✓					✓				
13	Braga et al.	2018	Brazil							✓	✓			
14	Braga et al.	2019	Portugal						✓	✓	✓	✓		
15	Alves et al.	2019	Brazil	✓	✓								✓	

Note. **Astronomical Phenomenon:** MN= Moon; TD= Tides; SN= Sun; WN= Wind; SE= Sea; SS= Season; SR= Star; **Fish Reproduction: SP**= Spawning Period; BP= Breeding Period; **Techniques:** FS= Fish catching; CR= Crab catching

catches and the tidal cycle phenomenon. For example, in Northeastern Brazil (Nishida et al., 2006), fishermen in the state of Paraiba prefer to catch crabs at low tides during spring tides because the islets were not then covered with water. This practice differs from fishermen along the Ratnagiri coastline in India (Nirmale et al., 2012), who catch crabs at high tide at night due to a larger catch at that time. On the other hand, fishermen in Bangladesh (Deb, 2015) and Gomso Bay, Korea (Jo, 2018) prefer to carry out fishery activities during the spring tide. Fishermen in Bangladesh refer to the spring tide period as the *Jo period*, which is between the 11th to 20th and the 26th to 5th, according to the Bengali lunar month, where they cast their nets into the water during the spring and collect them during the neap tide. Therefore, in Domso Bay, Korean fishermen also prefer to fish during the spring tide because the neap tide is at its lowest. Nonetheless, depending on the marine species, fishermen in Domso Bay, Korea, engage in neap tide fishing. Small shrimp, for example, are typically caught during the neap tide because it is a better time to catch species that live in shallow waters or at the sea's bottom.

In addition, fishermen in Farol de São Thomé Port in Southeastern Brazil (Alves et al., 2019) carry out fishery activities based on tidal cycle conditions. The fishermen's community knows that tidal cycle conditions determine which species are in abundance. For example, shrimps are caught during a big, launch, and full tide, whereas bony fishes are usually caught during dead,

breaking and dried tide. Hence, although most fishermen say that the moon and tidal cycles influence their marine catches, some fishermen catch blue land crabs in Mamanguape Estuary in Paraiba State, Brazil (Takahashi & Nishida, 2018) who are not influenced by the lunar or tidal cycle phenomena because this species lives in higher land compared to crabs that live in the lower land areas (Nishida et al., 2006). These fishermen communities carry out fishery activities at high tides during the full moon and new moon because, at that time, there are plenty of mosquitoes, and this disrupts their activities.

Moreover, fishermen's knowledge about the seasonal phenomenon also helps them to carry out fishery activities. This seasonal phenomenon is a yearly cycle. For example, the *E. Itajara* fish species in Southern Brazil is caught in abundance in December (Gerhardinger et al., 2006). In contrast, the sea lamprey species along the Minho river in Portugal (Braga et al., 2019) are caught in abundance in January, February and April. As for the fishermen community in Catalonia, Spain (Carbonell, 2012), January is the fishing season, and it is not encouraged to go fishing in February because of dangerous weather. Other than January, June, which is during spring, is the best time to go fishing because, at that time, the fish are constantly moving to the water's surface, and it is easier to net the catch. Conversely, for the fishermen community in Oman (Nash et al., 2017), the best time to fish is during winter (22 August until 17 October) because the fish species there

are easily caught when the water is cold. The seasonal phenomenon also influences crab catching along the Ratnagiri coastline in India. There are more crabs during the monsoon season when the rains come, while small shrimps in Domso Bay, Korea, are abundant from July to August (Jo, 2018).

Fishermen's knowledge about the seawater condition phenomenon also helps them to carry out fishery activities. For example, more squid is caught when the seawater is moderately warm, which is when it rains during the summer (Postuma & Gasalla, 2010). On the other hand, some species are abundant when the seawater temperature is low, such as the *A. Narinari* species in the Southern Gulf of Mexico (Cuevas-Zimbrón et al., 2011). This species is also easily caught when the waters are shallow. Furthermore, seawater conditions also help some species to breed. For example, the sea lamprey species in Minho River, Portugal (Braga et al., 2019) need warmer temperatures for breeding purposes. Besides the knowledge that marine products can be captured, the sea condition also helps fishermen when they are lost at sea. For example, the fishermen in Bangladesh use water currents to decide their position at sea (Deb, 2015). The current moves towards the coast in the high tide, while in the low tide, it moves away.

Therefore, seawater conditions also help fishermen to determine when it is safe to carry out fishery activities. Fishermen in Catalonia, Spain (Carbonell, 2012) determine wind conditions based on seawater conditions. For example, the sight of white horses (wave breaks or foams) at sea indicates that the wind speed will increase by 1–2 knots. When the sea surface resembles fish scales, the wind becomes much stronger, and when the whole surface is filled with white horses, the wind speed increases to 8–10 knots, and when the whole sea is filled with foam, it is an indication that the sea is stormy and unsafe for fishermen.

Knowledge of the wind phenomenon helps fishermen understand the weather situation in Catalonia in addition to knowledge of marine water. For example, the weather will be good when the wind blows to the sea, and when the wind blows southwest in the morning, it indicates that the weather will fit and fishing can be done. The wind phenomenon also helps fishermen to determine if fish are abundant. If, for example, the cold front blows through the cold wind, the temperature drops to the hot wind, and there is a great abundance of *A. Narinari* stingray species (Cuevas-Zimbrón et al., 2011). Fishermen in Bangladesh know that the best time to fish is when the wind is blowing from the north and east to the west (Deb, 2015), whereas fishermen in Barra de Mamanguape and Tramataia in Northeastern Brazil (Bezerra et al., 2012) know that the best time to fish is when the wind is blowing from the north, east, southwest, and northeast, while the southerly winds are indicative of an unsuitable time for fishing, because of the strong southern winds and the strong currents that cause fish to move towards the open sea.

Fishermen's knowledge about the sun also helps them to determine wind

conditions. For example, fishermen in Catalonia (Carbonell, 2012) know that when the sky is covered with clouds, the weather is likely to be windy, and rain is expected. Knowledge about the stars' phenomenon helps fishermen carry out fishery activities (Deb, 2015; Nash et al., 2017). Fishermen in Bangladesh (Deb, 2015) use the stars to determine their time and position at sea. For example, the North Star is always positioned in the north, and Venus appears when the Sun is about to rise. The evening stars (*Sandhyatara*) will set at 8 pm, when the *Borotara* star rises and when the *Borotara* star sets, Venus (*Suktara*) rises.

Fish Reproduction. The life cycle of species involves the spawning and breeding periods. Fishermen know that the spawning period for a certain species differs (Boomhower et al., 2010; Braga et al., 2018, 2019; Gerhardinger et al., 2006). The *E. Itajara* species found in southern Brazil (Gerhardinger et al., 2006) spawns in December during summer. Other species of fish spawn in December, namely sardines in Southeast Brazil (Braga et al., 2018). This sardine species spawns from early December until March; the peak season is in the summer. Fishermen in Minho river, Portugal, also know that sea lamprey spawns from April to June when the river water is at a high temperature (Braga et al., 2019). The *L. Analis* species spawns from May to June (Boomhower et al., 2010). Knowing the spawning period is important to prevent fishermen from fishing without disrupting the aggregation of eggs.

Fishermen's knowledge about the breeding period of a species is important to determine when it is best to catch the matured fish. For example, the breeding season for fish in Catalonia, Spain, is also in June (Carbonell, 2012), as the fish move around more and are easier to catch. Moreover, fishermen in Ratnagiri, India (Nirmale et al., 2012) know that the breeding season for crabs is during the monsoon season, which is from June to July and for the sea lamprey species in Minho river, Portugal, also starts from January to June (Braga et al., 2019).

Fishing Techniques. Fishery catches such as fish (Alves et al., 2019; Bezerra et al., 2012) and crabs (Nishida et al., 2006; Takahashi & Nishida, 2018) must be caught using techniques suitable with the tidal cycle, moon phases and wind conditions. Farol de São Thomé Port, Southeastern Brazil fishermen use various techniques to catch marine life based on tidal cycles and moon phases (Alves et al., 2019). The fishing community uses six tools to catch marine life: trawl nets, gillnets, cast nets, longline, cage and handline. Trawl nets are used during the high, launch and full tides. Currently, the tides are strong and facilitate marine life fishing, such as shrimps. The gillnet is used during dead, breaking and dried tides. The tidal currents are weak at this time, which helps to catch marine life using this tool, such as bony fish and cartilaginous fish.

Cast nets are suitable during breaking tide for catching bony fish, such as mullets,

because, at this time, the water level is low and moves slowly, which facilitates the catch. Next, the longline is used during the dead, breaking and dried tides. The long line is usually installed at night, and the catch is collected in the morning. Fish species suitable for this kind of net is the herring hake. Next, the cage is suitable for catching bony fishes (e.g. snapper and dolphinfish) during the launch tide, when the water level is high and strong, forcing the fish into the cage. Finally, handlines can be used to catch fish during all types of tides. This technique uses a hook when the tides are not influential. This equipment catches bony fish such as snappers, wreckfish and grey triggerfish. The fishing community in Barra de Mamanguape and Tramataia in northeastern Brazil also use various techniques to carry out fishery activities based on tidal cycle conditions (Bezerra et al., 2012). Eight fishery techniques are used by these fishermen, such as siege fishing, fishermen pay out the net, vertical fixing of a mullet net, gillnet, mesh net of silk, dragnet, cast net and longline. Siege fishing is carried out by three fishermen who row their boats to identify the movement of a school of fish. Then, the fishermen beat the water surface with a stick for the school of fish to swim towards the net. This technique is used at low tides during the big tide phase to catch small fish species, such as sardines and catfish. Finally, the 'fishermen pay out the net' technique is carried out at high tides during the big and flushing tides. This technique is assisted by strong seawater currents that manoeuvre the fish into the net.

Finally, the vertical fixing of the mullet net technique is when the net is placed across the canoe's bow, and a kerosene lamp is attached. Fish are attracted to the light and jump towards the source of the light.

In the case of dead tides or flushing, the gillnet is used since the current is slow at that time. Next, during the full moon/new moon, the mesh net of silk is used, and tides are flushed and broken. This technique is applied in three phases: installed on the rod during the low tide and nets in the muddy soil. Next, the network is lifted and placed at the end of the rod when the water is at the highest level. Finally, the fishermen remove the fish caught in the nets when the water level decreases. In the case of breaking and flushing tides, the drag and casting nets are also used, while the longline is used during all tides.

The crab-catching technique usually involves bare hands and several tools such as the hoe, straight blade sickle and wooden shirt-handled hook. The fishing community in the State of Paraiba in northeast Brazil usually uses two techniques to catch mud crabs: the *braceamento* and *tapamento*. The *braceamento* technique is used during breaking or flushing tides. Fishermen put their hands into the hole and catch the crabs by holding the dorsal carapace part if the crab is not far into the hole. However, if it is far into the hole, the fishermen use *tapamento*, where the fishermen close the hole with mud and tree roots and then return to collect the crabs. In this situation, the crab moves towards the sediment surface independent of the tides. However,

this technique is unsuitable during high tides because it would be difficult for the fishermen to determine the hole.

The catching techniques mentioned above are unsuitable for catching blue land crabs (Takahashi & Nishida, 2018) because this species lives in highlands that are higher than the high tide level. Hence, one of the techniques used is the mousetrap. The mousetrap is made of a wooden stick, an oil can, a strip of rubber, a circular piece of wood or plastic and wire. A variety of materials can substitute the oil can when making the mousetrap, for example, a PET bottle and PVC tubes. The PET bottle and PVC tube are used because they last longer than an oil can that would eventually rust. Besides, the PVC tube can also catch more blue land crabs compared to using an oil can and PET bottle because of its larger size.

DISCUSSION

Indications of the fishing community at sea regarding astronomical phenomena relating to the moon phases, tidal cycles, seasons, wind and the repeated rainy seasons are provided (Hanapi & Hassan, 2017; Silva, 2005). Most fishermen understand marine life movement, which differs yearly depending on habitat type, seasons, weather, moon phases and other factors (Johannes & Neis, 2007). This is important to reduce the risk of failure to land a large crop, their main source of revenue (Kalikoski & Vasconcellos, 2007). Fishermen should also be provided with in-depth fishery information, navigational information, fish characteristics, various fish species

and oceanography (William & Bax, 2007). Knowledge of astronomical phenomena influences fishermen's fishing activities through six elements. First, fishermen's knowledge of when the best time to catch the abundance of marine catches; second, fishermen's knowledge of the best location where to catch an abundance of marine catches; third, help fishermen to determine the maturity period of a marine species; fourth, repeating astronomical phenomena help produce a calendar to assist fishermen in carrying out fishery activities; fifth, guide the estimation time and safety issues for fishermen at sea or land; and sixth, guides fishermen on the most appropriate technique to use when carrying out fishery activities.

First, the astronomical phenomenon allows fishermen to know the best time to catch the abundance of marine catches. This astronomical phenomenon comprises moon phases, tides, seasons, wind and seawater conditions. The success of catches of any marine species depends on the optimal duration. For example, the full moon phenomenon (Alves et al., 2019; Boomhower et al., 2010; Cuevas-Zimbrón et al., 2011; Gerhardinger et al., 2006; Postuma & Gasalla, 2010) and the new moon (Deb, 2015; Nirmale et al., 2012) produce various catches for each marine species. This distinction depends on marine species' biology and habitat. Fishermen also learn about fishing seasons through their experience of seasonal phenomena. It is practised in the Oman fishing community (Nash et al., 2017), where these fishermen fish in the winter because it is easier to

catch the species in this region when the water is cold. However, a fishing group also carries out wind phenomena-guided fishing activities. For example, in the southern Gulf of Mexico, fishing communities will catch *A. Narinari* stingrays when hot winds blow, as this species usually occurs in low waters (Cuevas-Zimbrón et al., 2011).

Second, the astronomical phenomenon guides fishermen to know the location of the abundant marine catches. For example, fisherman's knowledge of seasonal phenomena (Gerhardinger et al., 2006), tidal phenomena (Jo, 2018), and lunar phenomena allow fishermen to know the presence of fish at that time. For example, the Southern Brazilian fishing group realises that several species of fish are in the winter under the sea. Therefore, underwater fishing operations will focus during the winter. Furthermore, during the neap tide, small shrimps live at the sea's bottom (Jo, 2018). Thus, in the Domso Bay group's tradition in Korea (Jo, 2018), it will happen during the neap tide to catch small shrimps at the bottom of the sea.

In addition, fishermen can know the position of readily available fish, particularly the group of fish species, by knowing about new moons and full moon phenomena (Ruddle, 1994). For example, the aggregation time of coral fish is longer during the new and full moon cycles, making it easier for fishermen to track and locate the fish. This forecast period of fish aggregation is not only for the day and month it takes place but also for the tidal movements (Ruddle, 1994). Knowledge

of fish-rich areas is also important because it ensures that fishermen get a large catch when they go out to sea and that their fishing activities are productive. Furthermore, this knowledge is also important since fishermen catch only marine species they like.

Third, knowledge about astronomical phenomena helps fishermen determine marine species' maturity period. The maturity period depends on a species' spawning and breeding season, each with its reproductive season. Reproductive knowledge determines the larvae's maturity (Bezerra et al., 2012). Fishermen's knowledge is also used to determine the location of fish spawning aggregation (Bezerra et al., 2021). In this way, catches can be kept at an optimal level, and the natural situation of a certain fish species cannot be disturbed (Poepoe et al., 2007). Disruptions in marine life's natural habitat may result in the extinction of some species. Additional aspects which should be considered to ensure that fish are caught in time are based on an appropriate fishing method (Bezerra et al., 2012). In addition, the breeding period is important because certain fish species breed in schools. Fishermen are in-depth aware of fish breeding in schools through moon or seasonal understanding. This knowledge helps them to increase catch at a certain place or time (Colin, 2012). Knowledge about fish breeding in groups is based on seasonal understanding (Boomhower et al., 2010).

Knowledge of tide cycles and the moon and season phenomena is essential for understanding a species' reproduction

period (Nishida et al., 2006). According to Naylor (2015), the species' reproduction is determined by the physiological rhythm of the yearly reproductive period, which is interacted during the spawning period by the semi-lunar gonadal rhythm. For species that breed according to the semi-moon cycle, the oocyte maturity stage occurs during high tide and the species breed during low tide, whereby the oocyte maturity stage occurs during high tide and in daylight. The biological nature of fish has a bearing on reproductive activity. For example, in fish, melatonin reacts to night light levels, magnetic fields, and tidal cycles (Takemura et al., 2010). It, therefore, shows that every species reacts differently depending on the conditions of life around it.

Fourth, knowledge about repeating astronomical phenomena helps produce a calendar that assists fishermen in carrying out fishery activities. Astronomical phenomena repeated every day, monthly or annually help fishing communities develop a calendar to help fishing activities. For example, fishermen have used the relationship between knowledge about tidal cycles and moon phase in the Barra de Mamanguape and Tramataia fishing community, northeastern Brazil (Bezerra et al., 2012), Bangladesh (Deb, 2015) and Gomso Bay, Korea (Jo, 2018), to promote and support fishing. Fishermen can indirectly help them plan their fisheries with knowledge of tide cycles and moon phases. Furthermore, the community can develop a calendar of the main fish species' spawning periods by observing the behaviour, size and

breeding conditions (Poepoe et al., 2007). The Hawaiian fishery community used traditional fishing knowledge to determine the breeding periods of major species to prevent the species' natural environment from being disturbed (Poepoe et al., 2007).

Fifth, knowledge about astronomical phenomena provides a guide about time and direction and ensures fishermen's safety. Astronomical phenomena are normally used to guide sea currents, seawater conditions, winds, sun and stars. This guide is a traditional way of guaranteeing their safety at sea by fishermen (Alves et al., 2019). The wind guide, sea currents and wind type can be used in hours or days to help predict the weather (Carbonell, 2012; Galacgac & Balisacan, 2002; Shalli, 2016). Timmers (2012) states that bad weather restricts fishing and indirectly affects fishermen's life and equipment (Shalli, 2016). In Brazil, fishermen's knowledge is more favourable to ensure their safety and success in fishing activity (Alves et al., 2020). One of the most dangerous fishing lives is due to the working environmental factor (Levin et al., 2010). In order to ensure their safety during fishing, it is therefore important for fishermen to understand astronomical phenomena.

Sixth, knowledge about astronomical phenomena guides fishermen when carrying out fishery activities based on a suitable technique. They understand that each species requires a different fishing technique (Bulengela et al., 2019) based on its size, characteristics, and habitat (Alves et al., 2019). The right technique ensures an optimal catch (Nishida et al., 2006)

and the capture of only mature fish from a species (Bezerra et al., 2012). The proper technique also increases the amount of catch of a specific species while reducing the number of fishermen needed. For instance, innovation in the catch technique was involved in the catch of blue land crabs (Takahashi & Nishida, 2018), using PVC tubes rather than oil cans. Thus, the number of crabs caught in PVC pipes increased. Furthermore, the right technique ensures the catch is anticipated (Bezerra et al., 2012). Consequently, fishermen must know the location of certain fish species as it ensures that the correct technique is used (Deepananda et al., 2016). Some fishing techniques affect the ecosystem, so immature marine life can be avoided (Truchet et al., 2022). For example, the mesh net of silk catches marine species of different dimensions and at different stages of development (Bezerra et al., 2012). It is, therefore, important from the aspect of fish management and overfishing, which ensures the sustainability of a species, especially an endangering species.

CONCLUSION

This study offers several suggestions that future studies should take into account. First, fishermen's knowledge of astronomical phenomena should be investigated in more places around Asia. Results show that there have been very few studies in Asia. It is because the population of fishermen in Asia is 85% highest than the world population of fishermen (UN-FAO, 2020). Therefore, the fishing population in Asia indirectly produces far more diverse knowledge of the cultural, language, and local and geographical astronomical phenomena. For example, Indonesia, the world's largest archipelagic state, has over 17,500 islands, 10,666 coastal villages, and a population of 16.42 million, all of whom have a long fishing tradition and culture (Sunaryanto, 2010). Therefore, there is a larger and more robust discussion about their fishermen's knowledge. Furthermore, the diversity and variations of Asian societies, cultures, and religions often lead to different perspectives on studying fishermen's astronomical knowledge. In contrast to the study on ethnoastronomy discussed by Western scholars, Sulaiman and Hassan (2020) discuss fishermen's knowledge of astronomical phenomena in terms of religion, known as ethno-*falak*.

Second, fishermen's knowledge of solar and lunar eclipses should be discussed. There is an effect on the behaviour of reef fish due to solar eclipses (Jennings et al., 1998). Based on this research, the author discovered that none of the works discusses knowledge of the sun and moon phenomena and their effects on catching fish. Third, rather than focusing solely on optimum marine catches and ensuring fishermen's safety, studies on fishermen's knowledge of astronomical phenomena should also focus on sustainable fish development. Data from 1974 to 2017 based on UN-FAO (2020) show an increase of 34.2% in overfishing. According to Bezerra et al. (2012), fishermen's knowledge of astronomical phenomena can help prevent

overfishing in certain communities. Fourth, fishermen's astronomical knowledge must be preserved among young fishermen. While today's technological sophistication, such as GPS, fish finders, and sonar, is aimed at replacing fishermen's astronomical knowledge, this knowledge is still important to practise because modern technology has limitations. For example, the fishing community in Farol de Sao Thome, Brazil, still uses local knowledge such as wind, tides and lunar cycles in fishing activities, although this information can be obtained from the Internet because this knowledge is particularly important to know the natural events that occur in a specific coastal area that is used daily by fishermen (Alves et al., 2018). Supporting dialogue networks and providing workshops regularly with the help of public authorities, local administrators, researchers, and fishing communities can help to maintain and share fisherman's astronomical knowledge with younger fishermen. This initiative will help ensure the fishing industry's long-term viability and the quality of life of the people working there.

The main intention of this study was to systematically review studies related to fishermen's knowledge of astronomical phenomena on fishery activities. This study has produced several significant contributions to the existing corpus of knowledge relevant to the field of study. This study found an integrated relationship between the fishermen's community's socio-culture and nature, which concerns their knowledge of astronomical phenomena. The main findings indicate that fishermen's knowledge about astronomical phenomena influences their fishery activities on six elements. First, fishermen's knowledge of when the best time to catch the abundance of marine catches; second, fishermen's knowledge of the best location where to catch an abundance of marine catches; third, help fishermen to determine the maturity period of a marine species; fourth, repeating astronomical phenomena help produce a calendar to assist fishermen in carrying out fishery activities; fifth, guide the estimation time and safety issues for fishermen at sea or land; and sixth, guides fishermen on the most appropriate technique to use when carrying out fishery activities.

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SOCIAL SCIENCES & HUMANITIES

Two Theoretical Frameworks of Folklore Studies and Two Selected Tales from the Collection of the Assamese Folktales Entitled *Burhi Aair Sadhu:* A Discursive Analysis

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ABSTRACT

Within the broad spectrum of critical theories in Folklore studies, the critical tenets of Historical materialism and Psychoanalysis are of great significance. With the appropriation of Historical materialism propounded by Engels and Marx and the Freudian psychoanalytical perspectives, there emerged two novel trends in Folklore studies. Marxist folklorists argue that the folk- the creator of the folklore mostly constitutes the working class. Therefore, the body of folk literature is the symbolic representation of the class struggle itself. On the other hand, the adherents of Freudian Psychoanalysis explicate the folktales as the symbolic expression(s) of the id's repressed forbidden wishes and desires. The present paper intends to analyze two selected tales, namely *Tejimola* and *Panesoi*, from the collection of Assamese Folktales entitled *Burhi Aair Sadhu*, in the light of Historical materialism and Freudian psychoanalysis, respectively. The paper examines the theme and characters of two selected tales. Further, a close reading of both tales' symbols and metaphors would inform the conceptual underpinnings of Historical materialism and Freudian psychoanalysis. This study also analyzes the element of fantasy in the selected tales.

Keywords: Class-struggle, ego, folktale, historical materialism, id, psychoanalytical

INTRODUCTION

Folklore studies entail various schools of thought and interpretative techniques. Amongst the several available methodical lenses, the application of Historical Materialism and Psycho-analysis is quite noteworthy in folklore studies. Following the advent of the sociological thought

of Historical Materialism promulgated through the writings of Engels and Marx, the subsequent folklorists made serious scholarly engagement with the critical tenets of Historical Materialism resulting in the inception of a new direction in the discipline of folklore studies. On the other hand, Sigmund Freud's theory of the human psyche and his interpretation of dreams also influenced the study of folklore. It inspired a new approach to apply psychoanalytical theory to the existing research methodology, thereby expanding the realm of the discipline. Moreover, the components of folklore studies can be examined through different approaches. Various narratives and forms constitute the cultural repository of folklore. Such repositories give unalloyed expression to the lived experiences of the folk, their traditional belief systems, customs and rituals, events otherwise considered mundane, individual struggles, and personal and collective psychological through all ages. Folklore and folk culture of any given corner of the world would encompass imprints of the historical evolution of human societies, and its knowledge of the preceding revolutions for social transformations is universally acknowledged.

In this regard, the existing folklores of Assam are no exception. Often a repository, folk literature qualifies as oral narratives of historical propensity amongst the people of a particular community or nation. Thus, to acquire a better understanding of the nature of the historical evolution of societies through various epochs, the praxis of Historical Materialism could be beneficial to a given sociological hypothesis. To adequately comprehend the characteristic presence of class hierarchy and the mechanics of socio-political contentions within the narratives of Assamese folktales and legends, the dialectical tool of Historical Materialism becomes a plausible choice. This research paper shall attempt a discursive study of one of the most popular folktales of Assam *Tejimola* through the lens of Historical materialism. For a given community, the existing folktales or legends could be the historical template of a people's collective psyche or a given community. The state of consciousness and unconsciousness of a particular community finds verbal recourse only through the metaphorical tool of language. The unfulfilled desires and repressions of a community/people find expression in the existing items of legends, myths, and folktales. Thus, the psychoanalytic readings of these folktales reckon the complex psychic operations of both individual and collective minds of a community or a people, thereby providing valuable insights concerning social problems, repressions, and anxieties. Though an ample number of Assamese folktales characteristically invite such a reading, the demarcated scope of this paper focuses on the tale entitled *Panesoi* will be brought within the ambit of the present discussion. Here *Panesoi* will entail a psychoanalytic reading of the tale to locate the motifs of the human psyche within the nodes of the narrative to understand the complex functioning of the id, the ego, and the superego.

Literature Review

A body of research is available concerning different folktales popular in other regional languages of India. There is also available literature on the structural pattern of Assamese folktales, their motifs, and the cinematic adaption of these folktales. Nevertheless, the existing body of works leaves scope for reading two of the popular Assamese folktales from the collection, *Burhi Aair Sadhu*, namely: *Tejimola* and *Panesoi,* through the critical perspectives of historical materialism and psychoanalysis. On the other hand, a few scholarly articles based on applying historical materialist and psychoanalytical perspectives to analyze certain Bengali folktales are to be noted. A brief literature review concerning the present study is mentioned below.

Tagore (2018) observed that folktales reflect the resistance of common people against the forces of social oppression, economic exploitation, and unjust sufferings experienced in Indian society. His essay *Bongo Bhasa aru Sahitya* sheds light on the symbolic representation of people's dissent against injustice in the Bengali folktales.

Mitra (2007), in his book, *Methodology of Folklore,* attempts a reading of select Bengali folktales through the perspectives of historical materialism and psychoanalysis. The work includes reading two beast tales to give insights into the nature of a feudalistic society, its forms of oppression, and subsequent class struggle. The concerned book also includes certain Bengali legends that reflect the socioeconomic evolution of a given society. Some legends also offer insights into the workings of the human psyche.

The tale of *Tejimola* has invited various readings in recent times. Satola and Das (2020), in their study entitled *Tejimola as a Character of Marginalized: A Comparative Study*, situate Tejimola at the margins of society to draw a comparative reading with the tales of Cinderella. This comparative reading analyses the socio-economic factors behind the marginalization of such characters in a given society

In the study entitled *Aesthetics of the grotesque body: The Dismemberment Metaphor in the Assamese Folktale 'Tejimola,'* Jharna Chaudhury (2021) critically engages with the ontology of death and femininity concerning the 'botanical reincarnate of the flesh, the grotesque trope and the metaphor of the dismembered body.'

Talukdar and Gogoi (2021), in their study entitled *Retelling of Assamese Folktales from a Feminist Perspective: A Reading of 'Tejimola' and the tales of 'Kite Mother's Daughter* elaborates on the experiences of women and womanhood, the status of women in a patriarchal feudalistic society. This study also attempts to reconstruct both the tales, Tejimola and Kite Mother's Daughter that traditionally focalize the masculine worldview in a new light-foregrounding the feminist perspective to represent the emergence of strong women subverting the established dominant notions of patriarchy.

The above literature review suggests that various Indian folktales and Assamese

folktales, notably the tale of *Tejimola*, have been subjected to a diverse range of critical scrutiny. Critical analysis of Tejimola is mostly centered around aesthetics, typology, and feminist and postcolonial parlance. Thus, there is scope for evaluating the tale through the critical lens of historical materialism. It is one of the major critical premises in the concerned paper. On the other, no existing literature could be documented concerning the psychoanalytical reading of the folktale Panesoi.

METHODS

This paper is limited to the foundational understanding of the sociological thought of Historical materialism and Freudian psychoanalysis. The paper shall undertake discursive and analytical studies of the tales based on these two theoretical tenets. The primary folktales to be analyzed in this paper shall be concerned exclusively with the only two selected, *Tejimola* and *Panesoi*, from the Assamese Folktales entitled *Burhi Aair Sadhu* collection.

RESULTS AND DISCUSSION

Folklore Studies and the Historical Materialist Approach

The amalgamation of folklore studies with the theory of historical materialism is a unique approach in the scholastic arena of folklore studies. It must be reiterated that the historical materialist approach to examining folklore is not primary to the larger theoretical realm of folklore studies per se. The principles of Historical Materialist could be appropriated to the understanding of different forms and components of folklore. In 1848 with the publication of *The Communist Manifesto*, co-authored by Fredric Engels and Karl Marx, a Hegelian approach appeared to undergo appropriation to understand and interpret reality. According to this philosophical tenet, a schematic blend of Dialectics and Materialism, commonly referred to as Dialectical Materialism—thoughts were not passive and independent reflections of the material world. It has its origin in the products of economical labor. The offshoot of Marx's tenet of Dialectical Materialism is the sociological theory of Historical Materialism. In the subsequent epochs, historians, artists, and literary critics, too, borrowed some of Marx's principles of historical materialism to introduce a fresh approach to the field of history, art, and literature. Even the succeeding folklorists could not ignore the groundbreaking principles of Marxist dialectics – thus utilizing some of the fundamental tenets in studying folklore. In his historical materialist study of human history and society, Marx-Engels opines that:

> History of all social systems seen so far is the history of class struggle. Independent people and slaves, patricians and plebeians, feudal class and working class; in a word, the two classes of oppressed have always been rivals. Fought endlessly, never in secret or in public. Every time this struggle has ended in the revolutionary

reconstruction of society or the destruction of all the conflicting classes. Almost everywhere in pre-historic eras we see complex classes of society, various stages of social hierarchy (Marx & Engels, 1976, p. 102).

One of the founding philosophical premises of the historical materialist conception of the history of human evolution and societal progress argues that it is a constant mechanism of class divisions, class exploitations, and class conflicts between *the have*s and *the have-nots*. With the emergence of social classes, society becomes a breeding ground of social contestation among various stratums of class. The Marxist philosophy agrees that the root of all class division and class conflict lies in the foundations of the material reality and the economic relations to the forces of production. The economic history of human societies reflects that the basis of economic relations has either been feudalistic or capitalistic. The unequal distribution of the forces of production within the ancient class-based societies set off class conflicts. Moreover, the social classes had disproportionate access to land holdings. The powerful landlords had unlimited access to the fertile lands. In contrast, the poor had to bear the hardships of cultivating something in the barren lands for their sustenance without dividends. As a result, the poor had to sell their labor in the cultivable lands of the rich landlords; thus, the opportunist exploitative class of the rich Zamindars and the poor landless, indentured

labor class. This hapless, exploited class of indentured laborers gradually denounced the existing economic mode of production. There came a period when these accumulated resentments had a volcanic outburst in the form of class conflict. These conflicts kept gaining momentum and exhibited greater intensity. In the succeeding ages, these forms of class opposition and resistance have continued between the capitalist and the working class. Such class struggles through different epochs of time is the driving force of class-based societies.

Folk culture is the shared body of cultural products of the 'folk' or 'ordinary people.' The term 'folk' does not only signify the so-called *illiterate*/*rural*/*peasantry*. Here, the signifier 'folk' addresses the term 'folk,' which can refer to any group of people who share at least one common factor. It does not matter what the linking factor is—it could be a common occupation, language, or religion, but what is important is that a group formed for whatever reason will have some tradition that it calls its own. In theory, a group must consist of many individuals. A group member may not know all other members, but he will probably know the common core of tradition belonging to the group, which helps the group to have a sense of group identity (Dundes, 1980).

Before Alan Dundes' studied "Who are The Folk?", the most commonly accepted notion was that the folk consisted of those primitive, peasant societies who lived on the margins of modern civilization. The Marxist folklorists too agreed with Alan Dundes' (1980) interpretation of folk and

observed that the primary constituent of any folk culture – the 'folk' does not necessarily consist of only rural peasant society but all sections of the working class. The working class represents new content and demands new means of expression (Fischer, 1963). As societies change, so does the nature of the folk culture. Therefore, analyzing the workings of any folk culture within the paradigm of the history of class conflicts in society becomes pertinent. The historical Materialist approach was applied to the folk story in the last decade of the 19th century following the Russian Revolution. According to this method, folklore cannot be identified as a medium of joy and light only. The dissatisfaction accumulated in many special categories was published through the Folk literature (Thompson, 1955).

The folklorists from the erstwhile Soviet Union took great interest in studying the existing folktales within the ideological spectrum of classical Marxism. In the aftermath of the Russian revolution, there emerged a new breed of folklorists instituting the Historical school in Folklore studies, extending their critical engagement in the symbolic representation of the working class in the existing oral literature, especially in the folklore and legends. Sokolov (1952) offers a similar reading in his book *Russian Folklore* where he observes:

1. Folklore is an echo of the past, but at the same time, it is also the vigorous voice of the present.
2. Folklore has been and continues to be a reflection and a weapon of class conflict (Dorson, 1963).

While commenting on the historical materialist aspect of folklore, one of Soviet Russia's well-known authors Maxim Gorky (2001), opines that there is an intimate connection of the folklore to the working conditions and the material reality of the people. Moreover, folklore holds a mirror to the struggles of the working class. In his essay, *Disintegration of Personality*, Gorky attempts an ideological reading of three Greek epics appropriating the tenets of Marxism to reflect upon the asymmetrical growth of the culture. According to Gorky (2001), "Oral poetry depended on the powerful generalizing image upon laboring activity. Examples are seen in such heroic laborers as Hercules, Prometheus, Mikula, Selyaninovich, and Svyatogor" (p. 89). This particular essay of Gorky was a pioneering effort concerning the historical materialist approach in Folklore studies in the Soviet Union. The Marxist sociological school of folklorists essentially argued that the items of folklore, such as myths, legends, and folktales, carry the utterances of denouncement and resistance against the existing class exploitation in a language deemed to be metaphoric. The existing class hierarchies were closely tied to the mechanics of the forces of production and labor transactions. Since the exploited class could not openly rebel against the exploitative apparatuses of such a mode of production, fearing death, these working-class people often appropriated such metaphorical, allegorical tales, songs, and myths to communicate their rebellious sentiments. Such allegorical narratives

are often warped in the motifs of class struggles and acts of resistance which could be expressed quite explicitly. In this regard, the tropes of speaking animals have been widely employed within the fabric of the tales. One of the most familiar leitmotifs of these allegorical tales is that an episode often occurs when a relatively bigger and more powerful animal causes sufferings to their docile counterparts. In the end, such a cruel animal is defeated by the coming together of the victimized animals through their ingenious tactics. According to the proponents of historical materialism, such distinctive groups of aggressive and docile animals are nothing but a set of allegorical icons substituting for society's oppressive and oppressed classes. The conflicts in these tales within two opposing groups of animals represent the larger class conflicts at the societal level. Often such a compendium of tales concludes with the dawn of a peaceful co-habitat for all the animals. Even the central philosophical strand of Marxism, of which historical materialism is an offshoot, aspires to establish a classless, egalitarian society that would be ideally free from all forms of exploitation.

Historical Materialism and the Tale of *Tejimola*

A folktale is an imaginative narrative (preferably oral) rooted in the shared values, customs, and lived experiences of a given community transported through the annals of time. Traditional tales were exchanged from one generation to another, largely through the oral medium. These tales have been made available in book format in recent years, yet they originated primarily in the oral tradition. However, it would be naïve to disqualify these folktales as merely fantastical; these tales are like 'living documents' of a given community. In his preface to *Burhi Aair Sadhu*, Lakshminath Bezbaruah (2013) writes, "In other to get acquainted with the uncharted domain of the national history of a people, the understanding of folklore, just as philology and mythology, is equally indispensable" (p. 1). The scientific analysis of folktales originated in Germany. The publication of Herder's *Collection of Popular Songs* in 1778–79 remains one of the earliest commencements of such an endeavor. A systematic study of folktales made progress under the scholarship of the Grimm brothers (Bezbaruah, 2013). The popular folktales—transcending the barriers of geography and nationality, share some fundamental commonalities within the plot. Certain aspects of this civilization include migration, cultural expansion, societies' steady evolution, and the nature of class struggles. These are nearly similar in the pattern of their occurrence across the globe, as a result of which commonalities of schemes in the folktale are also located. According to the historical materialist approach, the foundations of human societies are based on the ideological structures of class division, its relational praxis with the economic mode of production, and the form of human labor. It provides a major impetus for such historical and dialectical materialist readings of the folktale.

Like all the available folktales of the world, the Assamese folktale merits a historical materialist interpretation. The first collection of Assamese folktales is *Burhi Aair Sadhu*. Lakshminath Bezbaruah captures the stream of folktales from the mouth of a few custodians of these tales. The collection was first published in the year 1911. It is noteworthy that the 'preface' to this collection of tales sets exemplary precedence to the systematic analysis of the folk tradition of Assam.

From the collection of the tales, this paper will specifically discuss the tale of *Tejimola* through the lens of a historical materialist approach. The story Tejimola centered on the plight of an eponymous rich merchant's daughter Tejimola in the hands of her cruel stepmother during the long absence of her father, her tragic death and subsequent fantastical metamorphosis across life forms, and ultimate regeneration into her former self. The innocent and docile Tejimola becomes a victim of devious conspiracies framed by her vindictive stepmother. In the supernatural scheme of the narrative, the stepmother pounds her to death. The events or characters of folktales allude to understanding the past through the historical materialist outlook. The structure of *Tejimola* presents shreds of evidence of fantastical elements that drive the plot ahead. The instance of Tajimola's multiple re-birth in varied categories of no human forms is one such primary structural element. Following her burial, she supersedes the grid of human life form and takes re-birth as a bottle-gourd plant.

Knowing about this rather phantasmagorical development, the stepmother uproots the plant. After that, Tejimola takes the form of a citrus fruit plant. Then she becomes a lotus. On his way home, the merchant's father spots the lotus. He wishes to pluck it for his daughter Tejimola. To his utter surprise, the lotus achingly narrates the past events and discloses her to be none other than Tejimola. Startled by such a testimony, the merchant asks the lotus to identify herself as a sparrow. Then, Tejimola transforms into a sparrow and finally returns to her former human self. Once he gets home, the merchant gets acquainted with the stepmother's cruelty and disowns the stepmother. The tragic story of Tejimola should resonate with many such cruel events in society. Tejimola's metamorphoses add an element of fantasy into the story that is characteristic of folktale.

Tejimola's unjust suffering is a microcosmic representation of the larger world, and her episodes of allegorical rebirth provide scope for historical materialist study of the tales. The leading characters in the tale—the Merchant, the Stepmother, and Tejimola can be inferred as personifications of a larger social constitution. Over the years, the character of Tejimola has compelled many succeeding writers across time and genre to re-conceptualize the saga of Tejimola in poems, short stories, and novels. An interpretative reading of the popular Assamese folk narrative of Tejimola through the historical materialist perspective alludes to the age-old experience of the impoverished, exploited people of a

given society. In the story, the stepmother cunningly places live ember and mice inside the folds of the *Chador –Mekhela*. On the pretext of destroying the treasured garment, the stepmother tortures Tejimola and eventually kills her. The whole instance calls for a symbolic inference. The silk represents the traditional textile industry of Assam driven by manual expertise. The placing of live embers inside the silk *Mekhela* symbolically alludes to the inimical impact on the traditional textile industry of Assam following the onset of the capitalist enterprises. This particular folktale roughly gives an impression of 19th-century Assam. In that period, the incoming mechanical mode of cloth production brought a consequential change to the existing mode of production in the region. The local textile laborer suffered as they had to compete against the machine products which began to occupy the 19th-century market in Assam. The stepmother could be argued as a member of the oppressive mercantile class. The cruelty against Tejimola and her subsequent killing could be read as the forms of exploitation and punishment inflicted upon the oppressed class by the oppressors under the guile of various pretexts.

Historical materialism states that the existing movements of class struggles in a given society over the years play a determinant role in social evolution. In the initial stage of social evolution, the dominant system of feudalism favored the feudal lord, Jamindars, to command an institutionalized form of exploitation of the rustic labor force.

Gradually, such an exploitative nature of social hierarchy incited rebellious zeal amongst that perennially victimized class. Thus, the contemporary folktales in a given society provided the scope to articulate their grievances and acrimony in an allegorical form. For example, in the tale of *Tejimola*, the stepmother, under the slightest pretext(s), repeatedly inflicts unbearable punishments upon Tejimola. Her unjust cruelty finally culminates only with the death of Tejimola. Such inhumane episodes registered in the tale mentioned above can be inferred as an allusion to the unaccountable sufferings and pain historically meted out to the subjugated class in a feudal society. In her final desperate attempt, the stepmother surreptitiously allows her 'Mekhela-chadar' to be shredded by some mice, and she further places some live embers between the folds of her 'Mekhela-Chadar.' After inventing such a pretext, the stepmother inflicts several fatal blows to Tejimola with the husking paddle, to which the little girl finally succumbs. The stepmother in the tale may be construed as the archetypal figure of the affluent exploitative class. Likewise, it becomes almost apparent how under the camouflage of various manufactured pretexts in a given society, the working class is often victimized by the privileged class. Once the Merchant-father of Tejimola sets out for his mercantile obligations in some distant lands, the stepmother withdraws any semblance of affection she pretended to have towards her stepdaughter. With several insidious tactics at her disposal, the stepmother acts outright with a sadist

design toward Tejimola. Subscribing to the exploitative nature of master-slave relations, the stepmother within the domestic space exacts backbreaking household labor from Tejimola without considering her age. Here, the stepmother exhibits class opportunism at the expense of the labor class, which is typical of the feudal class. The Merchant-father of Tejimola is a representative of the middle class, which Marx, in his political writings, referred to as the petty bourgeoisie.

The so-called middle class often finds themselves caught in the oscillation between the feudal and the oppressed class. The middle class tends to cushion itself from decisive participation in the class struggle. Therefore, this petty bourgeoisie has hardly any influential role in such an ongoing struggle. Characteristically the middle class tends to situate itself at such a stratum, often deemed to be secured from the intrusion of both the feudal and the exploited class. The middle class is ever present throughout social evolution. Nevertheless, the middle class has often come across as an indifferent, secluded class. As a class, it is quite reluctant to commit itself to the cause of larger social movements. Often, it appears to be contented with the status quo. The Merchant-father initially does not learn about the torturous treatment meted out to Tejimola. Rather, he is seemingly preoccupied mostly with his mercantile obligations.

The utter hardships endured by Tejimola and her subsequent death in the tale in the absence of her merchant father can be inferred as the lack of willful participation on the part of the middle class in most class-induced uprisings. In the later events that gradually unfold after Tejimola is buried, it seems that Tejimola re-emerges, taking a life form of a bottle gourd plant. Her resurrection to life in a metamorphosed state can be identified with the indomitable spirit of the rebellious class fighting against the agents of exploitation in a given society. It must be noted that when the historically institutionalized form of oppression hits the saturation point in a given society, the so-called subjugated people tend to organize themselves and call for revolts to overthrow such oppressive institutions. The stepmother's inhumane act of pounding Tejimola to death is nothing but the extreme victimization of the oppressed. Moreover, the stepmother's destruction of the bottle gourd plant, once she realizes it to be none other than metamorphosed Tejimola, is a typical reaction of the feudal class to arrest any form of organized resistance in a given society.

According to historical materialism, the class struggle would inevitably be persisted unless a more egalitarian society is attained. Tejimola's subsequent attempt to resurrect herself through various inter-species life forms, such as a citrus tree, and lotus flower, is quite suggestive of the persistent nature of any organized class resistance. It may be conceived that the emasculated, oppressed class appropriated the oral tradition of folktales to encapsulate their enduring saga of suffering, despondency, and resistance. The characteristic fantastical elements of these folktales supposedly provided the

victimized class some kind of escape from the harsh reality of oppression, exploitation, and discrimination. The genesis of the fantastical tropes of these tales may be the product of the institutionalized state of dehumanization and the subsequent accumulation of collective resentment and mutinous disposition towards the oppressive agency. The tale of *Tejimola* culminates with her resurrection to human form. According to Sokolov, "What a vastly important artistic force this is in the propagandizing of the resplendent socialist culture" (Catherine, 1950, p. 39). Taking a cue from Sokolov's observation, the latent structure of the Tejimola epitomizes the history of the struggle of man to assert one's identity and encompasses a poetic representation of many shades of social uprisings against the inimical forces of a given society.

Thus, justice is served, and her father disowns the stepmother. Thus, the father's involvement at the final juncture of the tale implies that at some point in history, when the nature of class exploitation hits bottom low, the middle class can no longer seclude itself from the ensuing class struggle. Nevertheless, the class-based movements inherently remain an organized struggle between *the have*s and *the have-nots*. The tale's climax concurs with the central premise of dialectical materialism, which states that class struggle between the oppressor and the oppressed would entail the latter's victory and subsequently engender an egalitarian society. To conclude, even though the tale of *Tejimola* is constituted

around some individuals, each individual can be analyzed as the representative figure of different class stratifications within a given feudal society.

Freudian Psychoanalysis and Folklore Studies

In a remarkable development, the twentieth century saw the emergence of the Psychoanalytical approach in the discipline of Arts, Literature, and Folklore. The publication of Austrian neurologist Sigmund Freud's much-acclaimed book, *The Interpretation of Dreams* (1913), proved to be a watershed moment in the field of psychoanalysis concerning the functioning of the unconscious. In his classic theory of the unconscious mind, Freud states that in dreams, whatever is repressed, the unfulfilled desires tend to find symbolic expression. Thus, his interpretation of dreams became the underlying principle of Freudian psychoanalysis. Following the publication of Freud's book, many contemporary folklorists made erudite attempts to appropriate Freudian principles of psychoanalysis in the study of folklore and folk culture. The folklorist would need knowledge and expertise such as that possessed by the psychologist to interpret the tales (Claus & Korom, 1991).

Freud (1913), in his well-known study of the human psyche, states that the human mind consists of two levels: Conscious and Subconscious. Freud further opines that the conscious mind does not deem certain sets of unfulfilled wishes, feelings, and desires-which, which are often sexually motivated

to be as desirable. According to the Freudian structure of the human psyche, it primarily consists of three components: Id, Ego, and Superego. 'Id' refers to the primary drive. According to Freud, the desire for oral pleasure is also dominant in childhood. A child tends to fulfill his urge for primary pleasure through the mother figure during the oral stage. As a result, the male child's dependence on his mother's figure increases, and the male child tends to desire his mother. As a result, the male child assumes the father figure to be his rival for his mother's affection. Nevertheless, as the male child grows, he becomes aware of forbidden desires and acquires social codes, cultural norms, and moral principles.

Therefore, such guilt-ridden, unfulfilled desires are shut away in the unconscious mind of an adult. The superego engenders the experience of guilt. The intermediate stage between the id and the superego is termed the ego. The unfulfilled desires often deemed forbidden in society are pushed deeper into the 'Id,' which results in ego repression. According to Freud (1913), human dreams function as the latent mechanism that gives symbolic expressions to the unfulfilled, forbidden desires of the id. Moreover, Freud, in his study, interprets dreams to be the symbolic expressions of the repressed sexual drive and unfulfilled desire of a subject. It is further understood due to the latent conflict induced through the mechanics of id, ego, and superego; human expressions take recourse to fantastical and surreal imagination. Later such imaginative constructions take the form of legends and folklore. Therefore, the symbols become a fundamental component of any psychoanalytical study of folklore (Sen, 2013). In his extensive study of the Greek mythological figure Prometheus in his book Dreams and Myths (1913), Abraham (1913) identifies the myth of Prometheus as a symbolic representation of "the masculine power of procreation of all life" (p. 74). Abraham further states that all myths are but dreams replete with sexual symbolism.

On the other hand, Freud (1913) leaned heavily on myths and fairytales, taboos and jest, and superstitions to support his exposition of the subconscious mind. Taking a cue from Freud, Abraham thus pronounces, "The dream is myth of the individual" (p. 72). Following the intellectual precedence of Freud, many of his later disciples, too, approved of the role of the unconscious, i.e., the id, as indispensable in making various constituents of folk culture, such as folklore, customs, and rituals. The psychoanalytical study of folklore draws a parallel between the workings of the individual and the collective id. Like individual dreams that are symbolic expressions of repressed desire and unfulfilled wishes, the collective unconscious, i.e., the id of a community attempts to escape the conditioning of the superego; thus, creating a world of symbols to articulate its collective unfulfilled wishes and forbidden desires. It must be noted here that Erich Fromm – a German social psychologist and sociologist, had enumerated certain ubiquitous sexual symbols based on his study of folklore. In his inventory, Fromm (1951) identifies

certain objects: sticks, pencils, and trees as symbolic of the male genital, while caverns, flowers, and gardens symbolize allusions to the female genital.

Psychoanalytical Theory and the Folktale of *Panesoi*

Similar to the role of individual dreams in penetrating deeper into the unconscious, i.e., the id for the understanding of the complex functioning of the individual human psyche, the psychoanalytical approach of folktales enhances more holistic insights to gouge extremely intricate layers of the collective unconscious and the psychological operations of a given society or a community for example, the Gate of Dream' published in 1952, went on to explain the myth and folktale of primitive tribes of Australia, where folktale and the subconscious mind have a connection with imagination (Sen, 2013). Likewise, some tales from *Burhi Aair Sadhu* invite such psychoanalytical understanding.

The tale underpins the latent tension between the id and the superego. According to the Freudian study, the superego, i.e., the conscious territory of the human mind, is embedded with social mores, cultural codes, and moral values. Thus, the conscience mind attempts to prevent any forbidden desires or unfulfilled wishes of the unconscious. In this regard, the tale of *Panesoi* included in the above collection can be read as an allegorical/symbolical representation of man's primal sexual drive and the unfulfilled wishes sheltered in the id. At the beginning of the tale, the only son of a single mother

brings her a goose egg for safekeeping. The tale gradually turns supernatural when a baby girl emerges, splitting the eggshell one day. The mother calls her Panesoi and brings her up just as her daughter. Growing up, the boy gets infatuated with Panesoi and betrays a strong urge to marry her. When Panesoi learns about the impulsive desire of her brother, she leaves her home and metamorphoses herself into a goose. In the end, the brother identified the goose as Panesoi and enticed her to marry him.

The tale of *Panesoi* alludes to the concept of the Oedipus complex. The girl Panesoi, born out of a goose egg, can be inferred as the extended self of the 'ideal' mother figure of the tale. Even before she emerges from the eggshell, the brother's strong infatuation towards Panesoi and his incestuous wish to marry her in later years correspond to the notion of a child's forbidden desire towards his mother figure and subsequent traces of such forbidden attraction in the adult unconscious. It is quite evident in the tale mentioned above as well. Society unequivocally proscribes any sexual inclination towards the mother figure. It is deemed to be incestuous. However, the phantasmagorical realm of the folktale can transcend any semblance of human-induced moral convictions. Therefore, in the tale, the episode of a brother marrying a girl born out of a goose egg is however fantastical in appeal, it rather circuitously alludes to the fulfillment of the desire of the id—what is deemed as 'forbidden' and 'incestuous' by the collective superego. In the tale, during his childhood, it is the mother figure with

whom the boy has invested his trust for the safekeeping of the egg. Later too, it is the mother who surreptitiously locates the baby girl coming out of the eggshell—such events from the tale concerned tacitly correspond to the Freudian notion of the Oedipus complex.

Other objectives in the tale of *Panesoi* can be examined through the tenets of psychoanalysis. During the primitive period, the primitive forefathers lived closer to the wilderness. The modern-day notion of society was still a fry cry. The primitives were blissfully ignorant about virtue and vice, legal and illegal, and moral and ethical codes of conduct. Friedrich Engels opines that as men began to expand their ambition and looked for the inheritance of private property; so, it became imperative for society to impose certain sets of moral values to limit- what the social conventions deemed promiscuous. In India, although the sexual relationship between siblings was prohibited even during the Vedic Age, one of the texts of *Dasaratha Jataka* refers to the lord Ram and Sita as brother and sister as men began to envision a more regulated civilized order of settlement; any sexual participation required due social approval. Otherwise, an act of sexual defiance ensures social sanctions.

Nevertheless, the traces of primitive drive remained in the unconscious. In a civilized society, the forbidden desire of the id is shut away in the collective unconscious. The tale of *Panesoi* is also apparently about incestuous love and marriage between two siblings. The dynamics of familial relations are very complex. Often the superego prohibits any forbidden wishes and desires to trespass the sanctity of the kinship. In a particular Bengali folktale, while plucking flowers, accidentally, one of the fingers of the female character, who happens to be the sister of the male character, gets pricked. The story reads that the brother sucks the spilling blood from her finger and manages to stop it altogether. Nevertheless, the brother could not get over his sister's blood taste. One day he kills and devours her. Thus, the act of consuming the meat of his sister implies sexual innuendo rather symbolically.

There are several kinship tales with similar motifs. The tale of *Panesoi* alludes to the brother's strong urge to indulge in a forbidden incestuous relationship with his sister. Even though society is dead against any such sexual inclination, in the tale, the brother affects a conjugal relationship with his sister. It must be noted that the girl in the tale attempts to secure herself inside a goose eggshell which signifies procreation. It also alludes to the id's latent drive for forbidden pleasure. The brother, impulsively obsessed with sexual gratification with his sister, trespasses the societal codes dictated by the superego concerning sexual conduct. Therefore, the girl is projected as someone who is not born out of the same womb as the mother figure; rather, she is metamorphosed from a goose egg in a fantastical turn. The primitive drives of the id do not inherently subscribe to any moral principles. The prevalent societal norms and cultural codes are the product of the collective superego. Thus, the fantastical realm seemingly

accedes to the forbidden urge of the id. It may be argued that the tale of *Panesoi* opens up certain avenues to delve deeper into the complex role of the id, its forbidden wishes, and latent repression to persist the mundane conformity with the structures of kinship and social order.

CONCLUSION

Both Historical materialism and Freudian psychoanalysis have been quite relevant when it comes to academic research in the discipline of Folklore studies. Folklore, especially folktales, is a collective repository of oral history concerning a given community's social and psychological expressions. Often, folktales provide a paradigm to understand the social evolution of a given society, including the complex development and functioning of the human psyche. It must be noted that in most of these folktales, the readers (the listeners) get familiar with a world replete with fantastical events. In such fantastical realms, the rhythm of rustic life and the inner workings of the conscious and the unconscious finds symbolic representation. Such folktales did not originate merely as a mode of amusement.

Whereas, through such folktales, the accounts of class struggle, the collective defiance against such agents of class exploitations, the repressed indignation of the oppressed, the hardships of the downtrodden class began to find symbolic articulation over time. The oppressed classes finding themselves equipped insufficiently to wage any revolt against the oppressors, took recourse to a such fantastical realm(s) to give vent to their repressed drives by committing symbolic vengeance against them in such folktales. In the tale of *Tejimola* in its fantastical world, one may find symbolic gestures toward the structure of a given society and the persistent class struggle between the opposing forces in a given mode of production. On the other hand, the tale of *Panesoi* offers a great deal of insights into the complex human psyche. According to Freud, dreams, myths, or folktales are symbolic expressions of the actions and reactions of the id. In reality, the superego imposes various moral and ethical restrictions upon the wishes and desires deemed 'forbidden.' Therefore, as a substitute, the forbidden finds fulfillment in myth and fantasy.

The concerned analysis of both these tales offers a cogent view about the folktale(s) being a medium of symbolic representation of myriad human experience(s). In the repository of Assamese folktales, one may find many such folktales that merit such analysis based on the theoretical principles of Historical materialism and Freudian psychoanalysis.

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The Development of Mobile AR-Based Module for Teaching and Learning Pneumatic System: A Needs Analysis

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ABSTRACT

Practical skills and theoretical knowledge are vital competencies that technical and vocational trainees need to master before joining the industrial workforce to perform tasks efficiently. Therefore, comprehensive instructional materials and training equipment are essential to ensure that the skills and knowledge are delivered effectively to trainees. This study aimed to identify the need to develop a mobile augmented reality module to teach and learn pneumatic systems in Malaysian vocational colleges. Descriptive research was conducted to determine the module's need, involving 13 subject-matter experts from various vocational colleges. A set of questionnaires consisting of three main themes: the need for the module, the module's user interface design, and the module's usability criteria with 49 items was used. The data collected were analysed using the Fuzzy Delphi Method. All three constructs showed high levels of expert consensus of more than 75% and a threshold value of ≤ 0.2. Therefore, experts agreed that there was a need to develop a mobile AR-based module for teaching and to learn pneumatic systems with the stated user interface designs and usability criteria.

Keywords: Augmented Reality, Fuzzy Delphi Method, module development, needs analysis, teaching and learning pneumatic systems

INTRODUCTION

With the advent of the Fourth Industrial Revolution, the technology in the industries has evolved correspondingly. In line with the evolution, changes should also be implemented to ensure that the knowledge and skills acquired by technical and vocational education students are compatible

with current industrial trends. For example, manually controlled machinery was replaced by more advanced machinery controlled by high-end and complicated technologies such as programmable logic controllers, electro-hydraulic systems, and electro-pneumatic systems. Thus, proper instructional material and delivery methods are essential to training skilful technical workers who are competent in carrying out their tasks in an industrial automation-based workplace upon graduation.

In Malaysia, the Ministry of Education emphasises the acquisition of practical skills and theoretical knowledge among vocational students, as these are essential components in developing a skilled workforce. Consequently, Malaysian vocational colleges allocate 70% of the students' learning time to vocational subject matters on practical skills acquisition while the remaining 30% to theoretical knowledge learning. For instance, the pneumatic system course requires students to understand their intangible concepts and be competent in applying what they have learned to their practice (Kurniawan et al., 2017).

Pneumatic systems are power transmission systems that use compressed air as the working medium (Rabie, 2009). Because of their lightweight and cost-effective properties, pneumatic systems have been widely used in various industries (Aravind et al., 2017). However, the pneumatic system is a complex and abstract subject requiring students' higher cognitive capacity, particularly their metacognitive skills, to master its learning content. Furthermore, due to its multifunctional

components and intricate working principles, the pneumatic system has been regarded as one of the most challenging mechanical-based subjects (Kurniawan et al., 2017).

Kurniawan et al. (2017) pointed out that the current method of teaching pneumatic systems, which relies on books, PowerPoint slides, and videos, is one of the factors leading to less effective learning. Given this situation, students tend to lose interest while struggling to understand perplexing learning concepts (Khramova et al., 2019). Using conventional theory teaching, displaying the complicated circuit's working state and the pneumatic components' hidden internal structure is pretty tricky. Students only managed to see the system's external parts during practical activities, which can hardly help them understand the actual working condition (Kurniawan et al., 2017; Xu et al., 2017). The instruction content must be delivered effectively to ensure the students understand the components' basic principles and complex circuit operations (Jabar et al., 2020). Towards this end, Kurniawan et al. (2017) recommended well-designed instructional resources to improve student's learning outcomes in the pneumatic system.

Furthermore, as a vocational subject, pneumatic systems instruction involves plenty of practical skills training and assessments achievable only with adequate, functional, proper, and up-to-date training equipment (Arief et al., 2018; Audu et al., 2013). Similarly, Andoko and Wirawan (2017) believe that adequate facilities are an essential requirement that colleges must fulfil to enhance graduate quality. Without proper equipment, much of the

content is delivered theoretically, and as researchers argue, practical skills content is far too complicated and challenging to be taught verbally (Md Nasir et al., 2020). Consequently, students may feel unmotivated to learn, leading to declining quality and competent graduates (Anindo et al., 2016; Ohwojero & Ede, 2013).

One way to promote a greater student understanding of pneumatic systems and complement the training equipment is by using multimedia. Multimedia learning is a popular teaching aid in delivering learning content that is interactive and animated to trigger students' interest, capture their attention, and boost their motivation (Ab Aziz et al., 2012; Asfani et al., 2016; Endres et al., 2020). Furthermore, multimedia resources support learners through their learning difficulties by helping them better comprehend through visualisation. Nonetheless, the suitability of teaching media depends on its characteristics; some of the more popular multimedia for educational purposes include web-based learning, Virtual Reality (VR), and Augmented Reality (AR).

Over the past few years, many studies have been conducted to investigate the effectiveness of AR technology applications in the educational field, especially in helping students with learning difficulties. The following studies are examples of AR applications as teaching aids for various purposes. First, there were studies conducted to see the suitability and sustainability of AR applications as an instructional tool to improve student's learning outcomes (e.g., Y. C. Chen, 2019; Hung et al., 2017;

Shieu et al., 2019) and it is potential to assist laboratory activities or practical skills (e.g., Bazarov et al., 2017; Herlandy et al., 2019). In addition, there were also studies to see if AR applications are effective in reducing the cognitive load (e.g., Buchner & Zumbach, 2018; Sambodo et al., 2018), increasing students' positive feelings and other affective domains in learning the subject matters (e.g., Baloch et al., 2018; Hanafi et al., 2017; Sambodo et al., 2018). All these studies displayed positive effects of AR technology on students' performance.

About the teaching and learning of pneumatic systems issues in Malaysian vocational colleges and the positive impacts of AR applications on students' learning, this study was conducted to establish the demand and urgency for formulating a mobile AR-based module for teaching and learning pneumatic systems. To be specific, the objectives of this study are:

1. To identify the need to develop a mobile Augmented Reality module for teaching and learning pneumatic systems in Malaysian vocational colleges.
2. To identify the user interface designs to be included in the mobile Augmented Reality module for teaching and learning the pneumatic systems in Malaysian vocational colleges.
3. To identify the usability criteria to be included in the mobile Augmented Reality module for teaching and learning the pneumatic systems in Malaysian vocational colleges.

Based on the research mentioned above objectives, we report the results of the needs analysis study based on the following research questions:

1. Is it necessary to develop a mobile Augmented Reality module for teaching and learning pneumatic systems in Malaysian vocational colleges?

2. What user interface design elements should be included in the mobile Augmented Reality module for teaching and learning pneumatic systems in Malaysian vocational colleges?

3. What are the usability criteria for the mobile Augmented Reality module for teaching and learning pneumatic systems in Malaysian vocational colleges?

LITERATURE REVIEW

An Introduction to Augmented Reality Technology

AR technology allows real-time interaction between real-world surroundings and virtual objects that coexist in the same space (Azuma, 1997; Klopfer & Sheldon, 2010; Peddie, 2017). The application of AR was first introduced in the military, science, and manufacturing fields before being extended to other areas over time, including education. Today, AR technology is available closer-to-home, to most smartphone users, offering fun interaction and convenience across various AR-based applications. In addition, AR's applicability spread to other industries over time, particularly in education.

Various technologies can be used as instructional tools and have significant potential to contribute to today's ever-changing learning environment. In particular, the multi-faceted benefits of AR have outshined several existing technologies. The primary purpose of Augmented Reality is to improve and enhance one's perspective of their environment by combining sensing, computer, and display technologies (Olwal, 2009). Having the capacity to develop a successful and usable AR application will undoubtedly provide users with numerous benefits. The possibilities of AR technology application in education will be discussed further in the following subtopic.

The Benefits of Using Augmented Reality Technology in Education

In the education realm, AR enables virtual object overlay on the real environment for more effective learning and teaching than most traditional methods (Ali et al., 2013; Bazarov et al., 2017). Moreover, students learning through the AR application can select skills or concepts they are yet to master and replay them until learning is complete (Wong et al., 2020). Besides, they also get to visualise intangible concepts for ease of learning (Akçayir & Akçayır, 2017; Wu et al., 2013) while being prompted to use metacognitive strategies such as planning, monitoring, and evaluating for active learning.

AR applications have been shown to help students better understand the content, particularly abstract concepts or hidden objects, by superimposing 360-degree

graphics in the natural environment (Arief et al., 2018; Martín-Gutiérrez et al., 2015; Yip et al., 2019). Students generally find it difficult to perceive abstract concepts, leading to misunderstandings that obstruct learning (Saidin et al., 2015). Furthermore, the virtual medium can replace expensive resources, such as equipment and supplies, to minimise practical work costs.

Because of its capacity to simplify learning content, AR technology has also been easier to understand and use (Y. C. Chen, 2019; C. H. Chen et al., 2017). In other words, it is well-accepted and satisfied by learners due to its ease of usage. In addition, learners gain better confidence if they can digest and comprehend the learning materials with less effort (Chin et al., 2019).

Furthermore, a study shows that AR-based teaching materials can help to improve the learning achievements of high achievers, but they also help to close the gap in students' overall learning abilities (Zhang et al., 2015). In their study, students' learning achievements improved in both high and low-performance groups, with low-performance students' results roughly similar to those in high-performance groups. Y. C. Chen (2019) reported similar findings: low-anxiety and high-anxiety learners performed equally well when introduced to an AR learning environment.

The Multimedia Learning Design and Usability

The ability of instructional media to grab the learners' attention and deliver the learning content precisely is critical to its efficacy. According to Mayer (2009), integrating multimedia into instructions entails presenting the resources to learners and guiding their cognitive processing of the materials. Towards that end, adequate planning is critical in designing and developing effective instructional media to promote efficient cognitive processing among students. Therefore, several factors must be considered when selecting the optimal visual and auditory design attributes.

Heinich et al. (2002) proposed basic visual and verbal design concepts. They suggested four basic visual design concepts that are acceptable and realistic to follow, including ensuring legibility, minimising the effort required to decipher messages, encouraging active audience involvement with the message, and focusing attention on its key points. Students utilising such instructional materials should be able to see both texts and visuals on display in this regard.

The effort required by the students to interpret and comprehend the messages being delivered to them should likewise be minimal. These may include how the underlying pattern is established in terms of alignment, shape, and balance, consistency of the treatment pattern, and the use of appropriate colour combinations. The selection of an appealing colour scheme is critical for increasing students' active participation (Heinich et al., 2002).

Verbal or text design is just as important as that visual design. In developing an instructional display, the lettering must be

carefully chosen to properly transmit the message (Heinich et al., 2002). The size, spacing, and style of the wordings are also factors to consider. Aside from that, items and materials displayed in the media should be shown in three dimensions to convey the viewers' understanding of the subjects. The 3D digital model stores the geometry, texture, animation, and scene required in engineering and teaching subjects (Solmaz et al., 2021). These 3D interfaces can help people learn more effectively by allowing them to quickly and intuitively access larger volumes of information.

Heinich et al. (2002) also mentioned the importance of audio in instructional multimedia design, noting that it is increasingly used in today's self-paced learning. In designing audio, a designer should use a natural and conversational voice, as humans respond positively to a similar voice. In addition, various vocals should be used to maintain the learners' interest in what is being said.

A media's usability is influenced by its user interface design. Usability is defined as the usefulness and satisfaction of a system to help people achieve their goals by performing task sequences (Zhang & Walji, 2011). Ko et al. (2013) developed usability principles for smartphone AR applications based on the following aspects: user information, user cognition, user support, user interaction, and user usage. Among the most significant elements included in the five usability aspects are availability, learnability, responsiveness, and low physical effort.

Similarly, Sambodo et al. (2019) assessed an Android-based augmented reality application covering four aspects using a comprehensive questionnaire. They are (1) Device quality, which includes functionality, interactivity, ease of use, and interface design; (2) Service quality, which includes accessibility, personalisation, and responsiveness; (3) Knowledge quality, which includes content use and adequacy; and (4) aspects evaluated in the augmented reality system.

Ismail et al. (2019) conducted another study to assess the usability of the generated teaching kit. A group of experts, including subject matter experts, and the teaching representation kit, were involved in this study. They find that the positive usability score derived from expert validation includes a teaching kit that is easy to handle, beneficial subject content, and useful AR application content. Therefore, AR's correct user interface design and usability should be thoroughly defined to create and develop useful AR-based educational media to boost students' learning.

METHODS

The needs analysis was conducted quantitatively involving 13 subject-matter experts in the pneumatic systems discipline, who were carefully identified and selected to provide expert ideas and opinions in improving the content of the mobile AR-based module. The sample selection was based on characteristics such as being experienced in teaching and learning pneumatic systems and being

directly involved in Electronic Technology Programme curriculum development in Malaysian vocational colleges. All the samples selected are subject matter experts with more than ten years of involvement in the related field. Ideally, ten to 15 experts are required for the Delphi Method (Adler & Ziglio, 1996). However, researchers believe that only a few experts are sufficient for such an analysis (Noh et al., 2019). Ridhuan and Nurulrabihah (2020) argued that having too many experts may obstruct the selection of accurate data and cause the researcher to struggle to moderate the group effectively. Therefore, a panel of 13 experts was deemed adequate and appropriate for conducting the needs analysis following the Delphi Method. An online meeting via the Google Meeting platform with the 13 experts was conducted. The researcher explained the needs analysis study and the questionnaire to the experts during the meeting in detail. The questionnaires were sent to the experts by e-mail. They were given ample time to answer the questionnaires before returning them to the researcher at the end of the meeting.

Instrument

The seven-point Likert-type scale questionnaires were distributed to the experts to measure their levels of agreement. The experts stated their levels of agreement on every item based on the seven following anchors: "Extremely Disagree," "Strongly Disagree," "Disagree," "Somewhat Agree," "Agree," "Strongly Agree," and "Extremely Agree." They were built based on the themes identified; the 49-item questionnaire incorporated three general themes: the needs for mobile AR modules, mobile AR module user interface design, and mobile AR module usability criteria. Table 1 shows the themes and the item distribution of the questionnaire.

Two sets of validation forms, content and language validation forms, were produced for instrument validation. Two content and

Table 1

Themes and items distribution of needs analysis questionnaire

Theme	Number of Items	Item
The Need for Mobile AR Module	7	The importance of practical skills in vocational courses; the importance of adequate training equipment for optimum practical skills mastery; the pneumatic system teaching and learning problem; the smartphone usage in teaching and learning; and the mobile AR module usage to aid teaching and learning
Mobile AR Module User Interface Design	19	Visual design, text design, object and material display, and audio design
Mobile AR Module Usability Criteria	23	Ease to use, accessibility, responsiveness, use of the content, user's cognitive and low physical effort
Total	**49**	

language experts validated the instrument. At the end of each structured question, an open-ended section is provided for the experts to write additional suggestions. In addition, a pilot test was done involving ten lecturers who were not part of the study's sample. From the data collected from the pilot test, Cronbach's Alpha coefficient was calculated to determine the reliability of the questionnaire.

Data Analysis Using the Fuzzy Delphi Method

Data obtained from the questionnaires were analysed using the Fuzzy Delphi Method (FDM) to obtain expert consensus. Each expert played the role of a respondent, having recorded their levels of agreement based on the seven-point Likert scale and expressed their opinions at the end of the questionnaire.

The FDM presented two main functions: triangular fuzzy numbers and defuzzification. A fuzzy number is a generalisation of a regular, real number. It refers to a connected collection of alternative values rather than a single one, with each possible value weighing between 0 and 1. The values m1, m2, and m3 represented fuzzy triangular numbers, written as (m1, m2, m3), and used to produce fuzzy scales like the Likert scale, where numbers were exhibited as odd numbers. The higher the numbers were in the fuzzy scale, the greater the accuracy of the data obtained. The data collected from this study were transferred to a table to find the fuzzy values, represented by n1, n2,

n3, and the mean value (m1, m2, m3). The threshold values (d) were identified not to exceed 0.2 (≤ 0.2) to reach expert consensus for every item, while the expert agreement percentage was greater than 75% ($\geq 75\%$). The following formula was applied to calculate the threshold value (d).

$$d\ (\tilde{m},\tilde{n}) = \sqrt{1/3\ [(m_1\text{-}n_1)^2 + (m_2\text{-}n_2)^2 + (m_3\text{-}n_3)^2]}$$

Concerning the formula above, if the threshold value obtained was smaller or equal to 0.2, it meant that the experts had reached a mutual agreement, but if the d value was greater than 0.2, another round of data collection was needed to ensure the validity of an item. Apart from the threshold value, FDM also enabled the process to determine expert consensus based on percentage, which must be 75% or more for each item or the entire construct (Table 2).

Table 2
The level of expert consensus

Score range between quartiles	Consensus definition
0.00 – 1.00	High consensus
1.01 – 1.99	Moderate consensus
≥ 2.00	No consensus

Source: Ridhuan and Nurulrabihah (2020)

RESULTS

The findings of this study were divided into three themes: the need for a mobile AR module, user interface design, and the usability of the AR module (Table 3).

Table 3
The Threshold Value (d) and the Expert Consensus Percentage (%) of the needs analysis for a mobile AR Module

No.	Theme	Threshold Value, d	Expert Consensus Percentage	Consensus Level	Fuzzy Score
1.	The Need for Mobile AR Module	0.166	89.3%	High	0.671
2.	Mobile AR Module User Interface Design	0.097	92%	High	0.707
3.	Mobile AR Module Usability Criteria	0.077	97.5%	High	0.743

The Need for a Mobile Augmented Reality Module

The theme, measuring the need for a mobile AR module, was made up of seven items: the importance of practical skills in vocational courses like the pneumatic system; the importance of adequate training equipment for optimum practical skills mastery; the pneumatic system teaching and learning problems; the smartphone usage in teaching and learning; and the mobile AR module usage to aid in teaching and to learn the pneumatic system. The threshold value (d) for these items was $0.166 \leq 0.2$, while expert consensus was high at 89.3% (Table 2). Furthermore, all the items' fuzzy scores were greater than α-cut =0.5; thus, all items were accepted. From the values obtained, all experts agreed that practical skills and theoretical knowledge are important components in vocational courses like pneumatic systems. Therefore, it was essential to have sufficient training equipment for students to master the related practical skills. Moreover, they agreed that the difficulties in comprehending complex learning content and insufficient training equipment in vocational colleges impeded teaching practical skills and learning. As a result, they consented that mobile AR is suitable to use as a complementary teaching tool, especially for learning intangible concepts in vocational colleges with inadequate pneumatic training equipment to support the teaching and learning process.

The Mobile Augmented Reality Module User Interface Design

The mobile AR user interface design theme consisted of 19 items from the following elements: visual design, text design, audio design, and object display. A threshold value (d) of $0.097 \leq 0.2$ for the items represents a high level of expert consensus (Table 2). The expert consensus percentage was 92%, indicating that experts agreed with all the identified mobile AR user interface design characteristics. In addition, all 19 items' fuzzy scores were greater than the α-cut value= of 0.5. The group of experts recognised that uninterrupted audio, attractive illustrations, 3D object usage, neat space and shape, and text font size were among the top characteristics of mobile AR user interface design.

The Mobile Augmented Reality Module Usability Criteria

The mobile AR module usability theme consisted of 23 items that covered the following elements: ease of use, accessibility,

responsiveness, learning content, and users' cognitive and physical efforts. The expert consensus percentage was 97.5%, displaying high strength levels, while the threshold value (d) was $0.077 \leq 0.2$. The highest expert consensus was for the responsiveness of the mobile AR module, denoted by such elements as fast response, high operating speed, easy to stop, revert, and no delays. Other high levels of expert consensus were also demonstrated for items under the learning content element, such as clear labels and easy language. The experts also strongly agreed upon the user's cognitive-related items, like the consistency of terms used and the clarity of instructions.

DISCUSSION

This study ascertains that all experts agree that practical skills and theoretical knowledge are essential components in teaching and learning the vocational course pneumatic systems. The essential practical skills of pneumatic systems to be acquired by the learners are designing pneumatic circuits, selecting appropriate pneumatic components, installing the pneumatic circuits, performing functionality tests, and troubleshooting the pneumatic systems accordingly.

In vocational colleges, practical skills training is a prominent feature of the student learning experience. To produce a skilled workforce, learning for technology-based students encompasses 70% practical skills acquisition and the remainder 30% theoretical knowledge (Technical and Vocational Education Division, 2019, 2022). Practical skills acquisition is a prerequisite in work-based programmes (Audu et al., 2014; Li et al., 2017; Okwelle & Ojotule, 2018), with each skill set mastered distinct to a respective area of expertise that contributes to optimum productivity at the workplace (Ifeanyichukwu et al., 2018). Hands-on skills allow graduates to operate a range of equipment and tools, whether operating, servicing, or maintaining, leading experts to collectively agree on the importance of the availability of a comprehensive range of training equipment in vocational colleges.

The lack of sufficient pneumatic system training equipment has led experts to use smartphones as an alternative for teaching and learning purposes, such as downloading simulations and videos. Experts agree that integrating multimedia instruction, such as a mobile AR module, into teaching is highly beneficial for vocational students. Herlandy et al. (2019) point out that AR has the potential as a virtual laboratory to substitute practical activities that students cannot complete due to laboratory equipment restrictions or challenging demonstrations. Furthermore, it allows students to access learning outside classroom hours and a flexible practicum. In addition, using AR technology in teaching and learning is cost-effective (Arief et al., 2018; Diegmann et al., 2015; Ferrer-Torregrosa et al., 2015). Purchasing physical training equipment and materials is usually prohibitively expensive. A virtual laboratory may also accommodate more students at once.

As for the characteristics of the mobile AR user interface design and its usability, experts agree on the designs listed with high consensus levels and grant that the mobile AR module, when used, must be responsive; this is in line with suggestions from several scholars like Dünser et al. (2007), Ko et al., (2013) and Sambodo et al., (2019). Students should not experience long pauses between commands and responses (Aadzaar & Widjajanti, 2019; Dünser et al., 2007). Expert consensus is also high for items like clear labels and easy language. According to Nielsen (1993), the language used in an application should be familiar to users and not system-oriented phrases. Dünser et al. (2007) identify several design principles regarding usability criteria, one of which is reducing the user's cognitive load. Cognitive load stems from users' interaction with an overload of instructional activities that may interfere with completing the task. Ko et al. (2013) proposed consistency throughout the module to reduce cognitive load, with experts strongly agreeing with the consistency of terms used in modules.

Visual and audio design aspects are ranked highest among the user interface design elements. Experts agree that uninterrupted audio, attractive illustration, 3D object usage, neat space and shape, and text font size are important characteristics of the mobile AR module interface to promote ease of learning. Interpreting and understanding messages and information from modules will require minimal effort, especially with the underlying pattern established in the multimedia. The significant factors that affect the underlying pattern are the alignment of elements, shape, balance, style, and suitable colour combinations (Heinich et al., 2002). For example, to establish this underlying pattern using alignment, the key elements of a display are placed in such a way that they have a clear visual relationship to one another; viewers spend less time trying to make sense of what they see and can focus on understanding the message.

Apart from visual design, verbal or text design is equally important. In designing instructional material, it is advisable that the lettering is selected with much care so that it will be able to convey a message efficiently (Heinich et al., 2002). Several characteristics should be considered, such as style, size, and spacing, with three-dimensional objects and interactive displays conveying an idea more effectively (Heinich et al., 2002). The lettering style should be consistent and blend well with the rest of the image. For explicit informational and instructional purposes, a plain font style is ideal. The size of the letters determines legibility. The lowercase letter should be used to ensure the best legibility, and capital letters should be added only where customarily required. According to the standard rule of thumb, lowercase letters should be 1/2 inch high for every 10 feet of distance viewers (Heinich et al., 2002). Apart from the size of the letters, the spacing between the lines of the written material is also significant. As a result, the vertical space between the lines should be slightly less than the average height of the lowercase letter.

CONCLUSION

The analysis of the data collected from the study affirmed that experts collectively agreed that both theoretical knowledge and practical skills mastery are fundamental in vocational education to produce a competent workforce. However, insufficient training equipment and related tools often impede practical skills teaching and learning for vocational courses in the vocational college workshop. Thus, designing and developing a mobile AR module is vital to support and aid vocational college students in mastering practical skills, especially when vocational training equipment and tools are not readily available.

The characteristics of mobile AR make it suitable for practical skills instruction through three-dimensional virtual object overlay onto a real environment. Several essential elements of the user interface design and the usability of the mobile AR module showed high levels of expert consensus. Therefore, user interface design, such as visual design, text design, object and material display, and audio design, should be considered in designing and developing mobile AR-based modules. At the same time, the usability criteria such as ease to use, accessibility, responsiveness, use of the content, and user's cognitive and low physical effort should be applied to direct the design and development of a mobile AR-based module.

For future research, it is recommended to explore further the main components and elements that should be included in the design and development of mobile AR modules for effective teaching and learning practical skills, especially for pneumatic systems. In short, there is an urgency to produce a mobile AR module for teaching and learning pneumatic systems in Malaysian vocational colleges as an alternative to actual training equipment.

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Migration and Farmer Household Livelihood Strategies: Factors Influencing the Decision to Migrate

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ABSTRACT

West Java is one of the provinces in Indonesia with a high percentage of poor farmer's households. Furthermore, migration is often associated with economic conditions and is carried out by farmer's households as a livelihood strategy to cope with poverty and vulnerability. This research aims to describe the migration carried out by farmer's households and to analyze the factors influencing the decision of members to migrate. This study relies on longitudinal data from the Indonesian Family Life Survey in 2007 and 2014 to evaluate the migration phenomenon that occurred from 2007 to 2014. The respondents are members of farmer's households in West Java Province, a total of 615 individuals, including 89 migrants and 526 non-migrants. Descriptive analysis and logistic regression were used to answer the research objectives. The results showed that respondents' age, perceived current living conditions, and ability to meet children's needs significantly and negatively affect the decision to migrate; meanwhile, crop failure significantly and positively affects the decision to migrate. In the face of limited financial resources and vulnerabilities, farmer households allocate productive human resources to migrate and earn a living outside their village. Further research can be directed to provide a broader picture of migration carried out by farmer households by analyzing macro conditions that affect their livelihood. The government can play a role in formulating an economic and social reintegration strategy. Hence, the remittances obtained by migrants can ensure sustainable livelihoods and contribute to agricultural development.

Keywords: Farmer, household, livelihood, migration

INTRODUCTION

Migration is the movement of people across an area's administrative and geographical boundaries, intending to settle either permanently or temporarily (International Organization for Migration, 2020). Population mobility reflects a response in the face of various limitations to fulfill the needs; this can be seen in various forms of migration, both voluntary and non-voluntary (Bakewell, 2021; Tirtosudarmo, 2009).

Indonesia is a country that has a long tradition of migration. According to the Central Statistics Agency, from 1970 to date, approximately 11% of the country's population lived outside the area where they were born (Muliansyah & Chotib, 2019). Many early theories of migration explained that macro conditions, such as the balance of the labor market, and differences in wage levels in the area of origin and destination, are the main driving force for migration levels, as described by Lewis in 1954 and Rennis and Fei in 1961 (Massey, 2015; Massey et al., 1993). However, in its development, analyzing the driving factors for migration places more emphasis on the micro level. The migration of a member of the household going in search of a job, either within or outside the village, towards international migration is a strategy to maximize income (Rajan & Pillai, 2020; Stark & Bloom, 1985) and also as an attempt to reduce the risk of decreasing income (Davis & Lopez-Carr, 2014; Massey, 1990).

Poverty is widely analyzed as one of the driving factors for migration in developing countries (Al-Maruf et al., 2022; Bellampalli & Yadava, 2022; Sunam & Mccarthy, 2016). In Indonesia, the characteristics of multidimensional poverty are attributed to farmer's households. Statistics Indonesia (2021a) noted that 51.33% of poor households in Indonesia are farmers. This sector also has low productivity, and the average income in this sector is the lowest compared to others (Statistics Indonesia, 2021d). Meanwhile, the agricultural sector comprised 28.33% of the Indonesian workforce, making it the highest absorber of labor (Statistics Indonesia, 2021d). However, this sector has not been able to prosper the farmers as the main actors (Juliatin et al., 2020; Moeis et al., 2020; Novira et al., 2022).

Farmer households conduct various strategies to meet their needs which the agriculture sector cannot provide. Furthermore, livelihood diversification from the non-agricultural sector is an important alternative for poor farmer households in rural areas (Marta et al., 2020; Sihaloho, 2016; Sophianingrum et al., 2022; Sugiharto et al., 2016; Tridakusumah et al., 2015; Yulmardi et al., 2020). Generally, these sources of livelihood are outside the village, causing migration among members. This phenomenon does not only occur in Indonesia but also becomes a general description of the life of lower-class farmers in various countries (Bellampalli & Yadava, 2022; Fassil & Mohammed, 2017; Fayomi & Ehiagwina, 2019; Iqbal et al., 2021; Khosla & Jena, 2020; Meher, 2019; Nguyen et al., 2013; Rajan & Pillai, 2020; Voss, 2022).

West Java is one of the provinces in Indonesia that relies on the agricultural sector as its economic base, as stated in the Regional Regulation No. 9 of 2008 on the West Java Provincial Long-Term Development Plan (RPJPD) for 2005-2025. In general, the description of farmer households in West Java Province is also identical to a not prosperous condition. Out of the 14 agriculture basis regencies in West Java Province, 11 have a higher proportion of poor individuals than the average number of West Java Province (Statistics Indonesia, 2021c). West Java is a province directly adjacent to the capital city of Indonesia and is the center of government and economy in Indonesia. Therefore, it can promote the mobility of the population around the area.

Previous research has extensively discussed the impact of migration on leading to a better life (Bellampalli & Yadava, 2022; Cingolani & Vietti, 2019; Huy & Nonneman, 2016; Kaur & Kaur, 2022; Muliansyah & Chotib, 2019; Redehegn et al., 2019; Susilo, 2014). However, research examining migration in the context of farmers' livelihood (particularly in Indonesia) is still very limited.

Livelihoods are a combination of the available resources, abilities, and actions needed to survive or make a living (Scoones, 1998; Trinh et al., 2018; Wang et al., 2021). When household members decide to migrate, they also consider their assets or resources and the context of vulnerability faced (Ding et al., 2018; Fang et al., 2014). Therefore, the sustainable livelihoods framework (SLF) is needed to gain a deeper understanding of

poverty and livelihood strategy (Department for International Development [DFID], 2001; Ellis, 2003). Through SLF, the factors influencing household decisions to migrate as a livelihood strategy will be known (Mistri, 2019; Tegegne & Penker, 2016; Van Praag & Timmerman, 2019).

This research aims to describe the migration of members of the farmer's household and identify the factors influencing the member's decision to migrate. In the context of agricultural development, an understanding of the migration that has been carried out and of the factors influencing the migration decisions of members of farmer households is necessary so that policymakers can maximize the potential of migrants. The remittances generated by migrants can ideally be invested in economic activities in the area of origin and agriculture to promote agricultural and rural development. The right reintegration strategy for returning migrants is expected to build sustainable livelihoods, ultimately improving the standard of living and the well-being of farmer's households.

Literature Review

Livelihood Strategy. The livelihood strategy is defined as a way of surviving or improving the state of an individual's life and is interpreted as growing beyond "earning a living activity." It can be approached through various individual and collective measures (Dharmawan, 2007). Furthermore, Ellis (2000) and Natarajan et al. (2022) defined this process as the strategies households use to build various

portfolios of activities and social support to survive and improve their standard of living.

The term livelihood not only describes how an individual builds a life but also analyzes the available resources, risk factors, and the context of institutions and policies, as well as that support improving well-being (Ellis, 2003). Livelihood strategy is a heterogeneous social and economic process that exists according to the pressures and opportunities available in the rural economy (de Haan & Zoomers, 2005). These causes and effects align with the location context, such as demographics, vulnerability, income level, and education (Ellis, 2003). The strategies of households in rural areas to achieve sustainable livelihoods can be in the form of agricultural intensification, diversification, and migration (Abera et al., 2021; Ellis, 1999; Fierros-González & Mora-Rivera, 2022; Mao et al., 2020; Su & Yin, 2020). Furthermore, it is sustainable, assuming the livelihood strategy implemented can overcome stresses and shocks and maintain and increase assets without damaging the natural resource base (DFID, 2001; Scoones, 1998). In general, the term livelihood strategy is a multi-concept that refers to how individuals or communities make a living with their assets and achievements in a particular context.

Migration in a Sustainable Livelihoods Framework (SLF) Approach. The study of livelihoods has become one of the dominant approaches to understanding how those living in rural areas survive (DFID, 2001; Ellis, 2000; Scoones, 2009). The SL framework helps in understanding the relationship between migration and livelihoods. It describes the various contexts in which migration decisions are made to implement livelihood strategies. This framework approach is considered appropriate for analyzing migration behavior since the decision to migrate is not just an individual decision that is separated from their social environment and not only on macroeconomic conditions as a determining factor for migration. In the context of the SL framework, the analysis is carried out through appropriate institutional approaches to analyze migration decisions (McDowell & de Haan, 1997).

Furthermore, Ellis (2003) stated that the SL framework could help understand how migration is carried out as a livelihood strategy to alleviate poverty and vulnerability. The term SL not only explains how to survive but also analyzes the available resources that can be used to build a livelihood, the risk factors that must be considered in managing resources, and the institutional and policy contexts that can encourage or hinder a better life. The SL framework previously developed by DFID (2001) and Scoones (1998) was used by Tanle (2015) to develop a conceptual framework to explain the relationship between migration and livelihoods, emphasizing migration as a livelihood strategy. The framework analyzes six main components, namely: (1) background characteristics, which are conditions that cause migration; (2) livelihood resources; (3) vulnerability context; (4) institutional structure; (5) livelihood strategies; and (6) livelihood outcomes (Figure 1).
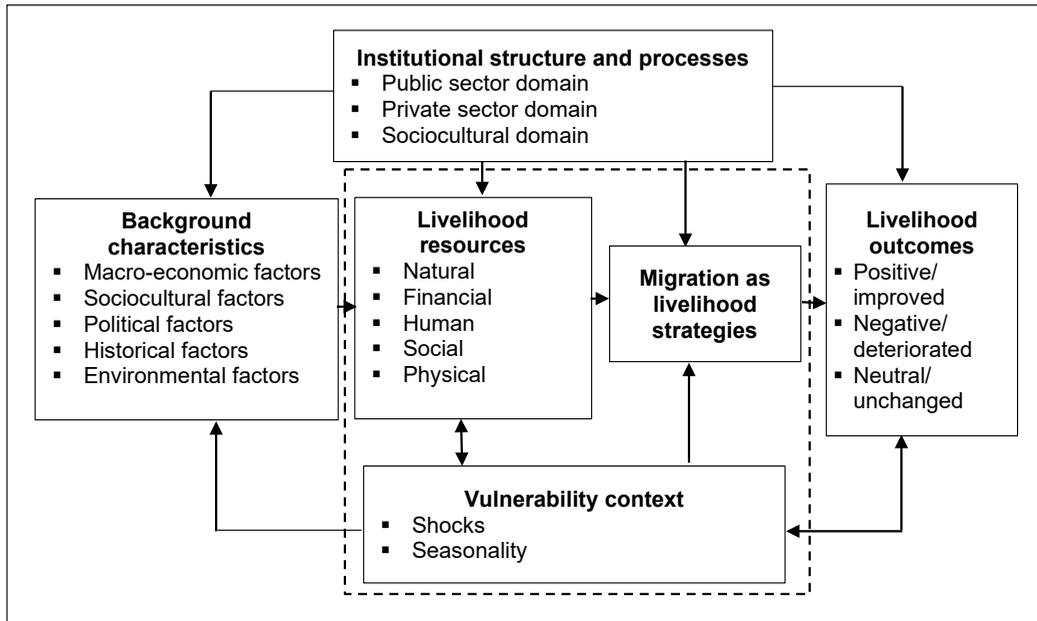
Figure 1. A framework for migration and livelihood studies (Tanle, 2015)
Note. Research focus

This research focuses on micro-level analysis by evaluating the variables related to the internal conditions of the farmer's household, which ultimately influence the decision to migrate. Scoones (2009) reported that strategies for realizing sustainable livelihoods are closely related to how individuals and households combine available resources in response to pressure and change. According to previous studies by Ao et al. (2022), Giri (2022), He and Ahmed (2022), Nath et al. (2020), Su and Yin (2020), Xu et al. (2019), and Wang et al. (2021), it is known that livelihood resources or capital have an impact on the strategies carried out by households. Fang et al. (2014) emphasized that the ability to conduct various livelihood strategies is determined by ownership of material, social, tangible, and intangible assets. Furthermore, Ding et

al. (2018) and Mao et al. (2020) reported that the development of livelihood resources could increase the variety of strategies implemented for sustainability. Therefore, this research focuses on discussing two of the six components of the SL framework, namely household livelihood sources and vulnerability contexts.

The analysis of livelihood resources provides an overview of its various types, which can influence the decision to migrate. First, the availability of natural resources can be used for productive activities, specifically in resource-based activities, such as agriculture, fisheries, and forestry (DFID, 2001). Households use financial resources to analyze the financial ability of households (Ellis, 2003). Human resources (HR) emphasize how the condition of family members. The quality of human resources

can influence the decision of migrants to select their migration destinations and the available opportunities (Tanle, 2015). Fourth, physical resources are productive assets owned in farmer households and are related to the condition of natural resources that can be used for productive activities, such as land cultivated. Finally, social capital emphasizes migrant networks, which can provide access to information on economic opportunities and a safety net during difficulties (Tanle, 2015).

In addition to the resources, the vulnerability context is also a determining variable in the decision to migrate. Furthermore, it is not the same as poverty, which economists define in strict terms (e.g., the poverty line), while reference is made to a trend toward "vulnerable" conditions (Ellis, 2003). Tanle (2015) mentioned three elements identified as vulnerability: shocks, seasons, and household dynamics. In the event of a shock, an individual must survive sudden events without prior warnings, such as illness, loss of livelihood, natural disasters, conflicts, and crop failure due to pests and diseases (Adger, 2006; Ellis, 2003; Tanle, 2015). Furthermore, Mengistu (2022) stated that vulnerability is also determined by various manufactured, institutional, and wealth factors. This vulnerability context is identified based on the vulnerability felt by a community and migrants (Ellis, 2003).

MATERIAL AND METHODS

This study uses panel data from wave 4 (in 2007) and wave 5 (in 2014) of the Indonesian Family Life Survey (IFLS).

Furthermore, IFLS is Indonesia's longest panel research. Data from waves 4 and 5 were selected to describe the current phenomenon related to migration carried out by farmer households. The unit of analysis used in this study is farmer households in West Java Province was selected based on the boundaries or definitions of farmer households according to the Indonesian Central Statistics Agency. To analyze the migration of household members, they are classified into migrants and non-migrants. This research is only limited to the migration between 2007–2014. The data was obtained from the IFLS questionnaire, which specifically asked, "have you ever moved across the village boundary since 2007 and lived at your destination for six months or more?" Migrants are household members that migrated during this period. The respondents who met these criteria were 615 people, including 89 migrants and 526 non-migrants.

The description of migration carried out by household members describes information about migration behavior such as destination, reason, and who migrated. The data was obtained from the answers of the 5th IFLS respondents that migrated between 2007–2014. Data on migration behavior is obtained from Book 3A chapter MG, where the IFLS questionnaire specifically asks, "where is the destination of migration (across village/sub-district/ city/regency/country boundaries);" "the main reason for migrating." Meanwhile, the migration data describes the background condition of the migrant household through the variables of the condition of human,

natural, physical, and financial resources. The descriptive statistical analysis explains the general description of migration carried out by farming households.

Figure 2 shows the factors influencing migration decisions, ultimately determining their member's migration process.

The decision to migrate (with YES and NO categories) becomes the dependent variable to achieve the research aims mentioned above. The data were obtained from the answers of farmer household respondents in IFLS wave 5, migrants and non-migrants, of about 615 people. Meanwhile, the independent variables describe the sources of livelihood and the

vulnerability context that drives migration, as shown in Table 1. Data were obtained based on the answers of the same respondents in IFLS wave 4.
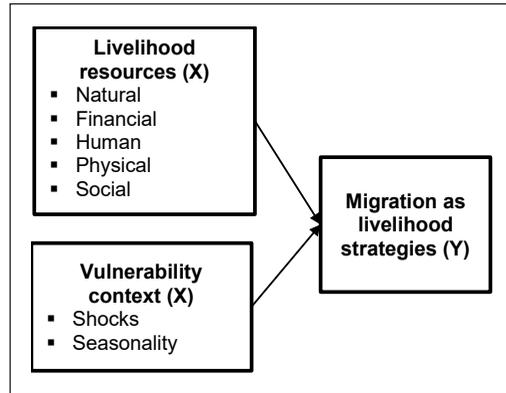
Figure 2. Conceptual framework

Table 1
List of independent variables

No	Variable	Description	Category	Data Source
	A. Human Capital			
1	Age	Respondents' age	Productive: 15–64 years old Nonproductive: > 64 years old	Answers to the questionnaire in book 3A section KR (Household Characteristics)
2	Gender	Respondents' gender	Male/Female	
3	Marital status	Respondents' marital status	Married/unmarried/ widower or widow	
4	Level of education	Last education level	No school/did not finish elementary school—up to college graduation	
	B. Natural and Physical Resources			
5	Land ownership	Do you own farming land?	Yes/No	Answers to the questionnaire in book 2 section UT (farming)
6	Cultivated land area	The area of land used for farming	Area: >1Ha Medium: 0.5–1 Ha Narrow: <0.5 Ha	
	C. Financial Resources			
7	Current living condition	Perception of the ability to meet needs	Ordinal scale: less than enough – more than enough	Answer the questionnaire in book 3A section SW (welfare)
8	Perceived economic status	Household economic status based on respondents' perception	Ordinal scale: very poor to very prosperous	
9	Ability to maintain life in the next five years	Respondent's perception of the ability to conduct their lives in the next five years	Ordinal scale: very difficult to very easy	

Table 1 *(continue)*

No	Variable	Description	Category	Data Source
10	Ability to meet food needs	Ability to meet food needs	Ordinal scale: less able to more than capable	
11	Ability to meet the healthcare	Ability to meet health care needs	Ordinal scale: less able to more than capable	
12	Ability to meet children's needs	Ability to meet children's care needs	Ordinal scale: less able to more than capable	
	D. Vulnerability Context			
13	Crop failure (dummy)	Crop failure incident	Yes/No	Answers to the questionnaire in book 2 section UT (farming)
14	Satisfaction with the current state	Perceived vulnerability based on satisfaction with current conditions	Ordinal scale: very satisfied to very dissatisfied	Answer the questionnaire in book 3A section SW (welfare)

The IFLS data could not measure the social capital variable owned by the household. Therefore, it is not included in the regression equation. Instead, social capital analysis was carried out descriptively based on the results of the literature research.

Furthermore, to explain the factors influencing the decision of household members to migrate, the data were analyzed using logistic regression analysis with the following equation:

$$P(x) = \frac{e^{\alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \ldots\ldots\ldots + \beta_{14} x_{14} + \varepsilon}}{1 + e^{\alpha + \beta_1 x_1 + \beta_2 x_2 + \beta_3 x_3 + \beta_4 x_4 + \ldots\ldots + \beta_{14} x_{14} + \varepsilon}}$$

Description:
P (x): Ever migrated (yes or no)

α: Constant   β: Regression coefficient

e: Exponent   ε: Error

X_1: Age X_8: Perceived economic status

X_2: Gender (dummy) X_9: Ability to maintain life in the next five years

X_3: Marital status (dummy) X_{10}: Ability to meet food needs

X_4: Level of education X_{11}: Ability to meet the health care

X_5: Land ownership (dummy) X_{12}: Ability to meet children's needs

X_6: Cultivated land area X_{13}: Crop failure (dummy)

X_7: Current living conditions X_{14}: Satisfaction with current living conditions

RESULTS AND DISCUSSIONS

Overview of Migration Performed by Members of Farmer Households in West Java Province

This discussion describes the characteristics of migrants and the migration that members of agricultural households carried out in West Java between 2007 and 2014 of about 89 people consisting of 58.4% men and 41.6% women. Compared to non-migrants, the percentage of those that migrate is relatively low, at 14.5%. However, it shows that certain factors can prevent household members from staying in the area of origin. Concerning the framework for the livelihood security strategy described by Ellis (1999), it is assumed that most agricultural households prefer to implement other livelihood security strategies, such as employment diversification and agricultural intensification, then migration. However, households also use other strategies to ensure their livelihoods (McDowell & de Haan, 1997).

The following describes livelihood resource conditions and the migration patterns used to explain this process. The human resource variable describes the demographic characteristics of the migrants. For farmer households, both men and women have a role in maintaining household livelihoods (Table 2). Tables 2 and 3 also show that most migrants are people of productive age, only having completed formal education up to basic education, and are married. Several previous research has shown that young people are more likely to migrate. Productive age family members

are livelihood assets because this group has physical abilities, is more ready to take advantage of new opportunities, are and able to adapt compared to the older age group (Iqbal et al., 2021; Manel et al., 2017; Salam & Bauer, 2022).

Table 2
Migrant demographic characteristics

Variable	n (person)	%
1. Human capital		
Gender		
Male	52	58.4
Female	37	41.6
Age (years)		
15–64	84	94.4
> 65	5	5.6
Marital status		
Married	75	84.3
Not married yet	14	15.7
Widow/widower	-	-
Education Level		
Not in school/not graduated from elementary school	6	6.7
Elementary school graduate	45	50.6
Junior high school graduate	18	20.2
Senior High school graduate	15	16.9
College	5	5.6
Position in the household		
Head of household	32	35.9
Husband and wife	23	25.8
Child	27	30.3
Other Neighborhood members	7	7.9
2. Natural & physical resources		
Own land		
Yes	33	37.1
No	56	62.9
Land tenure status		
Landowner	7	7.9
Landowner & land tenant	25	28.2
Land tenant	56	62.9

Table 2 *(continue)*

Variable	n (person)	%
Cultivated Land Area		
< 0.5 Ha	77	86.6
0.5–1 Ha	9	10.1
>1 Ha	3	3.4
3. Financial resources		
Current living conditions		
Not enough	61	68.5
Sufficient	25	28.1
More than enough	3	3.4
Perceived economic status		
Very poor	4	4.5
Poor	42	47.2
Enough	36	40.4
Prosperous	6	6.7
Very prosperous	1	1.1
Ability to maintain life in the next five years		
Very incapable	0	0
Not capable	23	25.8
Capable enough	62	69.7
Capable	4	4.5
Very capable	0	0
Ability to meet food needs		
Inability to meet needs	17	19.1
Capable of meeting the needs	68	76.4
More than able to meet the needs	4	4.5
Ability to meet health care needs		
Inability to meet needs	28	31.5
Capable of meeting the needs	56	62.9
More than able to meet the needs	5	5.6
Ability to meet children's needs		
Inability to meet needs	60	67.5
Capable of meeting the needs	27	30.3
More than able to meet the needs	2	2.2

In connection with the level of education of migrants, their share at each level of education shows the tendency towards migration for the reason of work (Table 3). It means that educated and less educated migrants try to find new jobs in the destination area. It raises concerns that the number of uneducated migrants leads to a lack of economic security in the destination area. The low level of education of most migrants will limit access to job opportunities and opportunities to earn better wages (Bhattamishra, 2020; Marta et al., 2020).

Most of the respondents were married (Table 2), and they usually moved without being accompanied by family members (Table 4). The position in the household seems to influence the desire to migrate. Some migrants are heads of households (Table 2) because of their financial obligations. Research by Jong and Gordon (1996) in Thailand and Regmi et al. (2020) in Nepal also showed that the head of the household, both male and female, are more likely to migrate than other members due to their responsibilities to the family. It shows that one way to generate income for farming households is by permanently or temporarily migrating a family member. This behavior has been common in rural-urban migration in Java since the 1980s, as described by Mantra (1981) and Tirtosudarmo (1984). It is also a common phenomenon in rural-urban migration in Indonesia and a kinship network for migrants, where the successful ones invite other family members (Mulyoutami et al., 2016; Noviati et al., 2022). The kinship network is one of the social capital that is a pull factor for migration. It is formed between migrants in the area of destination and potential ones in the area of access, security, and social

support during difficulties (Castles et al., 2005; Massey et al., 1993).

The position in the household seems to influence the desire to migrate. Some migrants are heads of households (Table 2) because of their financial obligations. Research by Jong and Gordon (1996) in Thailand and Regmi et al. (2020) in Nepal also showed that the head of the household, both male and female, are more likely to migrate than other members due to their responsibilities to the family.

The explanation above shows that productive human resources are an asset for the migration of farming households as a livelihood strategy. Migration provides opportunities for immigrants to earn income outside the agricultural sector. This result also shows the potential for new problems related to the issue of farmer regeneration which is an important agenda in agricultural development in Indonesia (Dayat et al., 2020; Susilowati, 2016). However, these productive age migrants can be a brain gain for rural and agricultural development when empowered adequately to contribute to agriculture and the rural economy. Anwarudin et al. (2018) and Setiawan et al. (2015, 2016) stated that motivation, readiness, and ecosystems need to be built for young actors to become more adaptive and ready to return to the agricultural sector and create livelihoods in their areas of origin.

In agricultural activities, physical resources are closely related to the condition of natural products. The land is the main resource for carrying out their livelihoods of physical and natural resources through cultivation. Table 2 shows that most migrant households do not own land and are tenant farmers or sharecroppers with a cultivation rate < 0.5 Ha. The narrowness of arable land causes income from farming to be unable to meet household needs, affecting financial resources. As a result, most respondents were not economically prosperous and unable to meet household needs related to children (Table 2). It shows that the pressure to meet the family's needs is one of the drivers for members of the farming household to migrate. It is in line with the research by Regmi et al. (2020) and Salam and Bauer (2022) and confirmed through the reasons for migration described in the next paragraph.

The main reason for migration for both males and females is related to work (Table 3). It reflects that migration for most respondents is a livelihood strategy adopted by farmer households due to limited employment opportunities and low incomes in the agricultural sector. The availability of jobs in the agricultural sector is related to the shift in social ties in rural areas. Mardiyaningsih et al. (2010) and Kurnia (1999) explained that major changes that have occurred since the green revolution was launched have resulted in the erosion of patron and client relationships, resulting in a gap in social relations in rural areas. Agricultural engineering introduced during the "Green Revolution" also marginalized wage laborers, including female workers. Some activities, such as weeding and threshing rice, are no longer necessary

Table 3
Distribution of migrants by reason for migration

	Reasons to migrate (n = person)					
	Job-related	Education	Marriage	Transmigration	Disaster	Other
Gender						
- Male	41	5	1	1	1	3
- Female	25	5	4	0	3	0
Total (n)	66	10	5	1	4	3
Level of education						
- Not in school/not graduated from elementary school	1		1	1	2	1
- Elementary school graduate	40		2		2	1
- Junior high school graduate	13	4	1			
- Senior High school graduate	8	5	1			
- College	4	1	1			1
Total (n)	66	10	5	1	4	3

because machines have replaced their positions (Breman & Wiradi, 2002; Djoh, 2018).

The rural-urban migration seems dominant in this case (Table 4). Lee (1966) stated that the push and pull migration factors occur for two reasons, first, because of the narrowing of employment opportunities in villages, and second, because cities promise jobs with better wages. The theory is still relevant and used to explain the phenomenon of rural-urban migration in Indonesia and various countries globally (Alarima, 2018; Sridhar et al., 2013; Ullah, 2004). However, several empirical research also shows that apart from economic reasons, the impetus for rural-urban migration is also due to limited facilities (education, entertainment) in villages and because cities promise opportunities to access better facilities (Alarima, 2018; Fassil & Mohammed, 2017; Manel et al., 2017). It can also be seen in Table 2, where migrants

Table 4
Distribution of migrants by flow and migration destination area

Variable	n (person)	%
Migration Flow		
rural-rural	24	27.1
rural-urban	48	53.8
urban-rural	3	3.4
urban-urban	14	15.7
Migration Destination Area		
Domestic		
within the province	55	61.8
outside the province	24	26.8
Overseas	10	11.4
Moving with family members		
Yes	31	34.8
No	58	65.2

with secondary education migrate to pursue a better education.

Migration dynamics are in line with the context of place and time. One of the 'big' occurrences that changed migration dynamics was the conditions during the Covid-19 pandemic, which hit almost all

countries worldwide, including Indonesia. The Covid-19 pandemic brought Indonesia and many countries into an economic crisis (Statistics Indonesia, 2021b). The crisis has more impact on people in urban areas than rural areas.

Statistics Indonesia (2021b) stated that the number of poor people in urban and rural areas rose by 1.32% and 0.60% (September 2019, 2020). The loss of jobs, as well as the decline in real incomes and the standard of living, have caused the welfare of the people to decrease. Many migrants can no longer be involved in the urban economy and are forced to return to their village. It shifts the pattern of rural-urban migration, where the city is no longer the livelihood of migrants. According to Breman and Wiradi (2002), this condition is similar to the economic crisis that hit Indonesia in 1998 when residents were forced to return to their villages. Arifin (2021) stated that based on data from the 2020 National Manpower Survey (Sakernas), there was an increase in the share of the agricultural workforce during the pandemic (2019, 2020). It became an additional burden in the agricultural sector as the main source of livelihood with low productivity.

Factors Affecting the Decision of Farmer Household Members to Migrate

To obtain a more precise description of the factors that influence the migration decision of agricultural households, a multinomial regression model with two category-dependent variables (migration or non-migration) was estimated. The analysis was carried out on 615 members of the farmer's household. Age, current living conditions, the ability to provide for children's needs, and crop failure significantly affect the decision to migrate (Table 5). Furthermore, it shows that several dimensions of human and financial resources and the context of vulnerability are the determinants used by farmers to make migration decisions.

Age has the opposite effect on migration decisions (β = -0.075). Respondents of productive age have a total of 1.078 times the number of chances to migrate (OR = 1.078) and vice versa. This result is in line with the research by Regmi et al. (2020), stating that age is nonlinearly related to migration. It strengthens the description of the characteristics of migrants discussed previously, where most are productive age population. The age variable relates to physical, overcoming risks, and adapting abilities. From a human resources perspective, the productive age population is a livelihood asset that supports farmer households. Meanwhile, the respondents' education level does not affect the decision to migrate. Table 2 shows that most migrants have a low level of education and are willing to enter any employment sector. Uneducated migrants often rely on social networks to obtain information about job opportunities in their destination (Marta et al., 2020; Morten, 2016). This result is different from the studies conducted by He and Ahmed (2022) and Synthesa (2021), where the higher the level of education, knowledge, and skills, the greater the opportunity for household members to switch from the

agricultural sector and seek opportunities within and outside the village. It reinforces that household members migrate solely to carry out livelihood strategies and rely more on physical abilities to find work outside the agricultural sector. Likewise, gender does not influence the decision to migrate. Farmer households mobilize their members, both men and women, to earn a living outside the village. The results of this study are similar to those of Susilowati (2017) and Tridakusumah et al. (2015), which show that men and women in farming households in Indonesia have the same role in carrying out income diversification strategies.

Meanwhile, financial resources explained through the variables of current living conditions and the ability to meet children's needs influence the decision to migrate, as shown in Table 5. The lower the perceived current living conditions (β = -1.860), increases the migration opportunity by 0.704 times. Furthermore, the greater the inability of respondents to meet children's needs (β = -1.433) also increases the tendency to migrate by 0.994 times (OR = 0.994). It confirms the previous study that migration is an opportunity for farmers to overcome limited financial resources (Bellampalli & Yadava, 2022; Nguyen et al., 2013; Rajan & Pillai, 2020; Tanle, 2015; Tridakusumah et al., 2015).

The vulnerability context is one of the sections treated as a livelihood security strategy when assessing migration. For farmer households, events related to natural

Table 5
Panel data logistics regression results

Variable	Coefficient(β)	Sig.	Odds Ratio (OR)
Human resources			
Age	**-0.075**	**0.001**[**]	**1.078**
Gender (male; female)	-0.85	0.824	0.918
Marital status (married; not/unmarried)	1.518	0.172	4.562
Level of education	0.21	0.221	0.979
Natural and physical resources			
Land ownership (yes; no)	-0.182	0.112	0.833
Cultivated land area	1.146	0.426	3.174
Financial resources			
Current living conditions	**-1.860**	**0.034**[**]	**0.704**
Perceived economic status	0.008	0.986	0.992
Ability to maintain life in the next five years	0.593	0.697	4.699
Ability to meet food needs	0.179	0.215	3.259
Ability to meet health care needs	2.225	1.864	4.927
Ability to meet children's needs	**-1.433**	**0.057**[*]	**0.994**
Vulnerability context			
Crop failure (yes; no)	**1.294**	**0.025**[**]	**0.274**
Satisfaction with current living conditions	-0.232	0.176	3.572

conditions such as floods, droughts, pests, and disease attacks can result in a decrease or loss of income. Furthermore, it is one of the vulnerable factors for households that can ultimately influence the decision to migrate (Ellis, 2003; Tanle, 2015). For example, the analysis of West Java agricultural households showed that poor harvests influenced the decision to migrate. Furthermore, if an individual experiences this, the probability of migrating is 0.274 times higher than if they do not (Table 5). It reflects that livelihoods in the agricultural sector are very vulnerable to fluctuations in income and that households are faced with the choice of using other forms of livelihood to maintain or improve their well-being. Some previous literature shows that migration by members of farmer households to another farm (rural migration) or work in the non-agricultural sector (rural-urban migration) is a common response to overcoming seasonal problems (Bogale & Erena, 2022; Ellis, 2003; Lottering et al., 2021; Pritchard et al., 2019; Rijanta, 2016).

Meanwhile, other variables related to farming activities, namely land ownership and cultivated land area, do not significantly influence the decision to migrate. It is slightly different from the results of previous research conducted by Jong and Gordon (1996) in Thailand, Kosec et al. (2018) in Ethiopia, and Pritchard et al. (2019) in Myanmar, where land is an intermediate variable in determining the food security of the household and a driving factor for migration. Many members of homeless farmer households choose to migrate to areas with better job opportunities. The data from this survey shows that most of the farmer households, both migrant and non-migrant in West Java Province, have an almost similar picture, where some do not own land or as sharecroppers, and most cultivate land under 0.5 Ha. Ultimately, the decision to migrate is more determined by the perceived vulnerability and the availability of other sources of livelihood within or outside the current place of residence.

CONCLUSION

This study analyzes migration decisions using a framework approach for sustainable livelihoods. Data from the IFLS panel were used to examine household changes over time and explain the migration decision context. The results, in general, illustrated that the livelihood of farmers' households is influenced by the availability of resources and access to sources within or outside the residential area. Meanwhile, their main motive for migrating is the economic drive. The risk of poor harvests and the ability to meet their needs make households feel vulnerable to the sustainability of their livelihood in the region of origin and become a driver of migration. Although there are other reasons for migrating, for example, marriage or education, the main impetus is to improve household life.

In addition to limited financial resources, the availability of human resources, specifically the age variable, also influences the decision of household members to migrate. The members of

the productive age are assets that can be used to improve livelihood outcomes. Furthermore, migration to work or pursue a better education is expected to bring changes to the well-being of farmer households. Based on the concept of 'brain gain,' it is viewed as an investment in human resources (Bongers et al., 2022; Mayr & Peri, 2008; Stark et al., 1997). Returning migrants are expected to be experienced, educated, be experts and contribute to the development of their region of origin through the transfer of technology and knowledge (Kuépié, 2018).

Agricultural development is needed to ensure the livelihoods of the households involved. In contrast, migration carried out by members of farmer households will positively impact agricultural development through the 'brain gain' of returning migrants. Therefore, it is important to develop a strategy of reintegration, both economically and socially, so returnees can contribute to agricultural development. Furthermore, if returnees can secure their livelihoods, the potential for re-migration decreases. In this case, efforts to re-integrate can be considered an important factor in the development.

Research Limitations

This research only includes migration from 2007–2014, and it is assumed that all individuals that migrated before 2007 are non-migrants, although many households are very likely to migrate before 2007. Furthermore, the available data are less likely to capture circular migration behavior or seasonal migration that is commonly carried out by members of farmers' households in West Java Province. Future research is expected to use longer data panels to describe the migration behavior of households that are not accommodated in this research. Research with direct interviews with farmer households is strongly recommended to complement these results.

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SOCIAL SCIENCES & HUMANITIES

Social Interaction of Japanese Elderly in Chiang Mai, Thailand

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ABSTRACT

This qualitative research aimed to study the social interactions of Japanese elderly staying long-term in Chiang Mai. The key informants were nine Japanese, 60 years of age and up, staying for long-term in Chiang Mai, selected by purposive sampling. The informants holding Non-Immigration Visa, code O-A (long-stay), and staying in Chiang Mai for more than five years provided clear information on the studied issues. Data were collected by conducting in-depth interviews and using triangulation data testing and analyzed by using content analysis and theme analysis for summarizing the research results. The results found that the Japanese elderly regularly interacted with people in the community via daily life and social activities in daily face-to-face conversation. The Thai language was used in communications with community members. The interactions' scope, frequency, and intensity were in the neighborhood. The key informants spent time building familiarity with people and limited special physical areas with the capacity to create social interactions. Long-term residence in Chiang Mai for more than three years was found to have caused elderly Japanese informants to have interactions with the environment while connecting the micro-system, the mesosystem, the exo-system, and the macro-system, causing elderly Japanese informants to have broad social networks, resulting in good learning and understanding of community cultures, laws, rules, norms and values in addition to enabling behaviors consistent with community culture, creating understanding and respect for cultural differences and ability to live in harmony in Thai society.

INTRODUCTION

The global transition to aging societies has increased international migration in the context of the elderly population, particularly in developed countries. This

new phenomenon is increasing in the 21st century and is a migration for a better life abroad. Most elderly foreigners opt to migrate to destinations in developing countries with fewer amenities and smaller economies. Thailand has been a country in the target group for supporting retired elderly people from abroad since 1990, and Thailand is one of the top countries of interest for elderly foreigners (Williams et al., 2000). In 2019, 1,875,368 retired foreign tourists came to stay in Thailand. Of this number, 181,656 were elderly Japanese tourists aged 65 years and up (Ministry of Tourism and Sports, 2019). Japan has the highest ratio of elderly citizens in the world, with the population aged over 60 years making up 43 million of the country's 126.9 million-strong population or 34.0% of the population (Department of Economic and Social Affairs, 2019).

Many elderly Japanese people have come to live in Thailand, particularly in Chiang Mai. The province with the most Japanese people in Thailand is Bangkok, followed by Chonburi and Chiang Mai, respectively. Most of the Japanese people living in Bangkok and Chonburi are working-aged people. Therefore, it differs from Chiang Mai, where most elderly people have come to stay for a long time after retirement. In addition, the number of elderly Japanese people holding non-immigrant visas (Code O-A) in Chiang Mai was 3,130 people, divided into 1,690 people aged 55–59 years, 692 people aged 60–69 years, 635 people aged 70–79 years, 98 people aged 80–89 years and 15 people aged 90 years and up (Nishikito, 2020).

Old age is a biological phenomenon with the most difficult adaptation and environmental interaction (Duangkaew, 2015). Therefore, international migration by elderly Japanese people to spend the remainder of their lives in Chiang Mai, Thailand, a different country with sociocultural differences, is not easy. Thailand and Japan each have their own cultures. According to the study, problems during long stays by elderly Japanese people in Chiang Mai are mostly due to the absence of smooth participation in social activities due to barriers caused by cultural differences in language, laws enforced by Thailand, values, and ideas. However, elderly Japanese people have tried finding guidelines for improving relationships with community members to gain acceptance from Thai society and residents in Chiang Mai (Koshiji, 2012).

Social interactions are human behaviors in society and a lifelong learning process for members of society (Talcott, 1965). A person's balance is usually created by regular interactions with the environment and good adaptation to the environment (Bronfenbrenner, 2005). Therefore, social interactions are relationships among members linked to community culture, comparable to a rule for community members to behave and live together happily. Sydenham (1960) stated that social interactions are a key social process in connecting across societies and cultures, particularly for societies in the age of globalization where people of many ethnicities live in the same area.

The phenomenon of many elderly Japanese people residing long term in Chiang

Mai province addressed earlier is very significant. Therefore, the researcher was interested in studying the social interactions of elderly Japanese people living in Chiang Mai to create new knowledge on how elderly Japanese people socially interact when living with Thais in society. The results might be useful guidelines for the agencies whose obligations concern developing and promoting long-stay tourism for the elderly Japanese people in Chiang Mai province to support them in living happily in different social and cultural contexts.

Research Objective

The research objective is to study the social interactions of elderly Japanese people staying long-term in Chiang Mai, Thailand.

Literature Review

Long-Term Residence Tourism Concepts. The Long Stay Tourism Development Promotion Committee defines "long-stay tourists" as tourists who stay for one month and up. Initially, a focus was placed on retired tourists who wanted to travel to live and tour as an additional activity (Ministry of Tourism and Sports, 2018). The general characteristics of long stays include longer than ordinary stays in a foreign country to perform activities for relaxation or recreation and a greater focus on staying in place rather than traveling in addition to having a residence or rented lodgings abroad for residence without living in a hotel along with sufficient funds for living abroad (Intaratat et al., 2006). In 1992, Japan created the Japanese Long Stay Foundation

to survey the feasibility of long-stay tourism with appropriate living costs and maintain the quality of life (Miyazaki, 2008). From 2008-2010, the Japanese government supported elderly Japanese people traveling outside the country under the Visit World Campaign. Thailand was supported as one of the nine countries where elderly Japanese people should travel for long stays.

When considering the consistency between Japanese government policies and Thai tourism policies in 2001, the Thai government supported Thailand as a destination for long-stay tourists aged 50 years and up with a focus on working-age retirees with high spending power to bring currency into the country and strengthen the Thai economy. The National Long Stay Tourism Promotion and Development Committee designated five provinces and areas to support long-stay tourists in the target group in the initial stage consisting of Chiang Mai, Sukhothai, Hua Hin-Cha-am, Kanchanaburi, and Nong Khai (Ministry of Tourism and Sports, 2018). The province of Chiang Mai made a development goal to become a center of tourism and international services as a City of Life and Prosperity, a city that gives happiness and a valued life to residents and guests as a pleasant world-class tourism city, a center of trade, investment, and transportation, a Medical and Health Hub and a city with a diversity of nature and culture (Chiang Mai Provincial Office, 2020).

Social Interaction Concept. Social interactions are a basic system of human actions in living together and are behaviors

that indicate relationships between elderly Japanese people as community members. Bronfenbrenner's Ecological Systems Theory (Bronfenbrenner, 2005) was applied as a broad guideline for conducting field studies and building an in-depth understanding of social interactions between elderly Japanese people and community members in environments with continual interactions throughout long stays in Chiang Mai. The environment was divided into the following four systems: (1) The microsystem, which is the system closest to elderly Japanese people with regular interactions, (2) The mesosystem, which is a system of interactions related to groups of persons, networks, and organizations, (3) The exo-system, which is a system of interactions with outside environments in the physical area, in the areas of economic systems, residence, communications, public utilities, and public health without directly interacting while influencing the lives of elderly Japanese people, and (4) The macro system, which is a system of elderly people's interactions with social environments, cultures, values, laws, attitudes, and religions that can have effects on elderly Japanese people when in a long stay under sociocultural differences between Thailand and Japan.

The human quality of life is not only viewed as an external material factor, and consideration is also given to relationships between humans and abstract psychological quality (Bentham, 1789). Humans are social animals that need to live with others as a group, community, and society, particularly in the age of globalization when migrations across borders are widespread (Appadurai, 2002). Social interactions among people of different and diverse ethnicities, languages, and cultures caused people to communicate, exchange, understand, and accept sociocultural differences and diversity (Maluhan, 1964) to live with others in destination countries appropriately.

METHODS

This study is a qualitative research conducted in a purposively selected area in Muang District, Chiang Mai Province, in Huay Kaew, Nimmanhemin, and Chang Klaan. The criteria for selecting the study were areas with many elderly Japanese people who came on long stays and areas with social activities capable of clearly reflecting social interactions. The key informants were nine elderly Japanese people on long stays in Chiang Mai, consisting of three women and six men. The sample was purposively selected and comprised Japanese people aged 60 who were holding non-immigrant visas (Code O-A; long stay) and living in Chiang Mai for five years and up. The sample stood out from the view of local people in the area of social interactions with Thais, participated in social activities regularly, was able to adapt to a different culture well, and was willing and consented to participate in the project through recommendations from various organizations, e.g., City Municipality, Subdistrict Administrative Organization and their acquaintances close to the sample. In addition, five stakeholders, namely

three representatives from the Chiang Mai community, the community leader, and the head of the tourism development and promotion department of Chiang Mai Municipality, were included. This study received confirmation for human research ethics from the Institutional Review Board, Department of Social Sciences, Mahidol University.

The researcher collected data using an in-depth interview form parallel with non-participant observation and a focus group discussion. It took four months to collect data. First, the researcher collected data herself via a Japanese language interpreter and a Thai interpreter to have data accuracy and language translation. Then, interviews were conducted individually with nine key informants using no more than 50 minutes per interview. After conducting the interviews and non-participant observation, a focus group discussion consisting of nine elderly Japanese people, three representatives of the community in Chiang Mai Province, the community leader, and the head of the tourism development and promotion department of Chiang Mai Municipality was conducted and moderated by the researcher with Thai and Japanese interpreters to translate the language for one day to verify and to confirm the accuracy of the data quality of the research results. Finally, data were collected until saturated to cover all the required information for the research objective.

Data collection instruments included a question guide for the in-depth interviews with content divided into two parts. Part 1 covered the demographic data and long-stay characteristics of elderly Japanese people in communities, and Part 2 covered data on social interactions with local people in all four areas of the environment. In addition, non-participatory observation forms were used to record the data from observations to support data from the in-depth interviews with greater coverage and clarity. Observation guidelines were used to observe the results of social interactions with others and activities in which elderly Japanese people participated in communities. The focus group discussion involved an organized discussion with a selected group of individuals to gain information about their views and experiences for obtaining several perspectives on the social interactions of the elderly Japanese people in Chiang Mai.

Data from the field were analyzed by drawing conclusions and performing content analysis based on descriptions from the in-depth interviews. The triangulation method was used to test data for accuracy and reliability before compiling a report on the findings.

RESULTS

Demographic Characteristics of the Key Informants

Nine key informants comprised six men and three women with a mean age of 69.1 years; three subjects came from Tokyo, one from Kanagawa, one from Hyogo, and one from Saitama. Seven samples had graduated with bachelor's degrees, master's degrees (one participant), and levels lower than bachelor's degrees (one participant).

Before retirement, five samples worked as private company employees, three were civil servants, and one was a housewife.

The key informants had a mean income of 106,775 Baht per month. The average expenditure was 62,200 Baht per month. Major incomes were from the pension and savings. In terms of living conditions, most of them lived alone (five subjects), followed by the subjects who lived with spouses (four subjects). The key informants had a mean long stay of 6.6 years and preferred to live in the town center of Muang District, Chiang Mai, in the areas of Nimmanhemin, Huay Kaew, and Chang Klaan.

In coming on long stays, three subjects were recommended by Japanese friends who came for long stays, four subjects had come to travel in Chiang Mai several times before deciding to stay in Chiang Mai on long stays, and one subject worked in Bangkok for ten years before opting for long stays in Chiang Mai. In addition, one subject contacted a government agency and consulted with an elderly Japanese persons' club upon arriving in Thailand. The subjects selected Chiang Mai due to the province's world-class reputation in tourism, preference for nature and the environment in Chiang Mai, amenities, easy travel from Japan, availability of Japanese products, low cost of living, freedom, and the friendly local attitude toward Japanese people. Furthermore, Thai social, religious, and cultural contexts differ greatly from Japan.

Based on the general demographic characteristics of the key informants, their socioeconomic backgrounds were demonstrated in Tables 1 and 2 by using personal codes JP1-JP9 instead of real names.

General Characteristics of Long-Term Residence in Chiang Mai

In Residential Aspects. The elderly Japanese people who came for long stays were found to live in condominiums and serviced apartments in Huay Kaew, Nimmanhemin, and Chang Klaan with emphasis on convenience, cleanliness, peace in residential areas, natural environments, surrounding shade, and lights on paths. The communities had green parks for relaxation with a residence price of 20,000–8,000 baht per month and an approximate living area of 80–200 square meters—the sample selected residences near department stores, supermarkets, hospitals, restaurants, airports, and railroads. Chiang Mai Province has an attractive physical environment without extreme cold or hot weather conditions or severe disasters. Furthermore, activities can be performed throughout the year.

In Social Aspects. Chiang Mai has suitable social characteristics for the lifestyles of elderly foreigners. Chiang Mai's society is based on mutual dependence, and the key informants were confident of receiving aid in a crisis. The community was warm, strong, and not selfish; thus, the sample had a sense of belonging to the community. The residents were friendly, kind, respectful of the elderly Japanese people as older relatives,

Table 1
Socioeconomic backgrounds of the nine key informants staying long-term in Chiang Mai

Key informants	Age	Gender	Marital status	Educational background	Domicile	Occupation prior to retirement	Living conditions in Chiangmai	Period of stay in Chiangmai
JP 1	66	Male	Married	Master's degrees	Osaka	Engineer	Living with spouse	5 Years
JP 2	67	Male	Single	Bachelor's degrees	Tokyo	Government official	Living alone	6 Years
JP 3	65	Female	Married	Bachelor's degrees	Osaka	Housewife	Living with spouse	5 Years
JP 4	68	Female	Married	Bachelor's degrees	Tokyo	Accountant at a private company	Living with spouse	7 Years
JP 5	70	Female	Married	Bachelor's degrees	Tokyo	Government official	Living with spouse	7 Years
JP 6	71	Male	Single	Bachelor's degrees	Kanagawa	Government official	Living alone	7 Years
JP 7	70	Male	Not specified	Bachelor's degrees	Hyogo	Lawyer	Living alone	7 Years
JP 8	69	Male	Single	Bachelor's degrees	Saitama	Economist at a private company	Living alone	8 Years
JP 9	76	Male	Not specify	Under Bachelor's degrees	Osaka	Transportation company	Living alone	8 Years

Table 2
Socioeconomic backgrounds of the nine key informants staying long-term in Chiang Mai

Key informants	Income/Month	Source of income	Approximated expenditure for long-term stay/ month
JP 1	115,000 Baht	Pension, Savings, Stock investment	74,000 Baht
JP 2	107,175 Baht	Pension, Savings	59,800 Baht
JP 3	92,000 Baht	Pension, Savings	62,255 Baht
JP 4	99,200 Baht	Pension, Savings	59,000 Baht
JP 5	99,000 Baht	Pension, Savings	71,000 Baht
JP 6	106,800 Baht	Pension, Savings	58,000 Baht
JP 7	125,000 Baht	Pension, Savings, Additional income from legal consulting	59,000 Baht
JP 8	106,300 Baht	Pension, Savings, Dividends	59,250 Baht
JP 9	110,500 Baht	Pension, Savings, Housing Rent	57,500 Baht

concerned, generous, and respected the values of the elderly Japanese people. The elderly Japanese people also had good relationships with community members. They participated in community activities such as annual local cultural activities, volunteering in foundations for the support of underprivileged children, volunteering as Japanese language interpreters, teaching Japanese language and culture at schools and universities, participating in sporting activities, and interacting with community members along with building connections leading to happiness during their long stays.

In Health Aspects. The findings revealed that elderly Japanese people could care for their health by exercising regularly, eating organic foods, using Thai herbs in healthcare, having no chronic illnesses as barriers, having annual health examinations, and having Thai insurance and health insurance policies. The elderly Japanese people preferred to use healthcare services at Chiang Mai-Ram Hospital and Lanna Hospital, which are always among the most modern private hospitals in Chiang Mai with Japanese language interpreters available. Furthermore, the key informants preferred using traditional Thai medical services such as Thai massage and spa services. Nearby residential neighborhoods and areas had sufficient indoor and outdoor exercise space, with ten golf courses not far from their residences. In the elderly Japanese people's decisions in favor of long stays, healthcare service readiness was

important. Chiang Mai is a medical tourism hub with five major hospitals, namely Lanna Hospital, McCormick Hospital, Chiang Mai-Ram Hospital, Maharaj Nakorn Chiang Mai Hospital, and Ruam Paet Hospital. Elderly people are fragile with physical deterioration. Therefore, good healthcare and facilities are necessary for the elderly Japanese people who have stayed longer than five years.

In Economic Aspects. The findings revealed that Chiang Mai Province offers goods and services capable of meeting the needs of the elderly Japanese people with a low cost of living. As a result, the elderly Japanese people did not have to worry about income, could live comfortably, and could plan the use of savings or pensions without difficulty. The main costs were food-related expenses, followed by the cost of lodgings, goods and services, including healthcare services, and expenses from traveling to nearby provinces.

Social Interactions of Elderly Japanese Persons in Chiang Mai

Social Interactions in the Micro-System. According to the findings, the elderly Japanese people did not live alone in the destination country. Normally living each day caused the elderly Japanese people to be always involved in the community, particularly people closest to the elderly Japanese people with direct interactions. Neighbors living in the same neighborhood met each other nearly every day until the elderly Japanese people became familiar with

their neighbors with a regular frequency of social interactions. In addition to neighbors, the elderly Japanese people interacted with acquaintances such as vendors, service employees, Thai language teachers, drivers, and barbers. According to an interview, one of the subjects (JP1) stated,

> *"I have a close friend who is Thai and my neighbor in the same condominium complex. At first, I didn't speak much because I didn't feel confident about living abroad. I didn't trust people much and had to take care of myself. Living near others and meeting frequently helped build familiarity until we became close neighbors."*

Concerning the characteristics of micro-system interactions, interactions were found to be informal, focusing on two-way communication. Speaking directly face-to-face was the best method and essential for creating social interactions among community members. Speaking connected thoughts and feelings while helping describe daily lifestyles and social activities. Conversations connected the roles and duties of the elderly Japanese people with community members in addition to creating exchanges, learning, and assistance for the elderly Japanese people to understand the Thai language, lifestyles, habits, and values of community members, leading to more learning and a better understanding of Thai sociocultural systems. The more the elderly Japanese people learned, the better they elderly Japanese people were able

to adapt to living abroad. In an interview, an elderly Japanese person (JP3) stated, "Speaking face-to-face remains necessary in day-to-day meetings. I have to speak and meet with Thais and do activities together. Speaking frequently helped me to learn the Thai language and culture better. It also gave me more friends."

In micro-system interactions, most Japanese elderly used Thai and some English to achieve communication goals and build understanding. The elderly Japanese people sometimes used Japanese with Thais, who could communicate in Japanese. Therefore, social interactions to achieve the highest goal require a combination of verbal communication, non-verbal communication, and technology with language translation applications. It enabled the elderly Japanese people to interact well with community members.

In terms of time and social interactions in the micro-system, time was a driver of social interactions and natural familiarity between people who did not know one another until they became close friends. When the elderly Japanese people first came for long stays in Chiang Mai, they spent almost one-year creating interactions with people in the neighborhood. The elderly Japanese viewed social interactions not only as conversations counted only in minutes and hours of conversation as indicators of interactions. However, the elderly Japanese people recognized these conversations as building friendships and not only greetings, meaning social interactions were close until the elderly Japanese people and

their neighbors became good neighbors. According to an interview with an elderly person (JP5),

> *I spent almost a year building interactions with local people before we became friends. Japanese people are quiet and speak little. The Thais I meet are my neighbors. Time made us become familiar with and trust in each other until we became close friends.*

The elderly Japanese people had excellent social interactions with the environment in the micro-system, which led to participation in social activities until the elderly Japanese people had new roles in the community with opportunities to participate in a broad range of activities linked with interactions with the environment in other systems including the mesosystem, the exo-system, and the macro-system.

Social Interactions in the Meso-System. The elderly Japanese people were found to have interacted with close Thai friends in the micro-system, causing relationships to be expanded and leading to new interactions with a diverse group of persons and other organizations through recommendations from Thai friends. Furthermore, performing social activities caused interactions to be expanded, leading to meetings and associations with a diverse group of people. Thus, the elderly Japanese people built wider networks and created social integration by forming social groups and a long-stay elderly persons' club in Chiang Mai. This

mechanism helped the elderly Japanese and community members cooperate and have closer relationships.

In the area of social activities, most of the elderly Japanese people participated in social activities related to local traditions at the familial, local, and provincial levels. Moreover, the elderly Japanese people performed activities with Thai community groups, such as sports and recreation groups, education groups, social volunteer groups, Thai arts and crafts groups, Thai music groups, and health clubs freely. One elderly person (JP2) stated, "The people I frequently communicate with are baseball players. I'm a volunteer sports teacher for secondary school students in Chiang Mai. I know the kids on the baseball team and their parents well."

Regarding social interactions in the mesosystem, all three models (informal, semi-formal, and formal) depended on current activities, roles, duties, and types of relationships. Formal interactions usually took place with task groups the elderly Japanese people had to contact in the government, state enterprises, and private sectors such as the Immigration Bureau, doctors and nurses at the hospital, public health agencies, training, and seminar networks.

According to the findings, elderly Japanese people reflected another view. They showed the province of Chiang Mai as lacking a physical area with a collection of activities with the capacity or power to attract social interactions in the mesosystem between elderly Japanese people and

community members. Therefore, the scope of contact was mainly limited to residential neighborhoods or areas with activities at specific times without a specific place or area that is a center for elective activities. In the interviews, one of the elderly persons (JP3) provided data similar to others and stated, "I have no regular place for meeting Thai people. I mostly meet Thai people in the neighborhood if there is an area like a little Japanese town as a center for cultural exchange activities to share with people in the community."

However, social interactions in the mesosystem are most closely connected to the micro-system. Both systems led to learning and interactions in other environments in the exo-system and the micro-system under the environment in every system of Thai society, thereby creating social harmony. Social interactions made integration seamless without conflict and caused the elderly Japanese people a sense of belonging in the community.

Social Interactions in the Exo-System.
Social interactions take place in ordinary outside environments, most of which are physical places and environments influencing life in Chiang Mai among the elderly Japanese people, even when the elderly Japanese people had indirect interactions such as geographic and natural environments, public utility systems, transportation systems, and housing systems. According to the findings, the elderly Japanese people adapted to the exo-system well, particularly in convenient and

suitable housing. Most elderly Japanese people live in condominiums in the city centers of Chiang Mai Province.

According to the study, Chiang Mai is completely reading to provide services. Chiang Mai is not crowded and has a high level of safety with attractive geographical characteristics, convenient transportation systems, a public health system with readiness for supporting tourists, a hospital with quality, and a patient ward for Japanese people with Japanese language interpreters at all times. The economy in Chiang Mai has a low cost of living compared to Japan. According to the interviews, most elderly Japanese people came from provinces with high living costs in Japan, such as Tokyo and Osaka. Costs of housing, living, and medical treatment are high, and expenses must be planned well. The cost of living in Chiang Mai is much lower than in Japan. This low cost of living has attracted many elderly Japanese people to move to spend life after retirement in Chiang Mai with no plans to return to Japan. According to the interviews, one of the elderly persons (JP6) stated,

> I've lived in Chiang Mai for seven years. I live in Huay Kaew, which is a major economic road in Chiang Mai. Travel is convenient and I'm close to the hospital with goods and services to meet my needs. The geography is beautiful with mountains and hot springs. The cost of living in Chiang Mai is not high and I don't have to worry about whether my income will be sufficient for expenses. I can live

happily in Thailand. I'm very happy to spend my life after retirement in Chiang Mai.

Interactions in the exo-system took place in ordinary environments that were not direct communications but indirect interactions from a long stay in Chiang Mai's environmental contexts. With a more convenient environment, elderly Japanese people were happier during long stays.

Interactions in the Macro-System. According to the findings, the elderly Japanese people had interactions with Thai sociocultural environments and the local culture of Chiang Mai, such as language, religion, traditions, social norms, and laws. The elderly Japanese people were able to learn values, lifestyles, language, traditions, and local culture from the environment of Chiang Mai through interactions with community members in the micro-system and activities with groups of persons and networks in the mesosystem for five years. Social interactions created exchanges of learning about traditions and cultures. They helped increase behavioral capacity in line with local social models and cultures, such as language, values, norms, traditions, laws, rules, regulations, and manners. They also enabled elderly Japanese people to live peacefully with Thais in the community.

According to the findings, most elderly Japanese people had planned to study Thai inside and outside classrooms since when the elderly Japanese people moved to Chiang Mai for long stays. However, the elderly Japanese people provided interesting

data. Although the elderly Japanese people moved to stay in Chiang Mai for more than five years, the Thai language was vital for living in a community in the destination country. The Thai language was important in reducing barriers in daily life, communicating for daily living, building friendships, and performing activities with various community members, including online channels. The Thai language was important for continual development to create smooth communication, learning, and knowledge transfer to the community. An elderly person (JP4) stated,

I've lived in Chiang Mai for seven years. At first, I couldn't speak Thai, listen to Thai or read Thai. I had to have help from Japanese friends in the beginning. I studied Thai in a Thai language course organized by an elderly Japanese citizen's club with Thai and Japanese teachers. These days, my Thai has improved. I'm able to communicate and achieve my goals. However, I'd like to be good at the language because I want to spread knowledge online to perform an in-depth analysis of information such as information on the economy and politics.

The elderly Japanese people effectively interact with people in the community and environment in various dimensions in Chiang Mai. However, they expressed that Thai and Japanese cultures were different. Therefore, they had two stages for coping with cultural differences: In the first stage,

they provided all information from the internet to learn and understand basic Thai culture in various aspects, preparing themselves by learning the Thai language and examining the possibility of long-term stay by visiting Chiang Mai more than two times before deciding to stay long-term; the second stage was during the long stay in Chiang Mai which was found that the elderly Japanese people continued to learn the Thai language both formally and informally, and combined both Thai and Japanese cultures for living in Chiang Mai.

As for adaptation, the elderly Japanese people were not too difficult to adapt themselves to Thai culture because they were familiar with the contexts of Chiang Mai province before coming to stay long term. One important way of adaptation to different cultures was establishing regular interactions with neighbors and people in the community, adjusting their ways of thinking, being open-minded, flexible, accepting of cultural differences, and willing to be invited to attend traditional family activities of neighbors such as weddings, ordination ceremony in Buddhism, and housewarming ceremony.

The elderly Japanese people praised and admired unique characteristics of Thai culture, such as respect for the elderly and priority given to foreigners. The characteristics of Thai people create a good atmosphere for social interactions. This society is generous. People in society are ready to help each other, and Thai society is where people can depend on one another. The elderly Japanese people were

confident about receiving help in a crisis. Thai communities are warm, strong, and not selfish. The elderly Japanese people felt social harmony and no differences, describing Thai society as suitable for elderly foreigners to come on long stays. According to an interview with one of the elderly people (JP3),

> *Thais are generous and respectful of the elderly. I live alone. My Thai friends usually visit me and give me Thai food. They also invite me to go to other provinces with their families. Thais make society pleasant, and they create a good and friendly atmosphere for foreigners.*

The globalization age is when people migrate across nations to live together in societies with different and diverse ethnicities, languages, and religions as a global society. Therefore, social interactions are a basic and important behavior in living together for guests and hosts to live happily based on diversity. Moreover, regular interactions with people and the environment help to create learning, absorption of new experiences into old experiences, and understanding of the social systems and cultures of countries where people migrate to live in destination countries with balance and acceptance among community members.

DISCUSSION

The study's results revealed that the social interaction of the Japanese elderly people in the community placed a special emphasis

on the micro level, in which there were the frequency and concentration of regular interaction in the residential area. The basis of familiarity, personal relationships, and time was used to drive the social interaction process resulting in friendship, which was consistent with the concept of the interactive behavior proposed by Bronfenbrenner (2005), who described that social interaction in the micro level was a small society with a personal interaction system creating a relationship in one area. The time factor also affected social interaction, which conferred with the study of Alkhazraji (1997), stating that the length of time was a factor that influenced social interaction at the level of cultural adjustment. The interaction in the microsystem focused on face-to-face communication, similar to foreign migrants in other regions around the world. Lustig and Koester (1993) demonstrated that most migrants always applied intercultural communication processes by focusing on face-to-face communication with people from different cultures. They mainly communicated using the host's language to communicate and interact with each other. Wiemann and Backlund (1980) stated that communication was the ability to create social interaction because the level of interpersonal communication was linked to social processes that were a method or procedure that humans used for management, creating stability, and improving their lifestyle in the destination country.

Concerning the macro system, the Japanese elderly reflected the identity of individuals in a multicultural society whose essential characteristic was the coexistence of people in a diverse society with harmony through regularly participating in joint activities with people in Chiang Mai at various levels, including individuality, family, and province resulting in having good friendships and helping each other. Additionally, one of the most effective ways the Japanese elderly used as a tool for cultural adjustment was learning the Thai language because they perceived the language as an important medium of communication that helped them to reduce the barrier to long-term stay in Chiang Mai. From the point of view of the elderly Japanese, Thailand is a dependable, caring, and friendly society, not a centralized society. Additionally, Thai culture respects the elderly and treats foreigners as important guests. According to the study, the results were consistent with Delahoutre (2022) stated that Thailand was the world's 5th most desirable city for retirement in the world because Thailand was a friendly country in which the elderly foreigners had no difficulty in adjustability and had cultural heritages of valuable materials and non-materials. In addition, Thai people were friendly and suitable for living and long-term stay. Therefore, the study's results reflected that Thai society still maintained a cultural context that emphasizes interdependence, social harmony, acceptance, respect, and enjoyment (Chanchalor et al., 2017; Hongsaranakorn, 2015; Ingersoll-Dayton et al., 2001). Furthermore, Asian society is considered a collective society focusing

on social harmony and relationship. The Japanese elderly, therefore, could successfully adapt to living with the Thai people in society by having a variety of cultures.

CONCLUSION

The interactions between the elderly Japanese people and community members were divided as follows: 1) In the micro-system, neighborhood interactions mainly used conversations in the Thai language, time for building familiarity, and lacked only specific physical space with the capacity to attract and create social interactions, in which the elderly Japanese people regularly engaged in social interactions with people in the community through daily life and social activities in terms of face-to-face communication, leading to learning and understanding of Thai social and cultural systems, which resulted in an understanding of culture, laws, regulations, norms, and values of the community enabling harmonious coexistence in society; 2) In the mesosystem, interactions were through social activities and networks with recommendations from Thai friends in the microsystem leading to participating in various group activities in the community and other organizations. Three types of interactions in the mesosystem included informal interaction, semi-formal interaction, and formal interaction, depending on the current activities and roles in the group with which they were interacting. The mesosystem was closely related to micro-systems; 3) In the

exo-system, the environment did not have direct interactions and facilitated life with quality and safety. Chiang Mai is a city with various services and accommodations. The city is not crowded, has high security and beautiful landscape, convenient systems of transportation utilities, accommodation, and public health available to facilitate tourists for staying long term. In addition, the low cost of living has attracted more and more Japanese elderly to immigrate for stay long-term; and 4) In the macro-system, the elderly Japanese system had regular social interactions with close friends in the microsystem and social networks in the mesosystem, causing elderly Japanese people to learn Thai culture, norms, and values. Elderly Japanese people understood and respected cultural differences, enabling elderly Japanese to be in harmony in Thai society.

Recommendations

Based on the findings, this study offers the following recommendations: (1) a process should be created to use the capacity of elderly Japanese people to create activities that link people in the community as a guideline for creating social interactions, and (2) specific areas or neighborhoods should be developed to organize cultural exchange activities as an important instrument leading to social interactions between elderly Japanese people and local Thais. For the benefit of potential development and the quality of life of Japanese elderly tourists staying for a long term in Thailand, further research

should (1) study through comparative research the lifestyle characteristics of the Japanese elderly staying for a long term in the context of other provinces in Thailand, (2) study problems, obstacles, and the need for the assistance of the Japanese elderly who have entered a long-term stay in the first 1–2 years, and (3) study the model of cooperation policy between the Thai and Japanese governments to exchange knowledge on social and cultural aspects, health technology, and emerging diseases.

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SOCIAL SCIENCES & HUMANITIES

Fuelling Grammar Mastery and 21st Century Skills Through Project-Based Learning

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ABSTRACT

Project-based learning (PBL) approach has been adopted in the classroom to engage students actively in the learning process and to allow them to master content knowledge and useful skills. This mixed-method study investigates the perceived benefits and challenges of using the PBL method in developing and enhancing undergraduates' grammar mastery and 21st-century learning skills. Thirty-five ESL undergraduates from an intact grammar class participated in the study. A questionnaire was administered to elicit the participants' views on using the PBL approach to develop grammar, collaboration, and speaking skills. In addition, group discussions on Google Docs and reflective journals were collected to obtain insights into their learning processes. The participants preferred the PBL approach, which was more effective, invigorating, and empowering than traditional lecture-style teaching. Although it was time-consuming, challenging, and rigorous, the participants demonstrated their competencies of 21st-century learning skills at the end of the project. PBL maximised language use, increased higher-order thinking, unleashed creativity, and honed ICT skills. These skills are essential to equip and prepare them to be employable and future-ready for workplace demands.

Keywords: 21st-century learning skills, ESL learners, games, grammar, project-based learning

INTRODUCTION

Education has transformed from traditional to more contemporary teaching approaches in the present technological era. Conventional teacher-centred approaches were gradually replaced with more learner-centred approaches to develop 21st-

century skills for learning, literacy, and life skills. The 21st-century skills include communication, collaboration, critical thinking, creativity, problem-solving, ICT literacy, and social skills (Ahonen & Kinnunen, 2015). Education policy is embedding 21st-century skills in the curricula, alternative assessment, as well as innovative teaching and learning methods to train learners to function effectively in the knowledge society as seen in countries such as Australia, China, Hong Kong, Republic of Korea, Japan, and Malaysia (Care, 2018).

Even with the exposure and training in 21st-century skills during tertiary education, it has been reported that graduates lack proficiency in higher-order thinking, soft skills, and communication skills, which are important to enhance graduates' employability (Herdlein et al., 2010; Pillai et al., 2012; Ting et al., 2017). In addition, a person with strong communication ability also tends to have stronger interpersonal skills and higher potential to fulfil the job's demands (Azmi et al., 2018; Noah & Abdul Aziz, 2020; Mishra & Mishra, 2020).

Furthermore, employers value those who can speak and write using appropriate grammar and sentence structures. Soft skills, such as communication, teamwork, interpersonal skills, management skills, creativity, thinking skills, leadership, problem-solving, and lifelong learning are attributes that employers seek (Fahimirad et al., 2019; Tang, 2019). However, graduates do not possess sufficient soft skills, making it difficult to recruit and meet the profession's demands (Gruzdev et al., 2018).

Herdlein et al. (2010) state that clear communication is attributed to correct grammar. Learning the grammar of a language is essential to acquire the ability to produce grammatical expressions in the language (Corder, 1988). For many language instructors, the importance of teaching grammar is to help learners internalise the rules or structures of language to communicate better in writing and speaking (Ellis, 2002).

In the past, grammar was taught through explicit or implicit instruction. Al-Kalbany's (2004) survey showed that preparatory and secondary school EFL teachers favoured implicit instruction while the students preferred explicit instruction. Borg and Burns (2008), who investigated the beliefs and practices of 176 English language teachers from Australia, New Zealand, Europe, and Asia, found that the teachers embedded grammar in meaning-oriented activities whereby learners had opportunities to practise and use grammar.

In a study conducted on 44 Turkish pre-service teachers of English at a state university, Kaçar and Zengin (2013) found that the teachers adopted a holistic perspective towards teaching grammar by incorporating explicit and implicit grammar instructions. Fayyaz and Omar (2014) carried out a case study on a non-native English-speaking language teacher in East Malaysia to examine the contextual situatedness of the teacher's beliefs and actual practices on form-focused instruction. The learning culture of memorisation, the teaching of discrete grammar items, institutional goals,

and past training influenced teachers' beliefs about explicit grammar knowledge. Basoz (2014) views that when teaching English, grammar should be included sufficiently and connected with actual language use. Emphasis should be placed on real-life-oriented activities instead of applying superficial practices to teach grammar.

There is no single ideal approach which can be applied to all types of learners across various contexts. The way teachers teach grammar is strongly influenced by their views about language learning, their belief about their student's needs and wants, and other contextual factors such as time (Farrell & Lim, 2005). Widodo (2006) proposes that teachers should redesign and develop materials from grammar course books to teach the rules without separating them from the context of communicative purposes. Creative and innovative methods to teach grammar are necessary.

Project-Based Learning

The Buck Institute of Education (2003) defines Project-Based Learning (PBL) as a "systematic teaching method that engages students in learning knowledge and skills through an extended inquiry process structured around complex, authentic questions and carefully designed products and tasks" (p. 4). For Patton (2012), PBL refers to students designing, planning, and carrying out an extended project that produces a publicity-exhibited output such as a product, publication, or presentation.

This study adopted Larmer and Mergendoller's (2015) Gold Standard PBL model as the theoretical framework, which was based on constructivist theory. The model comprises seven essential project design elements (Figure 1).

The elements include framing a problem or question that directs the project. Sustained inquiry involves learners engaging in a rigorous process of finding resources and applying information. The project involves real-world context, and the learners have a voice and choice over how they work and what they create. In addition, they also reflect on their learning process and gauge the effectiveness of the project. Learners also receive and give feedback to improve their end product. Finally, they make their product public through sharing or presentation.

Project-based learning empowers learners to understand a topic better and increases motivation (Bell, 2010). It also helps them gain knowledge and skills when involved in various activities in different
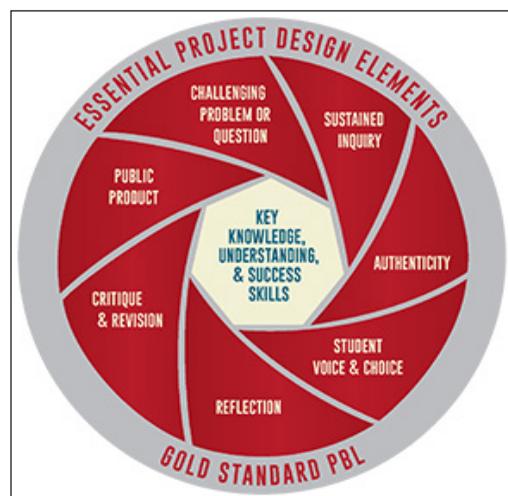
Figure 1. Essential project design elements (Larmer & Mergendoller, 2015)

domains (Tamim & Grant, 2013). Well-designed projects incorporate technology as part of the process (Richard, 2005). Thus, PBL is well-suited for teaching digital literacy and 21st-century skills (Binkley et al., 2012; Larmer & Mergendoller, 2010; Sumarni, 2015). Furthermore, PBL includes group process skills. Learners are engaged in teams and develop proficiency in the following skills: comprehension, research and writing, questioning, collaborative learning, resourcing, presentation tools, analysis, communication, problem-solving and critical thinking, and task and self-management skills (Klein et al., 2009). Project-based learning can be characterised as student-centred, involving collaborative learning, which leads to authentic integration of language skills and processing of information (Poonpon, 2011). Learners' engagement in social interactions with group members and co-construct knowledge together makes learning more effective (Vygotsky, 1978).

The effectiveness of research on PBL has been investigated in various English language contexts. Poonpon (2011) conducted a study with 47 Information Science undergraduates to identify how interdisciplinary project-based learning enhanced language skills. The participants' writing skills were incredibly enhanced throughout the project-based learning, and their speaking skills were also developed. Authentic integration of reading, writing, speaking skills, and information processing from various sources improved their English in real-life contexts. Subsequent studies also reported similar findings concerning improvement in speaking and writing skills when project-based learning was used (see Dewi, 2016; Ekawati, 2018; Nurhayati, 2018; Yang & Puakpong, 2016).

Mali (2016a) designed classroom projects in Creative Writing (CW) and Second Language Acquisition (SLA) classes. He found a high level of student participation and opportunities to collaborate, articulate thoughts, negotiate and value different perspectives. Mali's (2016b) phenomenology study also revealed that constructive communication in sharing resources and direction to take, seeking lecturers' feedback, helping members, and having a sense of responsibility were important to complete the project.

Sukerti and Susana (2019) investigated the effect of PBL on the speaking achievement of 19 electrical engineering undergraduates in a higher vocational institution. There was a significant effect of PBL on their presentation skills in English. The participants improved their communication, soft skills, creativity, grammar, vocabulary, and specialised knowledge when designing and presenting their infographic project.

To examine the use of PBL as a teaching strategy to improve oral communicative competence, Abu Bakar et al. (2019) conducted a quasi-experimental study with 44 low-proficiency students in a technical college. The experimental group outperformed the control group in speaking and listening post-tests. There were improvements in language skills, soft skills, motivation, and attitudes.

In the Thai context, Nanni and Pusey (2020) explored the effectiveness of PBL in developing digital literacy skills with 33 intermediate-level undergraduates. The media project required the undergraduates to write and record an informative news video, interview an expert, and compile all the materials into 6-minute news. The participants improved their technology skills by finding, sharing, and creating content using collaborative online tools and editing videos.

Even though research on PBL has been conducted on various language skills and in different contexts, few studies have investigated the use of the PBL method in developing grammar. This study aimed to add to the body of knowledge by obtaining insights into ESL learners' grammar mastery and the development of 21st-century learning skills through PBL.

The following research questions guided the study.

1. What are the perceived benefits and challenges of using PBL in a grammar course?
2. How does PBL enhance students' grammar mastery and 21st-century learning skills?

METHODS

Participants

The participants were first-semester Bachelor of Arts (English) undergraduates who were enrolled in the Grammar for Communicative Purposes course at a public university in Malaysia. They were local first-year participants, consisting of 29 females and six males in an intact class. Their age ranged from 19 to 21 years old. These ESL participants came from various educational backgrounds (Table 1).

All the participants sat for the Malaysian University English Test (MUET), which measures students' proficiency level as a prerequisite for admission and placement purposes at a local university. Three participants obtained Band 3 (modest level), almost two-thirds of the participants obtained Band 4 (competent level), and eight obtained Band 5 (good user).

The participants were instructed to work in groups of five. They self-selected their group members based on the convenience of meeting. Many were unfamiliar with one another. Each group worked on a project, which entailed creating an authentic grammar game based on one aspect of grammar: parts of speech, present tense, past tense, types of sentences, and active/passive voice. These were covered in the course syllabus of the university. The project's aims were twofold: (1) to introduce an alternative method to learn grammar, and (2) to provide a stimulating, challenging task for the participants to apply their knowledge in game creation. The grammar games targeted for undergraduates should be fun, engaging, and communicative. It could be in the form of a board game, a card game, or an online game. No training was provided for the game development prior to the group project to give the participants opportunities to explore ideas and unleash their creativity. The project was graded at 30% of the course assessment.

Table 1
Participants' profile

Gender	Age	MUET result	Fields of studies (n)
Male = 6	19 = 13	Band 3 = 3	Foundation/Diploma in TESL = 12
Female =29	20 = 12	Band 4 = 24	Foundation/Diploma in Agricultural Science = 5
	21 = 10	Band 5 = 8	
			Matriculation = 6
			Foundation in Law = 2
			Form 6 = 10
			(High school)

Data Collection

The participants were informed about the nature of the research and signed a written consent before the research commenced. A mixed-method data collection was used. Qualitative data were obtained from group discussions on Google Docs. The participants were instructed to plan, upload materials, and collaborate using the online tool. It was carried out synchronously or asynchronously after class hours over 12 weeks.

The instructor demonstrated how to create an online account on Google Docs and utilise the tool. During face-to-face class time, grammar input was generally provided and discussed. The instructor also monitored their project by giving feedback and constructive comments throughout the stages of developing game items and game design. The PBL activities entailed the following stages:

1. Researching and resourcing appropriate materials
2. Developing game items
3. Designing game template
4. Evaluating the quality of the game design and items
5. Pilot-testing the game
6. Revising
7. Showcasing

The participants also wrote five reflections fortnightly to record their experiences about the benefits and drawbacks of the project-based learning approach, challenges faced, skills developed, and positive and negative experiences.

Various data collection methods were used at multiple points in time, as described earlier, to ensure the study's validity in terms of trustworthiness. In addition, participation validation was also conducted to elicit further information about their fortnightly reflections. Finally, individuals were also consulted to confirm the interpretation of their reflections.

For quantitative data, a 6-point Likert scale questionnaire was administered at the end of the study to elicit the participants' views on the project-based learning approach to develop grammar, collaboration, and speaking ability. The questionnaire was adapted from two studies. Section A elicited personal information about the participant's gender and age. Section B on project-based learning and Section C on collaboration

was adapted from Musa et al.'s (2011) study. Section D on speaking ability was adapted from Yang and Puakpong's (2016) study. A 6-point Likert scale ranged from 1 = strongly disagree to 6 = strongly agree.

Descriptive statistics for the questionnaire were calculated. The Cronbach's alpha reliability coefficient was calculated as .926, considered to have a very good internal consistency (George & Malley, 2003).

RESULTS AND DISCUSSION

The results derived from the questionnaire answered the research question regarding the benefits and challenges of using project-based learning. Table 2 shows the mean scores of the participants' responses regarding the project-based learning method.

The results revealed several major benefits. One obvious benefit was the opportunity to actively search for information and apply the knowledge in various situations. Items 3, 4 and 5 "Project work creates opportunities for me to make active research to enable me to learn (M=5.26), apply information (M= 5.23) and represent knowledge in a variety of ways (M=5.34)" show very high mean scores. Besides the opportunity for active research, the participants also responded that the project-based learning was fun (Item 7) and motivating (Item 8). The mean scores are also high (M= 5.11) and (M=4.94). These findings correspond with Abu Bakar

Table 2

Project-based learning

Item		Mean	SD
1.	Doing project work in a group is better than working alone.	4.94	0.84
2.	I benefited from the input of other group members.	5.06	0.80
3.	Project work does not take too much of my time.	3.23	1.06
4.	Project work creates opportunities for me to make active research that enable me to learn grammar in a variety of ways.	5.26	0.66
5.	Project work creates opportunities for me to make active research that enable me to apply information in a variety of ways.	5.23	0.60
6.	Project work creates opportunities for me to make active research that enable me to represent my knowledge in a variety of ways.	5.34	0.54
7.	I find project work fun because I could play an active role during the entire process.	5.11	0.63
8.	I find project work motivating because I could play an active role during the entire process.	4.89	0.58
9.	I find project work challenging because I have to play an active role during the entire process.	4.57	1.20
10.	Project work helps me improve my English.	5.49	0.61
11.	I like project-based learning.	4.89	0.83
12.	The amount of work in doing the project can be handled.	4.63	0.84
13.	I obtained a lot of new knowledge while doing the project.	5.37	0.65
14.	Project work helps me to find new solutions to problems.	5.06	0.84

et al.'s study (2019), where students found the project-based activities enjoyable and motivating. The students were eager to participate and had positive attitudes towards the tasks.

Other benefits included improving their language proficiency, obtaining new knowledge, and developing problem-solving skills. The results display very high means for Item 10 (M=5.49), Item 13 (M=5.37) and Item 14 (M=5.06). In addition, the participants responded in strong agreement for Item 1 that doing project work is better than working alone (M=4.94), and in Item 11, "I like project-based learning" (M=4.89).

Despite the benefits, there were two drawbacks to project-based learning. First, the participants felt that the project work was time-consuming and challenging. These responses are shown in Item 3 (M=3.23) and Item 9 (M=4.57). Although the mean for item 3 is considerably average on a 6-point Likert scale, the participants' reflections showed otherwise. More than half of the participants mentioned that the project was time-consuming as they had to arrange a suitable meeting time. Moreover, it was quite demanding to be actively engaged and involved in the project for 12 weeks. Nonetheless, the participants responded that they could handle the amount of work doing the project (Item 12, M=4.63). Other challenges included difficulties in coordinating synchronous meetings, lack of expertise in designing an online game, and flaws in the grammar game, among others. The challenges were revealed in the reflections below:

The drawback I think, is Google Docs. It is quite hard to use because we have to be online at the same time. There is a time when someone is busy, and not all can be online and it takes time to wait for others. (Yaya)

To make a grammar game is quite challenging since you want players to gain some input and knowledge from your game. The first thing that I have to do is to widen my knowledge, and understanding of the topics given. (Mia)

We were actually really frustrated that we couldn't do an online game because we really wanted to make one because all of us had never done it before. For the players to create sentences in an online game is kind of impossible because it is impossible to create all possible sentences as answers in the answer sheet. So, when we knew that it just couldn't work, it was really frustrating to come up with a new concept, new game plan, new rules and so on. But everyone cooperated, and we didn't give up. Perseverance was the key during this process. (Clara)

The drawback is that not every game will be perfect. Sometimes glitches can occur when it is being played. Everyone in the team must give a solid commitment to creating

the game, or else PBL will not succeed. (Travis)

In Nanni and Pusey's (2020) study, their students invested much time finding, sharing, and creating content using technology to develop a news piece. The project duration was long and tedious, but it positively influenced the acquisition of technology, study, and language skills. Similarly, in this study, the participants spent time creating the game and overcame challenges by giving full commitment, changing their original plan, and coming up with alternative solutions. As a result, they completed the project with a satisfying end product while acquiring essential soft skills during the process (Fahimirad et al., 2019).

Table 3 shows the results regarding collaboration. The participants responded that they learned how to brainstorm ideas (Item 11, M=5.31), gain confidence in giving suggestions freely (Item 12, M=5.17), ask appropriate questions (Item 9, M=5.20) and

respond appropriately to group members (Item 10, M=5.23). The result in Item 1 shows that participants learn to make decisions based on the discussion with the group members (M=5.37).

In addition, the participants also developed teamwork by sharing responsibilities and working amicably with peers from different ethnicities. It is evident in the high mean scores in Item 4 (M= 5.06), Item 5 (M=5.17), and Item 7 (M=5.49). In terms of group dynamics, the results were positive. The participants responded that they become more aware of the needs of others during group work (Item 2, M=5.26), more sensitive to the needs of others (Item 3, M=5.06) and listen actively to group members (Item 8, M=5.34). They also learned to manage conflicts within the group (Item 6, M=5.03). This indicates that project-based learning benefits the participants by providing an avenue to learn to collaborate with others (Musa et al., 2012).

Table 3
Collaboration

Item		Mean	SD
1.	I learn to make decisions based on discussion with my group members.	5.37	0.55
2.	I become more aware of the needs of others during group work.	5.26	0.66
3.	I become more sensitive to the needs of others during group work.	5.06	0.80
4.	I learn to work successfully with students from different cultural groups.	5.06	0.94
5.	I learn to delegate responsibilities to my group members.	5.17	0.75
6.	I learn to manage conflicts within my groups.	5.03	0.71
7.	I learn that good teamwork contributes to a successful outcome of the project.	5.49	0.78
8.	I learn how to listen actively to my group members.	5.34	0.59
9.	I learn how to ask appropriate questions among group members.	5.20	0.63
10.	I learn how to respond appropriately to my group members.	5.23	0.60
11.	I learn how to brainstorm ideas with my group members.	5.31	0.80
12.	I am confident in giving suggestions freely among group members.	5.17	0.79

Table 4 shows the improvement in the participants' speaking ability. The participants perceived that their pronunciation has improved (Item 2, M=5.03), grammar is better (Item 3, M=5.03), and speaking is clearer (Item 9, M=5.09). They also felt they could speak fluently after PoBL (Item 1, M=4.77). Notably, the confidence level of the participants increases (Item 7, M=5.23). The results show that they want more opportunities to practise speaking (Item 8, M=5.40) and are more willing to speak English after PoBL (Item 6, M=5.20). In terms of sentence structure, the participants also indicated that they use words more appropriately in speaking after PoBL (Item 4, M=5.03).

These results concur with the findings of Dewi (2016), whereby her students' confidence level and motivation increased because of the opportunities to use English and to engage in purposeful interactions with group members in a natural environment.

In the following section, in-depth insights into the participants' learning processes were derived from group discussions in Google Docs to answer the second research question. Data from two groups were selected to illustrate what transpired during the various stages. Group 1 was chosen because it represented the typical way other groups worked. Like the other groups, they always came prepared for group discussions, committed to fulfilling the weekly tasks, and worked amicably with one another. Group 5 was unique as it was the only group that created an online game and consisted of all male participants. Views from other participants' verbatim reflective journal entries were also included. Pseudonyms were used for the participants.

Table 5 summarises the individual group's game objectives, the grammar topic, and the game design.

The findings on how PBL enhanced students' grammar mastery will be thematically presented first to answer the second research question, followed by the development of 21st-century learning skills.

(a) Agents of Grammar Learning

During research and resourcing, the groups surveyed games available in the market or on the internet. They were instructed to

Table 4
Speaking abilities

Item		Mean	SD
1.	I can speak fluently after PoBL.	4.77	0.65
2.	My pronunciation has improved.	5.03	0.62
3.	My grammar in speaking is better.	5.03	0.66
4.	I use words more appropriately in speaking after PoBL.	5.03	0.66
5.	I can speak longer sentences than before.	5.11	0.76
6.	I am more willing to speak English after PoBL.	5.20	0.80
7.	I am more confident to speak in front of the class.	5.23	0.73
8.	I want more opportunities to practise my speaking.	5.40	0.65
9.	My speaking is clearer after PoBL.	5.09	0.66

Table 5
Gameplay design of groups

Group	Game Objective	Grammar topic	Type of game
1	To test understanding of parts of speech	Nouns, verbs, adjectives, and adverbs	Card and board game
2	To identify and create different sentence types	Sentence types (simple, compound, complex and compound-complex sentences)	Spinning wheel and card game
3	To master nouns and verbs	Noun and verb forms	Card game
4	To create sentences in the present tense based on card pictures	Present tense	Card and board game
5	To test understanding of correct past tense use	Past tense	Online game
6	To identify and construct sentences	Sentence types (simple, compound, and complex)	Card and board game
7	To identify and construct active or passive sentences correctly	Active and passive	Card and board game

search for educational or language games in card, board, or online games. Video game was excluded as it would be beyond the participants' ability to create this game without enlisting a game developer's help. Concurrently, they searched for materials and resources for their grammar game.

Excerpt 1. Exceprt 1 (Figures 2, 3, and 4) illustrates Group 1's planning and execution of their plans. They discussed and agreed that every member should search for information on four parts of speech to deepen their understanding before constructing their grammar items.

MC: Hey everyone! Let's discuss on the content for our grammar game! Since we have decided to go for part of speech, which aspects are we going to use?

Y: Hi! Maybe we can use nouns, verbs and adjectives?

Mia: Don't forget about the adverb.

MC: Yeah sounds good! I think that is enough for our game.

Mia: So, how are we going to do it? Should we all look for the same things or everyone focus on one aspect?

Y: Maybe everyone can make 10 questions for each aspect. So everyone will get to study each aspect rather than just mastering one aspect.

MC: Yes! I am totally agree with Y. From that way, we can gave a better understanding on the implementation of the four aspects of part of speech in grammar.

Mia: Sounds good. So, what are we waiting for? Let's start.

MC: Okay, so 40 questions per person, 10 questions of each aspect of noun, verb, adjective and adverb. Am I right?

Mia: Yes you are! I can't wait anymore. This a very interesting thing to do. We will gain new knowledge and have fun at the same time.

Figure 2. Planning

By allowing the participants to have a voice and to make choices, they became agents of their learning. It created excitement and motivation to embark on the task to gain new knowledge and to have fun, too (Figure 2).

While researching, Ems discovered that a word could be used for different parts of speech. She shared the explanations and examples of the word "that," which could be used as an adverb, a pronoun, or an adjective (Figure 3).

The members gained deeper grammar knowledge through their sustained inquiry on various websites. As a result, they became more aware of the different forms of nouns, verbs, adjectives, and adverbs, which they did not know before, especially those from

Figure 3. Researching

Figure 4. Resourcing

science backgrounds. Ems suggested using this newfound knowledge in their game items to test the players' understanding (Figure 4). It would raise awareness of parts of speech that were less commonly used or known and allow them to master their usage correctly. The reflections below illustrate the participants' experiences.

> *It made me more responsible, and I discovered I could actually learn more by researching. Before this, I didn't know there were many types of nouns, like abstract and concrete nouns, but now I know there are many types of nouns, verbs, and even adjectives. I gain more rather than the traditional way of learning.* (Kyra)

> *We worked on adverbs, adjectives, and nouns, so we were exposed to a wide spectrum of adverbs, verbs, and nouns. As a student who is learning English as a second language, it is important for me to know various types of grammar which can be used and maybe can help other people to learn grammar in a very good, creative, and fun way. Firstly, we did research on a book. We tried to list out every single type of noun that exist, not just common or proper nouns. We tried to find out whether people are aware of different types of nouns that are not very common or adverbs, or adjectives. That is how we applied it to the game.* (Bubble)

> *Actually, grammar is not a very easy subject to score, so I believe that not only reading books can help us but creating games can help us to understand better and learn in a fun way.* (Belle)

(b) An Alternative Method to Master Grammar

Project-based learning provided an alternative way for the participants to learn and retain their grammar knowledge. Throughout each stage, group members engaged actively with one another as they deliberated over ideas and suggestions given by others. They were using language in real-life contexts. During the discussions, they also corrected grammar mistakes made by their members. The less proficient ones learned how to use grammar appropriately from their more capable peers. PBL provided opportunities for engaging in discussions and joint decision-making.

The following excerpt was taken from Group 5, which comprised all males, during the game construction stage. The group decided on their game design after deliberating on a few options.

Excerpt 2. Excerpt 2 (Figures 5 and 6) shows that doing a spinning wheel or dungeon game was not appealing to Travis. Instead, he wanted to create something different that would excite players by adding a twist to the existing Jeopardy game. After Travis uploaded a PowerPoint template from the Internet and his modified version to explain how the online game would work, it sparked more ideas from the others.
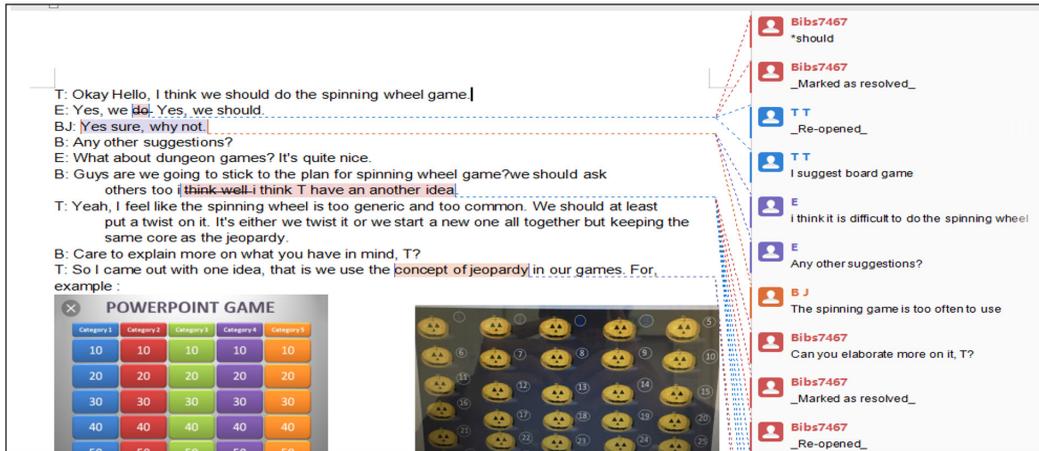
Figure 5. Designing game template

Figure 6. Deciding on game rules and title

Deliberation was also seen in the chat box. BJ liked the template but suggested changing the pumpkin image to a skeleton head. However, Bibs tactfully rejected the idea and politely responded that it might not be appropriate for all ages (Figure 6). He knew the importance of collegiality in group work. They moved from deciding on the type of game to naming it by applying the parts of speech they had learned. Travis suggested "Pumpkin of Luck," which fitted nicely with the image. The smooth game design process was attributed to mutual choices and joint decision-making.

Results from the questionnaire and analysis of the reflections showed that all the participants strongly preferred project-based learning to learn grammar. It offered an interesting, invigorating way of learning and better retention. Communication was a central part of the project to reach a consensus. The multiple rounds of discussions with members with different proficiency levels were beneficial

in improving their proficiency, accuracy, language expressions, and vocabulary.

PBL also heightened the awareness of what they gained and how they learned best. Bibs, Fatih, Bubble, and Rain highly recommended it.

I believe PBL is very innovative as everyone has different levels of mastery in English. It enables different people to know and realise their strengths and weaknesses. Games based on grammar can help us learn in a fun way, and it is refreshing compared to rote learning. People can have fun and be competitive in the pursuit of a better command of English. Being able to integrate this way of learning is quintessential to keep the students interested and fuelling the desire to learn more. (Bibs)

We tend to learn faster when we are forced to use the information often and in real-world situations. The specific things we have in the games help people to remember what they learn throughout the game. (Fatih)

We grew up in a different backgrounds. Two from my team are Indians, and they would talk in English with their parents at home, unlike me. During the discussion, we learned some new words that can describe certain things. I get to learn and widen my vocabulary. (Bubble)

Before this, I never really paid attention to what sentence types were. I only studied what sentence types were whenever there was an upcoming exam. I actually researched the differences between the sentence types and how you can properly differentiate them. For me, my way of learning is to talk with others, so by doing the project, we were able to discuss and learn which answers were correct and which weren't. It was a much better way for me to learn. (Rain)

These findings resonate with Nanni and Pusey's (2020) study, whereby students became more independent as they researched, sought information, and presented information creatively in their projects. They had the opportunity to engage and communicate in authentic real-life contexts. Through constant feedback from group members, the participants' language skills greatly improved. Elements of fun and motivation are similar to Abu Bakar et al.'s (2019) finding because the learners also preferred a less rigid way of learning English through the project. Likewise, the experiential and hands-on creation of a grammar game help to facilitate learning and the participants' mastery of grammar innovatively (Barak & Yuan, 2021).

(c) Development of Higher-Order Thinking Through Peer Learning

The project-based learning also increased the use of higher-order thinking. Collective evaluation of the game items enabled the

participants to check their understanding deeper and reinforce what they had learned.

Excerpt 3. Excerpt 3 (Figures 7 and 8) shows Group 1 scrutinising their game items closely to check if they were well-constructed. They identified several items the members still struggled to comprehend, particularly "adverbs" (Figure 7).

Mia and MC explained the functions of an adverb, adjective, and verb and provided simple examples to help others understand the concept better. Peer learning occurred as they explicated grammar rules and clarified concepts at a level which was easy for their peers to grasp. They simultaneously learned and contributed to the learning of group members without intervention from the instructor (Boud et al., 2001; Keppell et al., 2006; Zher et al., 2016). Learning anxiety was reduced as there was no fear of making mistakes or being monitored. They felt responsible for their own and team members' learning.

The participants attempted to properly comprehend grammar rules, correct any misconceptions or mistakes, and apply what they learned in their game creation. In addition, evaluating and reasoning out the correct answers for the confusing items reinforced their understanding of the accurate use of a particular grammar form (Figure 8). It is evident in the reflections below:

> *I am really weak in grammar before this, and I don't know how to really study grammar. Because I need to create the game, so I need to learn grammar properly; otherwise, I will transfer the wrong information. There will be some points that I missed out on and something that I am confused. We really went through them.* (Ems)

> *Throughout my game plan with my group, we will go through every*

14. Choose the answer that names the part of speech of the capitalized word in the following sentence: Students had VERY poor grades for this year SPM examination. (6)
   A. pronoun
   B. adverb ("very" modifies the adjective "poor")
   C. adjective

Is it confusing? If it is, how would you solve the problem of this question?

MC: Hmmm yeah quite confusing and this is my question. From my own understanding, "very" is an adverb because it tells more on the adjective which is "poor". Right?

Mia : Very is considered as an adverb if it is use to describe a verb, an adjective or another adverb. For example, "She worked very quickly" —> very is an adverb because it modifies another adverb (quickly)

MC: Yes, great explanation!

Ems: Marble, perhaps you could explain by giving us some example for our better understanding.

MC: Oh, okay maybe I should provide some examples for you to have a clearer view. The adverb functions to modify any noun, verb, adjective and also another adverb. The word "very" is telling the degree of the poor. For example, the adjective "fast". Run is just a normal verb, but if we add the adverb "very" in front of "fast", it shows the degree of the adjective.

Figure 7. Evaluating game items

Figure 8. Peer learning

question and look for errors or improvements before applying them in the game. I have discussed a lot of concepts, methods, and rules of the games with my group, but then I have to rethink and modify them to be better. (MC)

During the making of the game, the questions need to be varied, so I need to know the correct usage of verbs, adverbs, pronouns, and nouns so that the statements, questions, and answers are grammatically correct. I never heard about the degree of adverb during my high school. (Mia)

We get to test our understanding and our knowledge of the topics that we have learned. I also think that students get to improve their grammar skills only if they communicate more to correct their mistakes. (Yul)

(d) Learning Through Feedback and Revision

Pilot testing of the grammar games was conducted to provide feedback or comments to improve the game. Each group was given approximately 10 to 15 minutes to try their game in front of the class. Different students would volunteer to be the players. The instructor and classmates gave comments to improve the gameplay. Besides, the players also received immediate feedback and explanation for their incorrect answers, thus, reinforcing grammar mastery. Clara said:

As a student, my grammar class was always uninteresting because the teacher mostly did the talking, and students usually didn't even pay attention. With project-based learning, students have fun playing grammar games. They will try to make as few grammatical errors as possible because they will get competitive with other players.

While playing the games, students will learn grammar rules through their mistakes because usually, they get an explanation of the grammar rules if they make an error.

Excerpt 4. Excerpt 4 shows the constructive comments and feedback that Group 1 received after piloting their game (Figure 9).

MC was greatly disappointed that their game session did not turn out as planned (Figure 9). However, the setback did not deter them. On the contrary, they were open to critique and committed to solving the problems.

Excerpt 5. Excerpt 5 shows how they revised their game rules (Figures 10 and 11).

The group scrutinised the game rules to make the instructions clear and precise. Sentence structures were revised for clarity and to avoid confusion. Other aspects were also addressed to ensure the smooth running of the game (Figure 11).

MC: We have finished our pilot test today! But what a bummer because it didn't go well as we expected :(

J : Yes we did it ! But yeah not everything went as planned. We need to improve some things with our board game. It is okay we can do it together.

Mia : Thanks God! Finally, we finished piloting our game :) It's okay MC, fall 7 times, stand up 8. There's always a chance for us to improve.

MC: Thanks Mia, it's so helpful and soothing to my heart.

Ems: OH YES. I am so nervous today. It's ok, we could modify it according to the feedback.

J: Keep the positive vibes guys ~

Y: Yup we must improve our game and make it even better for the final product. We can do this, guys!

Ems: To sum up,
1. We need to shorten the duration for the game.
2. We have too many surprise box.
3. The time taken for each player to answer the question.
4. Nobody is checking the answer.
5. The instruction is too long and not clear enough.

Let's start with the first problem. How would us improve the game?

Figure 9. Pilot-testing game

Ems : Hi guys, this is our Rules and Regulation. Take a look.

MC: Thanks Ems! Let me go through it first.

MIA: Hmmm Ems, don't you think we should limit our players? The first rule seems neglecting that. How about we state the maximum players for the game so that there will be no hassle in the future? |

Y: I agree with Mia. The players will get confused with the amount of players and they will just set the players as they like. We don't want that to happen.

Ems: Alright, then I will add the word **maximum** to it.
1. This game is designed for maximum 7 players, 6 players will play the game while one person (the gamemaster) will check the answers on the answer booklet for the players.

What do you guys think now? It this ok?

MC: Yes! Cool! That is more precise.

Ems: I have a concern, guys.

Each player will get 5 pieces of question cards at the beginning.

MC: Ohh! Hmm who will distribute the cards? Should we elect someone for that?

Figure 10. Revising

Figure 11. Revising (continue)

The participants co-constructed meaning together as they revised the rules (Pathinathan & Yong, 2012; Vygotsky, 1978). Input from everyone during the revision process also helped in crafting better sentences. As Bibs mentioned:

The process of creating a game can vastly improve our grammar skills. The members can criticise and correct each other. Different individuals perform better in different tasks, and each of the group members will complement each other. We are to question every aspect of the game, be it semantically or syntactically. It sharpens our minds and broadens our understanding of the English language. Our technical skills improved as well as our ability to construct more advanced sentences or phrases.

Besides improving their grammar, the participants also developed 21st-century learning skills at various stages of the PBL project. The 21st-century skills, such as communication, collaboration, and higher-order thinking, were discussed in the earlier section as they were interrelated. This section will present other soft skills and ICT literacy, which were improved and enhanced.

(a) Developing Teamwork and Group Management Skills. Regardless of their roles, the participants acknowledged the importance of teamwork, group management skills, commitment, and problem-solving skills. In addition, many acquired good listening and communication skills and a sense of responsibility. Shah, Kyra, Deancly, and Clara expressed their feelings as follows:

I discover my capability in managing a creative project

involving teamwork and exploring the need for grammar exposure among students and adults. I don't do all of the progress alone, I work with four other members, and we have to think and come up with materials, design and structure of the game that can be accepted by us. (Shah)

I learned a lot, especially teamwork. I had to do a lot of work with them and have to know what they were thinking and have to listen to what are they saying. I also learned speaking and listening skills. I have to voice my opinions. (Kyra)

I find it fun because we can create our instructions on how to play the game, scoring, penalties and so on. My pronunciation is becoming better and more fluent. Before this, I was shy to speak with others. Now I dare to talk to other people. It helps me communicate better with strangers or international students, so it builds my confidence. (Deancly)

We faced so many problems at first. We had to change our game concept, our questions, and the theme of our game. But all the problems were settled with peace as we know our parts. There's no use blaming each other. We came up with many solutions to solve our problems and finally finished our grammar project. (Clara)

These findings are similar to Mali's (2016b) study, which revealed that communication, feedback, teamwork, and a sense of responsibility were key factors for the successful completion of the project. It also corresponds with Musa et al.'s (2012) study, where the learners exhibited responsibility and team spirit and solved problems together. These soft skills are integral to 21st-century workplace situations (Oliver & Jorre, 2019).

(b) Unleashing Talents and Creativity. The project provided opportunities for the participants to discover their talents and creativity. The groups fine-tuned their game before showcasing it to the class. The final design was a more attractive and improved version of their initial design. To make the title catchy, Group 5 changed it from "Pumpkin of Luck" to "You decide." They also changed the pumpkin image to a more interesting icon.

All the groups were satisfied that they could unleash their creativity (Figure 12). They discovered their untapped potential and viewed grammar learning from a new perspective. Learning became meaningful because they exhibited the capabilities to plan, manage, and accomplish the project. While taking ownership of their learning, they further developed a creative mindset. The participants' views are illustrated below.

I am not someone who likes creating games as I am not creative, and I rarely play games. That is because games are just a waste of time, even though the game is beneficial.
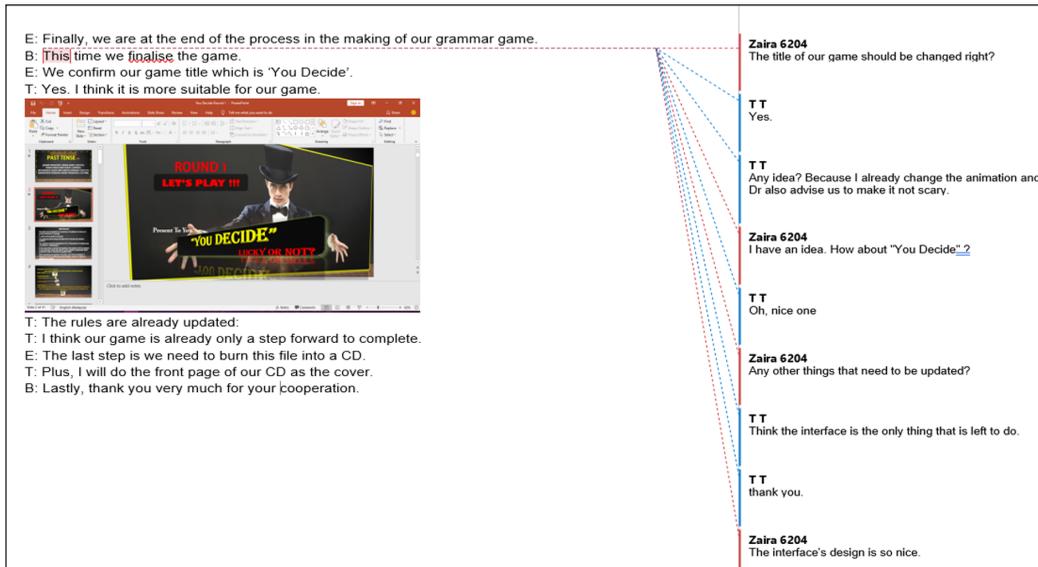
Figure 12. Refining end product

While creating the grammar game, I learned that games are actually interesting. I learned a lot from my members, who taught me and pointed out good ideas. I learn to develop ideas. (Imai)

It allows us to be creative because we have to find ideas that are not there and discuss them to bring out different creativity in us. We see all the groups have their creativity when it is presented in the final stage. Because grammar is a thing that we have to communicate to get better, having discussions and doing research together enhances our grammar. (Bubble)

Project-based learning is still a new element of learning for some people. It is unfamiliar to me. I have no idea what I will do or if I am

capable of doing so. Now, seeing the game comes to life and getting to make something so unfamiliar into a reality is a great achievement I shared with my group members. This grammar game taught me to not just think out of the box but to rip that box open and not be bound by the normality of the world and start seeing the extraordinary in it. (Shah)

(c) Developing ICT Literacy. As first-time users of Google Docs, the participants learned to utilise the collaborative online tool efficiently and independently. Travis was pleased that his ICT literacy increased when creating the online game. In their reflections, Lily, Mary, and Travis wrote:

What I love the most is that we were exposed to google docs. That was

my first time using google docs, and I didn't know that people can help to correct your grammar mistakes. (Lily)

I didn't know much about them, how they did their work, or how good they were in group projects. But once I got to know them, I learned so many things. For example, one of my group members taught me to edit videos and design a few things. It's such a good opportunity for me to learn new things. (Mary)

The skills that I have developed most are improvement and discovering more about computing. There is a lot to discover about the setting in the PowerPoint until I can create a game by using it. I also discovered how to convert MP4 to WAV audio for the game, animation editing, video editing and many more. It is a good experience. (Travis)

In Yang and Puakpong's (2016) study, unexpected positive outcomes were observed, such as developing technical skills in producing PowerPoint and information search. In addition, challenges in designing the project and lack of computer skills were overcome through learning from others or videos. The participants in this study also shared similar experiences. Travis explored and discovered how to use the various functions in PowerPoint, and the self-discovery was a rewarding and satisfying experience.

CONCLUSION

Grammar teaching aims to increase learners' ability to effectively use language in speech and writing, providing linguistic, social, and affective benefits for learners. The PBL teaching approach findings show that learners thrive in a healthy, inclusive, collaborative environment that promotes language and cognitive development. Social benefits, including learning and group construction of knowledge, prove to be meaningful and valuable. Authentic, communicative use of language provides rich social learning experiences afforded within PBL. Affective benefits in motivation, learner autonomy, and positive group relations contribute to learners' satisfaction and sense of achievement. The learners recognised that they were participating in an effective learning process even though it was unfamiliar. PBL encourages learners to give their best effort and strive for in-depth knowledge instead of superficial grammar learning in isolation.

This study has its limitations. Although three groups initially wanted to create an online game, the initial goal was hampered as they lacked the expertise. It was too costly to hire a game designer to design game templates. Time constraints also limited the focus of each game to one aspect of grammar in the game creation.

A few recommendations are suggested for future research. First, inter-disciplinary collaboration with lecturers or students from the computer science department could be initiated to design online educational games. Future studies can expand game

creation to test various language skills, such as listening and speaking, vocabulary and speaking, grammar and writing. Finally, a correlational study can investigate the relationship between PBL and students' aptitudes or learning styles.

In conclusion, practitioners can adopt PBL as an alternative assessment or class project, particularly in the new norm, by utilising more technological tools in constructivist-based online or blended learning environments. PBL affords benefits that outweigh traditional teaching approaches for language learners and other fields of study.

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New Mediators in Consumerism Activity on Malay Wedding

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ABSTRACT

The commodification of goods not only transforms traditional wedding commodity into a quantity form that can be assessed through purchasing power but simultaneously change the role and function of the mediator of traditional marriage. This study examines how the influence of a new cultural mediator plays a vital role in shaping the bride's dream wedding ceremony through consumerism activities. This study used a qualitative approach through in-depth interviews with 19 informants who are low-income Malay bride and their families that held a wedding ceremony in Kampung Melayu Sri Wira Damai, Selangor. Qualitative data from the in-depth interviews will be analysed using theme code or 'coding.' The data will be separated into key themes and converted into qualitative study results. Qualitative data findings were analysed using content analysis techniques. This study showed that most of the consumerism activities on commodities and wedding services, practised by most informants in performing their wedding ceremonies, were heavily influenced by direct and indirect new cultural mediators. Although these informants have low incomes, they cannot escape from being influenced and trapped by the culture of consumerism created by the capitalists.

Keywords: Commodification, commodity, consumerism, marriage, mediator

INTRODUCTION

Hosting a wedding feast, or *walimatulurus* in Arabic, is highly encouraged in Islam. Hosting the event is ruled as *Sunnah muakkadah* or 'confirmed Sunnah', meaning that it is demanded to be performed. In Islam, there are a few objectives to the performance of a wedding feast, which are (1) to express thankfulness towards Allah

s.w.t, (2) to inform the public regarding the marriage that has taken place, specifically, the relationship that enables intercourse between the married couple, (3) to fulfil the *Sunnah muakkadah* demand, (4) to celebrate and commemorate the newlyweds, (5) to strengthen the bond of *silaturrahim*, familial, and Islamic brotherhood between the two sides of the bride and the groom, (6) to strengthen the Islamic bond between the Muslim community and the overall neighbourhood, and (7) to avoid slander and prejudice from society towards the married couple if their marriage was not declared and the wedding feast was not performed ("Berita Harian Online", 2011).

Performing a wedding ceremony is not only a significant event in one's life, but it is also a celebration that considers religious affairs (solemnisation) as well as customary demands. Therefore, the performance of traditional Malay wedding ceremonies has highly emphasised the demands of religion and custom to the point where wedding ceremonies are done to sheer perfection in terms of fulfilling both demands. Furthermore, traditional Malay communities have positions such as Buapak (Negeri Sembilan) and *mak andam* (in many Malaysian states), which ensure that a wedding adheres to religious and customary regulations.

However, advancement and social change in accordance with the flow of time have shifted the state of the traditional wedding ceremony. The phenomena of a world without borders have caused the wedding cultures of different societies, especially the sub-cultures of Western weddings, to seep into the exercise of today's Malay wedding ceremonies. Such a situation is explained by Argyrou (1996), Edwards (2006), Nik Ahmad (2010), Satoshi (1985), and Timothy et al. (2011), who discovered that the rise in wedding costs and the destruction of local wedding traditions are caused by the implementation of Western wedding traditions which are deemed as modern and 'up to date'.

The commodification of wedding commodities not only changes the traditional wedding commodity into a quantity form that can be assessed through purchasing power but also transforms the role and function of the traditional wedding mediator. Such a change also subsequently transforms the role of the mediator of Malay culture from an individual well-versed in customs involving the performance of a Malay wedding to the mediator of a new culture. Therefore, this study discusses the various forms of new cultural mediators in introducing the ownership of dream wedding commodities among brides.

METHODS

In this study, the research chosen is aligned with the qualitative method. The choice of research is aligned with qualitative because it involves exploration and description study. The form of description and exploration is used to connect with the lack of literature related to the cultural study of consumerism in low-income Malay weddings, especially in the context of studies in Malaysia. In

addition, this study orientation approach is able to explain the studies that are considered new in the context of research in Malaysia.

Furthermore, this study uses in-depth interviews as its main method, with the exception of literature reviews and observations. The form of interview used is an unstructured interview with the informant. The interview method provides leeway for the researchers to delve into issues in activities pertaining to the consumption of wedding ceremonies. Furthermore, these unstructured interviews allow the researchers to ask a wider range of questions while the informants answer the questions freely. In addition to in-depth interviews, to strengthen the research data, a non-participating observation method is also used as a way to collect data without involving direct communication with informants. On the other hand, informants are observed only in the existing or natural environments. The advantage of using the observation method is that the information obtained in the study is more accurate because it is less likely to be affected by memory, among others.

The analysis unit selected for this study is a low-income Malay family earning below RM3000.00 per month. The selected analysis unit consists of the bride and groom who performed their wedding ceremony in Kampung Melayu Seri Wira Damai from March 2013 to April 2014. Apart from the bride and groom, the parents of the bride and groom were also used as an analysis unit in this study. The choice of the bride and groom

and their parents as an analysis unit is due to the fact that the wedding ceremony on the side of the bride's family is larger and filled with a culture of consumerism on the commodity and wedding services provided by the wedding industry as opposed to the implementation of the wedding ceremony performed next to the groom. In terms of the reliability of the data, the number of informants is not the main issue in qualitative studies. However, the extent to which the data collected becomes saturated with data even if the number of informants is small.

Since the data obtained is in the form of a text (interview), the researcher first rewrites and transcribes the interview session in the form of text. Next, the researchers used the method of manual qualitative data analysis to store text transcripts of interview results with study informants in the form of more structured data banks.

Researchers used the IBM Statistical Analysis (SPSS) version 24 software to produce this data bank. First, all the text of the interview that has been transcribed is included in the SPSS software. These texts are then 'cleaned' and then matched with the concepts that have been operated according to the objectives of this research study. 'Cleaned' means the same texts of meaning (based on the same question number between an informant and another informant) are united without reducing their original meaning and meaning. Texts that have matched the concepts are then issued in presenting a particular issue during the thesis writing.

RESULTS AND DISCUSSIONS

The fact that past Malay wedding ceremonies were a mixture of customs (most of which were influenced by Hinduism) and Islamic rituals (solemnisation), certain individuals were assigned roles to ensure the smooth execution of the ceremony. Although the solemnisation ritual led by the Tok Kadi can deem a marriage legitimate, it is not the end of the wedding because, in a traditional Malay community, a wedding is not complete without the execution of a wedding reception. The joy of a wedding can be felt at the wedding, which includes various customary practices that the bride and groom must experience.

In performing a wedding reception, some cultural mediators are responsible and instrumental in ensuring the execution of a wedding ceremony proceeds smoothly while also adhering to Malay wedding customs. These cultural mediators normally consist of the head of customs (such as Buapak and Kedim for the traditional Malay communities that practice the Adat Pepatih leadership system in Negeri Sembilan as well as several other small districts in the state of Malacca) and *mak andam* (Magiman, 2020; Selat & Hassan, 2014). These traditional cultural mediators are traditional socialisation agents in a traditional Malay wedding.

The head of customs (Buapak) is responsible for (1) handing over the engagement ring, which is when the side of the groom delivers the ring, the Buapak will act as the representative to accept said ring on behalf of his niece and will strike an agreement regarding the amount for the wedding gift, the dowry, as well as determining the date of which the wedding will take place, (2) delivering customs, which is, to become the representative for the host in confirming the wedding customs and the wedding gift as had been determined during the prior process of delivering the engagement ring, and (3) handing-overs, in which the Buapak will act as the representative for the groom in settling the amount for wedding expense and wedding gift imposed by the side of the bride towards the groom. Therefore, as head of customs, the essence of a Buapak can be witnessed in the cancellation of a wedding ceremony due to the absence of the Buapak at said ceremony.

A Kedim will come into play once a Buapak is unable to attend a wedding ceremony due to several reasons, such as a hostile relationship between the Buapak and the father of the bride or the Buapak being absent from the location where the wedding is taking place. Usually, those elected as a Kedim must possess a profound understanding of wedding customs. Besides understanding the twists and turns of wedding customs, a Kedim also supervises the tasks required to arrange a wedding reception. Therefore, the responsibility of a Kedim as a substitute for a Buapak in a wedding ceremony is to act as the navigator to the implementation of wedding customs (Selat & Hassan, 2014).

In most states in Peninsula Malaysia, a woman known as *mak andam* is in charge of managing matters concerning the execution of a wedding ceremony. The leading role

of *mak andam* is beautifying the bride while ensuring the wedding ceremony goes according to plan. Mak Andam's beautifying role includes (1) uplifting facial beauty, (2) shaving (to observe whether the bride is still a virgin for the process of uplifting facial beauty), and (3) *berlangir* or *berlimau* (warding off misfortunes and mystical forces). Furthermore, some *mak andam* are capable of acting as the bride's 'guardian' throughout the wedding ceremony as they are well capable of curing and healing the bride in a case in which they fall ill or unexpectedly become unconscious due to reasons of exhaustion malicious acts of others or suchlike (Kasimin, 1989).

When the most material culture in weddings of the Malay people had gone through the process of commodification, such a situation also produced new cultural mediators in certain wedding productions or wedding services in the wedding industry that they ventured in. The findings suggest that two forms of new cultural mediators influenced the informants' consumption activities of wedding commodities and services. Among them are (1) direct new cultural mediators and (2) indirect new cultural mediators.

Direct New Cultural Mediator

Direct new cultural mediators are individuals (wedding industry entrepreneurs) who run their businesses directly with the consumers. Through direct business transactions, details and information regarding certain wedding commodities and services were being channelled directly to the consumers. Such

an occurrence was in accordance with an explanation by an informant, which was Ryka:

> "...To organise a wedding ceremony, I have to 'deal' with a variety of different salespersons that provide wedding supplies and services needs. It isn't an easy task as I must meet with multiple different people with wedding business backgrounds at different times while also having to go to different places because not all wedding business entrepreneurs that I wanted are in the same area. I prefer meeting directly with the entrepreneurs to get information regarding the supplies and services that I wanted as it's much faster and polite that way...."

Many of the informants also stated how they had received information regarding certain desired wedding supplies through owners, sellers, or shop assistants. Such a case was akin to the one stated by one of the informants, named Ummi:

> "...most of the wedding supplies that I had purchased were recommended and advised by the salespersons. It's not that I didn't make a checklist for the wedding supplies, but when I was at the shops, there were multiple different varieties and styles of wedding supplies. To make things easier, I asked the salespersons for advice to pick and choose the best possible wedding

supplies. They were more insightful and well-informed regarding the matter at hand, in terms of quality, prices that followed the budget, supplies' functionality, current trends, and so forth. This helped save my time while finding wedding supplies…."

Based on the statements made by most informants, it was indicated that the direct new cultural mediators varied according to their fields of business. The direct new cultural mediators may consist of wedding boutique owners, catering services owners, *bunga telur* providers, gift-related goods providers, canopy rental providers, beauty spas owners, wedding cake providers, souvenirs providers, *inai* or henna artists, photographers, fast food entrepreneurs, and more.

New cultural mediators were limited to entrepreneurs of commodities and services, as well as workers involved in the wedding industry, such as sales executives, shop assistants, and sales associates. It is because they were also involved in giving out information regarding certain products and services available to the point where a business transaction occurred with the consumer. This situation is aligned with a statement made by Tourine (1985) in that the existence of diverse forms of the new cultural mediators is because of the increase in symbolic goods offered in the market, the demand for the new cultural mediators that possess the ability to change cultural tradition to produce symbolic goods while

also provide new interpretation to those symbolic goods are high.

For many informants, new cultural mediators served as new socialisation agents in addition to trading commodities and services. The purpose of these new cultural mediators was to educate (carry out negotiations, provide advice, counsel, suggestions, and information regarding certain wedding commodities and services offered) and instil fairy tales and fantasies in the usage of certain wedding commodities and services to turn buyers into regular spenders.

In addition to individuals, the actual location is also part of the direct new cultural mediators. An actual location is a location or a place to manifest business transactions between sellers and buyers. Examples of tangible locations include a building, a house shop, industrial areas, and more. In the research field of consumer behaviour, an actual location is a part of the consumers' internally scavenged information. This internally scavenged information is information grounded on consumers' past purchasing experiences, queries of information or advice from friends and relatives, or being influenced by advertisements or sellers (Panatik & Rahman, 2004). The findings from interviews with most informants revealed that the main location that had become their choice for purchasing wedding products and services was Nilai 3, Negeri Sembilan.

The findings showed that many bride informants had purchased items for their wedding ceremonies at Nilai. Two of the

five informants stated that they had prior information regarding Nilai 3 through their group of friends. Such a matter is as stated by one of the informants by the name of Yati:

> *"...I knew about Nilai 3 through friends who had previously purchased their own wedding items over there, but I myself had been there two or three times in the past...."*

Meanwhile, the other three bride informants stated how they had known about Nilai 3 based on their own experiences of purchasing there. Such a matter is evident through a statement made by one of the informants by the name of Laila:

> *"...I had known about Nilai 3 for a long time as I had been there in order to purchase wedding necessities for my younger sibling's wedding...."*

Based on the statements, the informants utilised the source of information from their friends as well as their own previous purchasing experiences to perform consumption activities in Nilai 3. These study findings parallel Bettman et al.'s (1978) statement that the decision-making process among consumers is influenced not only by the element of the task but also by how said information is prepared in the consumers' environment. It includes previous consumer purchasing experiences and information obtained through friends, families, sellers or other consumers that had utilised a certain product or service.

It is equally observable that a loyalty pattern existed among the informants when they stated how they performed purchasing activities in said destination two or three times in the past. According to Abu-Alhaija et al. (2018) and Dharmmesta (2009), consumer loyalty can be defined as a consumer's persistence to continue using the same product from the same place or shop. This loyalty depicts the expected nature of products or services that had previously been purchased or used. The loyalty of consumers will skyrocket once a product is deemed capable of providing the highest degree of satisfaction to the point where consumers refuse to switch to other existing locations or shops. Moreover, the results of this study also fulfil two characteristics of loyal customers in a previous claim made by Griffin (2002), which is that customers who are loyal towards a certain product or service will (1) repetitively perform purchases and (2) purchase the same products or use the same services at similar places or shops.

Besides, the selection of Nilai 3 as the destination for purchasing wedding commodities among many informants was based on the reputation of that specific destination. Nilai 3 was known as the biggest wholesale centre for wedding products in Peninsula Malaysia while at the same time offering comparatively lower prices for said products compared to other sales points. Such a matter is as stated by one of the informants by the name of Ummi:

> *"...because that place is well-known for the sales of its variety and cheap wedding items...."*

This finding is also parallel to the study performed by Benedict et al. (1991), which stated that besides a strategic location that provides ease of accessibility, having various facilities for visitors, different activities that facilitate each other and traditionally possess certain image or reputation can attract more consumers and visitors. Consumers and visitors are important components of business activities. Therefore, shopping centres must have a certain pulling power. It is because such a feature is important in influencing visitors in their decision-making process while selecting their preferred and suitable shopping centre for their next visit (Dennis et al., 2000; Wahid & Ismail, 2000).

This concept of purchasing loyalty was further reinforced by the pricing factor offered in Nilai 3. This finding is also in accordance with the research by Dharmmesta (2009), who claimed that the pricing factor is also linked to the customer loyalty factor. A price is an amount of money that is required to procure a certain amount of combination of products alongside its services. Besides being a source of income for those in the wedding industry, a price is also connected to the quality of the product or service. Those in the wedding industry formulate a strategy that generates profit for them and provides satisfaction to their customers with reasonable or cheaper prices than their competitors while maintaining a high-quality product. Meanwhile, according to Boom and Willem (2010), the pricing factor plays an instrumental role for consumers before proceeding with a transaction. In addition, purchasing a product with a steep and unreasonable price will be damaging to consumers.

The result of interviews with most of the informants also showed how their purchasing activity patterns on wedding commodities in Nilai 3 were influenced by sellers there. This matter matches a statement by one of the informants, who went by the name of Ryka:

"…It's quite difficult to make a choice once you are there. I'll typically inquire with the sellers regarding my desired wedding products. Although it's obvious that they have the items that I wanted, the multiple different variations of those products necessitated me to ask for perspectives and recommendations from the sellers to obtain the best possible products. They (the sellers) are more knowledgeable regarding their inventories whether in terms of their types (shapes and patterns), material, quality, and price…."

It indicates that sellers had considerable influence on informants' purchasing patterns. Through negotiations, recommendations, providing perspectives, and persuasion (handing out discounts, promotions, and complementary gifts) regarding wedding commodities sold, informants' purchasing patterns will consequently be influenced. Sellers from shops in Nilai 3 were also part of the new cultural mediators as they were also involved in marketing activities (supplying information regarding commodities they sell while simultaneously selling commodities

produced by the capitalists). This matter is parallel to a statement by Bourdieu (1984), which is that 'new cultural mediators may consist of those who work in mass media, involved in the field of fashion designing, advertising, and various other professions that consider information regarding production, marketing, as well as symbolic goods.

Besides acting as the new cultural mediators, sellers in Nilai 3 were socialisation agents to many informants. Through the process of negotiations, providing perspectives and suggestions to many of the informants regarding certain products they sell, they will consequently become an essential source of information to most of the informants in their decision to purchase the absolute best wedding products for their wedding ceremonies.

The existence of Nilai 3 as the largest centre for purchasing wedding commodities in this country was not only to provide wedding necessities but also to exhibit how capitalists (wedding industry players) had provided a special business site on a large scale that had become a shopping heaven for future married couples across Peninsula Malaysia. The term 'shopping heaven' is used here to indicate how Nilai 3 can not only offer varieties of wedding commodities because of the use of capitalists' commodity logic but also, at the same time, offers wholesale prices for the commodities. Therefore, it is undeniable that the existence of Nilai 3 as a special one-stop centre for all things related to wedding commodities was an initiative by the capitalists themselves to materialise a relationship directly between them and the consumers, ultimately inevitably generating such tremendous profit.

Apart from creating a consumption activity relationship, Nilai 3 was also responsible as a centre for the spread of the source of information regarding wedding commodities to consumers. The source of information regarding certain commodities, whether an existing symbolic item or a new symbolic item in accordance with current trends at that location, was obtainable through observation or clarification by the sellers. To put it simply, although Nilai 3 was a shopping centre for wedding commodities, it functioned simultaneously as a consumer socialisation agent. This finding, by implication, had refined a theory made by Stallybrass and White (1986) concerning the existence of carnivals, exhibitions, and supermarkets that those places play two main roles, which are (1) as a spot for product marketing, and (2) as venues for amusement.

Thus, the existence of Nilai 3 as Malaysia's largest shopping centre for wedding commodities can be argued to be one of the new cultural mediators' initiatives to not only sell wedding products and commodities but also to plant a desire through the use of the wedding products and commodities that they had sold. It was, without a doubt, to guide consumers to become fanatics to the point where extravagance and wastefulness were deemed reasonable actions to achieve fairy tale dreams seeded by none other

than themselves through purchasing and enjoying purchased items. Hence, it can be concluded that the purposes of Nilai 3 are still consistent with a statement made by Bakhtin (1968), Featherstone (1991), and Stallybrass and White (1986), which are (1) to increase and expand their production to create a new market for capitalists and educate the mass to become devoted consumers, and (2) to spread various images regarding consumerism that emphasises on amusement and desires that is alternative where consumption activities are considered reasonable activities even though performed in an extravagant and wasteful manner.

Indirect New Cultural Mediator

The indirect new cultural mediators are the flow of information resources through mass media groups that capitalists used to sell wedding commodities or services that they manufactured. Magazines, newspapers, programmes (print media), the internet, television, and radio are among the various types of mass media (electronic media). However, in the context of this study, most of the informants used only two types of mass media to gather information about current wedding commodities and services: (1) magazines (print media) and (2) the internet (electronic media).

Most female brides said they used magazines as a reference source to gather information about current wedding commodities and services. It is similar to a statement made by one of the informants, by the name of Laila:

"For the purpose of gathering information regarding wedding supplies I did use magazines because now, there are a lot of magazines focusing on the topic of weddings available in the market. It's also convenient to use magazines as all information related to the topic of weddings nowadays can be obtained in only one magazine…."

These findings showed how magazines became the choice for most of the informants among the female brides because information surrounding the current sphere of a wedding can be obtained through only one medium. It is parallel to Barnes and Yamamoto (2008), although the development of information and communication technology (ICT) is deemed to have started to challenge the position of the conventional forms of mass media such as magazines, we can nonetheless still see now that magazines are still providing positive impact towards advertisement due to its broad and extensive reachability and accessibility towards a heterogeneous target. According to Bara et al. (2021) and Barnes and Yamamoto (2008), magazines are the most significant and effective form of mass media for advertising products to influence female consumers.

Apart from magazines, two other informants among the brides also stated that they had utilised internet social media such as Facebook and blogs to gather information regarding wedding supplies. Such a case can be seen in the one stated by one of the informants by the name of Yati:

"I chose to use 'fb' because online sellers will try their absolute best to provide verified information regarding the products they are selling. They also include photographs, videos, and testimonies from those who had previously used their products apart from just the information…."

Based on the statement, the use of the internet as a source of information relied on the validity of information regarding the commodities and services they provided. That information was reinforced by providing photographs, videos, and user testimonies from those who had used the wedding commodities and services they provided. According to Mew (2009) and Omar and Hasim (2021), social networking pages have become the modern social platform that considers mass involvement that no longer work only as tools or facilities for distribution, archiving, and low-cost while based only on texts. However, it changes to the social media that are utilised anytime and anywhere besides providing social networking facilities and interaction between readers and writers.

The use of magazines and the internet to gather current information on wedding commodities and services served only as a vessel or platform for capitalists to create a market and sell wedding commodities and services to consumers. The direct new cultural mediators were still creating a market using the indirect cultural mediators to gain profit. Such a situation is like the one mentioned by Bourdieu (1984), in

that these mass media groups are known as 'new cultural mediators' which consist of those who are working in mass media, those who are involved in fashion designing, advertising, and various other professions that consider information related to production, marketing, and symbolic goods. Therefore, this showed that mass media were a part of capitalist agents that had a role in constructing consumerism activities among consumers.

Those two forms of mass media also showed that they were not only capitalist agents in constructing markets and consumerism among consumers but also functioned as socialisation agents towards the consumers. Through these groups of different mass media, various information regarding wedding commodities and services was displayed to the consumers. This situation directly brought about two scenarios, which were (1) mass media educate consumers to accept a 'new culture' in wedding ceremonies, and (2) visualise and construct fairy tales regarding wedding commodities and services to turn consumers into avid spenders.

In the field of consumers, the activity of purchasing is unlikely to occur in the absence of influence from cultural intermediaries. Cultural intermediaries play a role in disseminating various images of consumerism that focus on the pleasure and desire of an alternative nature where consumption is seen as excessive and wasteful activity. The existence of popular cultural intermediaries such as carnivals, exhibitions, and festivals has inadvertently

created a liminal space in which the world's life is distorted, prohibited, full of fantasy, and from a wonderful dream, and in which the use of a certain product is about to be realised. The existence of supermarkets and hypermarkets is also the result of the 'dream world'. The phantasmagoria of a wide range of commodities displayed on a large and continuous basis will be renewed as part of the capitalist and modernist factions driving toward the sophistication that is the source of the dream mentioned above image. Items on display are fed a semi-conscious illusion that constantly changes until the object appears to be separated from the context and subject. All dreams are collected half-consciously and shaped into desires in commodities. Finally, purchasing and enjoying the purchased commodity or service fills those dreams. Through photographic images, new cultural intermediaries such as mass media, the internet, and social networking sites have further enhanced the 'dream world' in consumption activities, allowing us to remain hardcore users.

CONCLUSION

Overall, the commodification process created various wedding commodities and services. These distinct types of wedding services and commodities brought along multiple forms of new cultural mediators. Cultural mediators can be subdivided into two categories, which are (1) direct new cultural mediators (boutique owners, catering service providers, photographers, henna artists, make-up artists, *kompang*

service providers, announcers (DJ), sellers, and Nilai 3, and (2) indirect new cultural mediators (magazines and the internet).

Despite the fact that there are two new cultural mediators, the findings of this study indicated that many of the informants leaned towards utilising direct new cultural mediators. Furthermore, this inclination to use direct new cultural mediators was strictly linked to most informants' convenience and belief in conventional business transactions. Nonetheless, regardless of the form of cultural mediators that exist currently, they are unquestionably capitalist agents whose primary goal is profit.

The new cultural mediators' role was to sell wedding commodities and services provided by capitalists and act as socialisation agents on their behalf, educating consumers to accept the 'new culture' in wedding ceremonies. Examples of new cultures in Malay wedding ceremonies include (1) wedding theme, (2) wedding bouquet, (3) souvenirs, (3) catering, (4) photo booth mask, (5) flower carrier, (6) guest book, (8) wedding arch, (9) wedding cake and more. The new cultural mediators educate consumers to accept new cultures and continue being avid spenders. Being extravagant in their expenditures is considered reasonable to live inside the fairy tales implanted in them. Therefore, the role of the new cultural mediators is to spread various images of consumerism that emphasise fun and desire in an alternative nature where consumption activities are deemed as reasonable activities. However, they are done in an extravagant and wasteful

manner. Capitalists increased and expanded production through new cultural mediators is deemed necessary to create a new market and act as socialisation agents to educate the public to become avid consumers continuously. Thus, although the informants are categorised as low-income individuals, it is impossible for them not to be influenced and clutched by the capitalists' consumerism culture.

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Counsellors' Emotions at Work: What Can We Learn from Their Experiences?

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ABSTRACT

The counselling profession plays a pivotal role and is often considered emotionally demanding. However, previously published studies on emotions at work have been limited in terms of research among counsellors. Hence, this study aims to explore (1) how counsellors perceive their profession, (2) how their work emotions come about when dealing with clients, (3) and what are the main job demands and resources of the counsellors. The current study employed qualitative research using a phenomenological research design. Individual in-depth semi-structured interviews with 44 registered professional counsellors in Malaysia were conducted to understand their experience of, and perceptions about, the counsellor's job. Several themes developed based on the literature review, and discussions among the authors were made to see any disagreements regarding the selected themes. The team properly addressed any inconsistencies that arose. The first finding revealed that counsellors perceived their profession as a challenging occupation. As for the second finding, two themes were associated with the counsellors' emotions at work: (1) positive and (2) negative emotions. Working conditions were the most recurring theme in the last finding of the study that influenced the job demands. In contrast, emotional support and professional growth were two job resources that helped reduce stress among counsellors.

Keywords: Counsellors, counsellors' emotions, emotions, work emotions

INTRODUCTION

In recent years there has been a growing body of literature within the field of counselling that unveils the truth about how employees, particularly in the service industries, consistently regulate their emotional responses when dealing with clients (Bolton, 2004; Grandey, 2000; von Gilsa et al., 2014). Most of these studies have raised concerns about a dramatic increase in mental health problems in a people-oriented working environment. Although extensive research has been carried out in the said area, there is a lack of evidence about the underlying factors that induce emotional stress in workers and the mechanism they adopt to resolve those psychological conflicts. While several studies attempt to explain the phenomenon, they are mainly conducted in a Western context and have employed either quantitative or mixed-method instruments (Hayward & Tuckey, 2011; Kim et al., 2013). Hence, this present study takes on a more holistic qualitative methodology to explicitly explore the complexity of emotional reactions among service workers in Malaysia.

This study selected a group of professional counsellors working in several settings in Malaysia (e.g., agencies, schools, and universities) as the participants. They were chosen based on the nature of their work; they recurrently experience loads of emotions as a result of their close interactions with clients who are struggling with various emotional difficulties, life challenges, and mental health concerns (Grandey, 2000; Hochschild, 1983; von Gilsa et al., 2014).

Moreover, the burden of non-counselling duties, such as administrative and operating work, has further contributed to counsellors' emotional exhaustion and fatigue in counsellors (Falls & Nichter, 2007; Moyer, 2011; Wilkerson, 2009; Wilkerson & Bellini, 2006). Counsellors can also be greatly affected by countertransference, their conscious and/or unconscious feelings stemming from their relationships with the client, in which that feelings, in return, influence their emotional responses to work (Hayes et al., 1998, 2011).

The existing literature on counselling and mental health has shown that counsellors have a high tendency to develop serious psychological health conditions, including burnout and depression, when they focus too much on other people's well-being and neglect their own (Hardiman & Simmonds, 2013; Temitope & Williams, 2015). It is especially true when they have to work constantly with people who are severely traumatised and in pain, such as grieving over the loss of loved ones, which consequently takes a heavy toll on them (Fourie et al., 2008; Ling et al., 2014; Westman, 2001). Some research discovered that dealing with clients may not necessarily always be negative. Several studies, for instance, found that some employees experienced positive emotions, such as happiness (Rogers, 2012), engagement (Sonnentag et al., 2010) and flow (Nakamura & Csikszentmihalyi, 2014) throughout their work. Barsade and O'Neill (2014) disclosed that a vibrant culture of companionate love at work is positively associated with workers' satisfaction and teamwork; and a negative association with

absenteeism and emotional breakdown. Their study also revealed that the degree of affection, caring and compassion established between the workers and clients could also result in better outcomes for the clients, including patients' good mood, satisfaction and fewer trips to the emergency room.

This paper aims to comprehend how working conditions influence counsellors' emotions at work using the Job Demands-Resources model (Bakker & Demerouti, 2007). According to this model, two overarching aspects of work are presumed to play a part in the intricacy of employees' emotional experience: job demands and job resources. The former is defined as "those physical, social, or organisational aspects of the job that require sustained physical and/or psychological effort and are, therefore, associated with physiological and/or psychological costs" (Xanthopoulou et al., 2007, p. 122). In contrast, the latter is described as "those physical, social, or organisational aspects of the job that (1) are functional in achieving work-related goals, (2) reduce job demands and the associated physiological and psychological costs, and (3) stimulate personal growth and development" (p. 122). In other words, job demands refer to risk factors in the workplace. They are closely linked to health impairment—a mechanism whereby one's energies are exhausted (resulting from poorly designed jobs), leading to the depletion of mental and physical resources (Bakker & Demerouti, 2007). On the other hand, job resources imply positive determinants of work motivation that

are functional in securing both work and personal goals (Bakker & Demerouti, 2007) and are therefore helpful to offset the harmful impact of job demands (Bakker et al., 2011; Dollard & McTernan, 2011; Idris & Dollard, 2011).

To date, a plethora of research has been used to test the applicability of the JDR model. Santa Maria et al. (2018), for example, investigated the role of job demands and resources in emotional depletion among police officers and found that the imbalance between job demands and resources significantly impacted their behavioural and psychological well-being. In view of this, the study asserted that it is imperative for the authorities concerned to acknowledge the all-embracing constructs of job demands-resources in individual police officers so that their performance is always at a high level. Similarly, this present study is also interested in examining the complex interactions between job demands and job resources, particularly in the context of the counselling profession, a largely underexplored area. Since it is vastly concerned with understanding the detailed concept of emotional reactions, a qualitative approach is deemed to be a more appropriate research method to opt for, as it offers a greater insight into participants' personal experiences and therefore provides better explanations of the phenomenon being studied (Glaser, 2008; Idris et al., 2010; Kinman & Jones, 2005). Specifically speaking, this study aims to investigate (1) how counsellors perceive their profession, (2) how their work emotions come about

when dealing with clients, and (3) what the main job demands and resources among counsellors are.

A high level of burnout has been found among substance abuse counsellors, which can be attributed to a wide range of internal and external factors such as emotions, personality traits, work conditions, and work organisation (Vorkapić & Mustapić, 2012). It has also been reported that counselling professionals are prone to develop three classic burnout symptoms: emotional exhaustion, depersonalisation and reduced personal accomplishment, especially are handling clients with substance abuse problems (Bakker et al., 2001). Although some studies disclosed that a high level of self-consciousness and mindfulness could help counsellors buffer the negative effects of working with traumatic clients (Ender et al., 2019; Gutierrez & Mullen, 2016; Hardiman & Simmonds, 2013), many other studies showed that a high degree of empathetic demand and frequent exposure to clients could significantly create perfect conditions for occupational hazards (Baldwin-White, 2016; Vorkapić & Mustapić, 2012)

Research Questions

Based on the stated objectives, the following research questions have been formulated:

1. How do counsellors perceive their profession?
2. How do their work emotions come about when dealing with clients?
3. What are the main job demands and resources of counsellors?

The next section presents the research materials and methods, followed by results and a discussion of research findings. Finally, it concludes with managerial implications that can benefit practitioners and policymakers.

MATERIALS AND METHODS

Participants

This study involved 44 counsellors registered as professional counselling practitioners in Malaysia and have worked in several local public agencies, namely The Ministry of Women, Family and Community Development, The Ministry of Education, and The Ministry of Urban Well-being, Housing and Local Government. As inclusion criteria, the selected counsellors must be registered with the Malaysian Board of Counsellors and have worked for at least five years as certified counsellors. The counsellors were carefully selected using purposeful or purposive sampling to gain information-rich cases related to the phenomenon of interest (Kinman & Jones, 2005; Maxwell, 2012). After finalising a list of registered counsellors from the Malaysian Board of Counsellors website, the researchers contacted the potential participants via phone to invite them to participate in the study. Once they had confirmed their participation, the researchers immediately emailed them the letter of invitation to inform them about the present study and to help explain their rights in the research (e.g., confidentiality, voluntary participation and right to withdraw). Most participants were

female with a bachelor's degree, while others had a master's degree.

Protocol of Study

In-depth semi-structured interviews were used as a method and protocol of the study to collect data (Furnham, 1997; Kinman & Jones, 2005). The study employed a phenomenological research design whereby the researchers describe the emotional experiences of individual participants about a phenomenon being studied (Maxwell, 2012). The flexibility and comprehensiveness of qualitative interviewing in seeking out the world views of research participants (Gill & Baillie, 2018; Gill et al., 2008) allowed for the discovery of new and unanticipated information, which was useful for understanding the complex array of emotional experiences of the counsellors.

The semi-structured interviews were held for a period of 20 to 40 minutes (for each person) at the participants' workplace in an informal manner to make them feel comfortable to promote active participation and thus obtain richer data. However, the interviews continued until 40 minutes up to one hour until data saturation was reached. All the interviews were conducted in Malay and audio recorded with the participants' permission. They were also asked to sign an informed consent form as approval for data collection prior to the interview.

The interview questions were thoroughly developed based on the researchers' understanding of the subject matter and also from the literature review (Jacob & Furgerson, 2012). The following are the main questions asked of the participants:

1. How do you perceive your profession?
2. What type of client normally seeks your help?
3. What are the best/most meaningful moments you have experienced as a counsellor? Why?
4. It is argued that a counsellor keeps thinking about their clients' problems. What do you think about this? Do you agree or disagree? Why?
5. Are your emotions relatively stable or changing from one time to another? Why?
6. What emotions dominate your life the most (e.g., happy? sad? enthusiastic? hopeless? Or something else?) Why?
7. As a counsellor, what are the matters that always stay in your mind? Why?
8. Counsellors often deal with many clients daily. How do you cope with your heavy workload?
9. It is claimed that psychological well-being is very important. How do you think your employer takes your psychological well-being into consideration?

Analysis

The data from the semi-structured interviews were systematically analysed using template analysis, a particular style of thematic analysis that is highly flexible in exploring

basic causes of complicated human actions without compromising the research's objectivity and reliability (King, 2004; Neuendorf, 2002). Additionally, template analysis is also helpful for the researchers to explain and interpret a phenomenon within the social and cultural context, or what have termed: a contextual constructivist (Madill et al., 2000). Due to the reasons mentioned above, this study believes that template analysis allows the researchers to discern better the intricate nature of emotions experienced by counsellors in a localised Malaysian setting.

All the recorded interviews were transcribed verbatim and scrutinised using NVivo 10 software to analyse the data. This process was repeated until all the focus points were taken into account, and the concepts were successfully grouped into themes (Glaser, 1992). Then, using the template analysis, the researchers produced a list of codes called a template, representing themes identified in the transcribed data. To ensure the confirmability of the themes and trustworthiness of data analysis and to avoid interpretation bias arising from the analysis,

15% of transcriptions were rated by second-rater or independent scholars (Kinman & Jones, 2005; Kvale, 1996) with counselling and psychology expertise.

RESULTS

Being a Counsellor is a Challenging Occupation

The primary aim of this study was to obtain an understanding of how counsellors perceived their profession. The initial analysis revealed that most counsellors expressed the view that working as a counsellor can be very intense and demanding. Two main themes emerged from the gathered data that describe why the counsellors perceived their work as challenging, as indicated in Table 1 below: 1) the nature of the job and 2) the clients.

According to the participants, it was the job conditions that made counselling a hard profession to succeed in. Many of them, for example, argued that working as a counsellor can be emotionally draining. Their statements such as "It's so tiring, you know; we have to always be mentally

Table 1

The reasons why the counselling profession is challenging

Themes	Subthemes
1. The nature of the job:	1. The profession involves many emotions.
	2. Social and cultural stigma in relation to the counselling profession.
	3. Counsellors need to do everything (holistic work) in their organisation.
	4. Counsellors need to be multi-skilled, undertake multitasking and have extra knowledge.
	5. The number of counsellors is very limited compared to the number of clients.
2. The clients:	1. Clients bring life-altering problems and situations.
	2. Clients' healing process takes a lot of time and effort.

prepared to help them (clients; P5)" and "it's tiring (being a counsellor) because we are dealing with people's emotions here" (P10), clearly indicate their lethargic and discouraged feelings about their work. Apart from that, the social and cultural stigma surrounding counselling was also one of the reasons for the participants' claim about their difficult role as a counsellor. They argued that the negative stigma that most people have about "mentally sick" people had to a certain extent, influenced their work motivation. They believed that the public's lack of awareness of the counselling profession had caused them to have such a perception. A participant, for example, pointed out: "People just do not understand what a counsellor really is. They just assume that a counsellor gives advice to those who have life problems…I don't know, but it affects us somewhat; it is like we are dealing with something bad" (P20).

Moreover, some participants also argued that they must provide a holistic counselling approach to patients (an approach that focuses on every aspect of human well-being, including physical, emotional, social, and spiritual), which had added to their emotional burdens. To make matters worse, the increasing number of clients that sought treatment from the counsellors had forced them to work beyond their physical and mental capacity, leaving them in a state of despair. In terms of clients, a few participants expressed that most of their clients took significant time and effort to heal, which caused them to work around the clock.

Although most of the counsellor-participants, to some degree, appeared pessimistic while describing their work, some were still positive about being a counsellor. They contended that being a counsellor consistently challenged them to improve themselves, as a good counsellor should be equipped with various knowledge and skills and positive attitudes. One of them said: "The counselling profession is very challenging. It is multidisciplinary and involves all aspects of life. A field that needs us to always self-improve to effectively help others. It is a good thing, though" (P2). Additionally, there were also some participants argued that their job as a counsellor was a real eye-opener. They believed that listening to other people's struggles could make them appreciate their lives more. A participant, for instance, stated: "Although our job is challenging, I still love the fact that it teaches me to be thankful. Knowing that there are other people out there struggling a lot in their lives makes all my problems seem smaller" (P23).

In essence, while challenge demands are often considered positive job demands (Idris & Dollard, 2014; Podsakoff et al., 2007; Yulita et al., 2014), in this study, however, may not necessarily be the case. It appears that the challenges of working as a counsellor have considerably put the participants on the edge of emotional anguish, which may bring negative consequences to their working performance. Having said that, most participants revealed that they had coping mechanisms to help them maintain their emotional wellness (Table 2).

Table 2
The counsellors' coping mechanism in dealing with work challenges

Challenges management	Illustrative quotes
Emotional, physical and mental readiness	As a counsellor, I always try hard to be emotionally ready and aware of all circumstances. (P1) To be someone that is capable to cope with any challenges, we must be mentally and physically ready. (P15)
Counselling awareness	I am trying very hard to change the social stigma. Not everyone that seeks counselling sessions is problematic. Providing the public with the right information about counselling is one the best ways (to overcome the social stigma). (P38) I am passionate and work very hard to make new perspectives in my office and myself as a skilful counsellor, as well as in making sure my client will come to a counselling session without a negative stigma. (P21)
Responsible	Sometimes, with all the challenges, we may feel like giving up on being a counsellor. But we must remember, this is our responsibility that we must uphold. (P40) In facing various types of clients with various personalities, it's a big challenge for me, but I took this as a responsibility and worked very hard for it. (P22)
Positive	We must always be positive and passionate in handling a session with the client until there is a change in themselves. (P8)
Good attitude and personality	To face challenges, we must always keep a positive attitude, not only at work but also with society. (P12)
Good and extra knowledge	We really need to have good knowledge about our field. For example, I am in the health field. So, I have to be well-informed about my patients' health conditions and what to do to help them. (P33)

Counsellors' Emotions at Work

Two themes were associated with the counsellors' emotions at work extracted from the interview data: (1) positive and (2) negative emotions among the counsellors. The details are presented in the following subsections.

Positive Emotions Among the Counsellors. The findings unveiled that happiness was the subtheme and dominating feeling experienced by most of the counsellors in the study. This feeling of contentment and joy was found both internally and externally driven. The internal elements entailed the counsellor-participants' constituents, whereas the external elements implied the client-related factors (Table 3).

Table 3 demonstrates that counsellors' happiness was the intrinsic circumstance that facilitated the formation of positive feelings in the participants. One of the counsellors, for example, commented,

> *I am passionate, and I work very hard to become a skilful counsellor. I also want to change people's false perceptions about counselling. I want people to know that coming to a counsellor does not mean you are problematic. I want to change that stigma. It makes me feel so happy to see clients come to me with a positive mindset.* (P5)

Table 3
Positive emotion among counsellors

Theme	Subtheme	Illustrative quotes
Positive emotion among counsellors	Happiness	
	Internal Impact:	
	Counsellors' happiness	I am struggling to be a good counsellor with various skills. I need that (skills) to help my clients effectively. So, I am willing to further my studies or perhaps attend a course to learn more about the counselling field. It will be a great pleasure for me to be able to brighten up my clients' life. (P6) I am very happy in school as a counsellor since most of the time, all give participation, including my top management and my clients as well. (P30)
	External Impact:	
	Clients' changes	As a counsellor, when my clients have successfully developed themselves and can function independently without the help of others after having counselling sessions, it will be the best and a happy moment for me. (P16)
	Clients' happiness	The most important part of the counselling session is when the client is happy with us, and he/she even looks forward to attending the next session. That is the best moment. (P13)
	Clients' satisfaction	When my client gets insight and satisfaction from his/her problem, I am the happiest person to end the session successfully. (P37)

Another participant also expressed: "I feel so happy when I can help my clients, but sometimes, when I can't see any changes in my clients, it makes me feel so down" (P6).

In addition, the extrinsic factors, especially the ones related to clients, also largely contributed to the positive emotions among the counsellors. According to the participants, any changes made by their patients after they went through a considerable proportion of treatment brought them so much happiness. One reported: "The happiest moment is when my client comes to me and proudly says that he/she has found ways to solve their problems" (P1). Some participants also claimed that their clients' happy and cheerful disposition was also helpful in brightening up their day and making them feel better. A participant mentioned:

> *I am very happy when my clients come and see me after they have completed their treatment, expressing that they are now happy with their new life. Really, it makes me feel so happy because I have successfully helped another person in my life.* (P6)

Furthermore, clients' satisfaction was also among the external forces that prompted the sense of pleasure in the counsellor-participants. It is well illustrated in the following excerpts: "I feel blessed

and happy when my client is satisfied with my counselling service" (P38) and "I feel so glad when my client accepts me as their counsellor; you know, just like the way I accept them, and it is also good to know when they always look forward to attending the next session (of counselling)" (P13).

Job Resources as Factors Linked to Positive Work-Related Emotions Among Counsellors. The analysis of the interviews identified a broad theme comprising job resources as the instrumental factors inducing positive emotions at work among the counsellors in the study. Two kinds of job resources helped reduce work stress in the participating counsellors and consequently caused them to be more productive and efficient (Table 4). These were: 1) emotional support and 2) professional growth.

The findings disclosed that emotional support from employers was necessary to promote the counsellors' physical, social, and mental growth and development. Some participants, for example, claimed that the support they received from their superiors had somehow lifted their work

motivation. They reported: "When my top management approved my applications to attend courses related to my professional skills and knowledge, I felt so excited and motivated" (P5); and "We always conduct a retreat programme in our department. It is an initiative taken to allow the counsellors in the department to sit together and exchange thoughts. I like it (the programme); it is inspiring" (P24). Meanwhile, other counsellor participants also contended that they felt valued and respected when their employers showed some concern for them, especially when they were having a hard time. To illustrate: "Our boss is always concerned about us. Sometimes when he noticed that something was wrong, he would immediately ask us about it. He makes us feel appreciated" (P30).

Other than that, acceptance or the sense of acknowledgement given by the employers to the counsellors was also crucial in developing their emotional intelligence in the workplace. It was apparent in the case of one of the participants who argued that he felt comfortable and confident to work when his boss acknowledged his performance and

Table 4
Job resources among Malaysian counsellors

Theme	Subthemes	Illustrative quotes
JOB RESOURCES		
Emotional Support	Support Concern Acceptance Discussion	The headmaster is concerned about us. Sometimes he will talk to us when he sees us not in a good mood. He even asks if we have personal problems. (P30)
Professional Growth	Career development (skill, knowledge and expertise) Career development (promotion) Teamwork	My boss approved all my applications to attend any course regarding my professional skills and career development. (P41)

embraced his flaws and imperfections to improve. He said: "I am truly happy when my boss appreciates me as his/her staff, accepts my weaknesses and takes them as a challenge to develop my strengths" (P15). Besides, discussing or reviewing an issue, especially to explore solutions, also precipitated positive emotions in the counsellors. As argued by a counsellor in the study,

I see my boss as a good listener. He always listens to our problems, and whenever we have problems at work, he will talk to us and help us sort things out instead of bawling us out. He helps us to stay positive at work. (P34)

Apart from that, professional growth factors such as the involvement of the counsellors in career development programmes and activities were also found to provide resources to instil interest among them and thus encourage their motivation and engagement. Some participants, for instance, commented,

Our manager always encourages us to join any training or courses that help us manage our emotional and psychological well-being as a counsellor. I think it (attending the training and courses) is helpful. I mean in a sense that it motivates us to become more capable counsellors. (P18)

One thing that I love about my top management is that they *always approve our application to attend any courses to upgrade our knowledge and skills. They are very supportive. I believe they always want us (counsellors) to improve our work performance.* (P37)

A few participants also expressed the view that a job promotion had a positive and significant effect on their mood and work productivity. A counsellor, for example, stated: "I am so happy working in the government sector (as a counsellor). The promotion is performance and time-based. Once we reach the target, we will be automatically promoted to the next grade. So, it pushes us forward" (P33). Additionally, teamwork or aligning and blending the strengths of individuals to achieve a common goal also played a role in stimulating favourable emotions among the counsellors in this study. As reported by a participant: "Without teamwork, we (counsellors) may not be able to tolerate each other. So, I am so grateful to have a very supportive team member" (P20). The sense of gratitude portrayed by the participant shows that the collaborative working environment positively inspired him.

Negative Emotions Among the Counsellors. The data from the interviews revealed that negative emotional states also occurred in the counsellor-participants in the study. Emotions such as anxiety, depression, hopelessness and sadness were among the subthemes that emerged from the data analysis (Table 5).

Moreover, role stressors or role overload were also found to be the main contributors to detrimental emotional outcomes among the investigated counsellors. One of them, for instance, asserted,

I am very stressed with my workload: it is too much, and it really burdens me. I am trying to *handle it well, but normally I just tell it off to the management. I don't think it is good to suppress our feelings. Just because we are counsellors, so people expect us to be patient all the time.* (P15)

Several types of role stressors were found in the study (Table 6).

Table 5
Negative emotion among Malaysian counsellors

Theme	Subthemes	Illustrative quotes
Negative emotions among counsellors	Anxiety	I always worry and feel that I can't handle my client wisely, but when I meet them, everything turns out well. (P30)
	Depressed	In the early stages of my profession as a counsellor, I used to have sessions with three, four or five persons per day. It would definitely distract me and affect my emotions. I was not in the mood to communicate with anyone, including my family. I felt so burdened. (P25)
	Hopeless	Being in this profession as a counsellor is very challenging. Sometimes the challenges made me want to give up and surrender. (P40)
	Sadness	As a counsellor in the hospital, I am surrounded by many children with chronic illnesses. Seeing them in that condition makes me feel so upset. (P10)

Table 6
Role stressors among Malaysian counsellors

Stressors (role overload)	Illustrative quotes
Too many agencies to serve	I was very stressed because, in my early service, I had to serve nearly six agencies under the ministry. They did not have their counsellor in the agencies. My boss asked me to handle it. (P14)
Lack of other counsellors	In the child centre, the lack of counsellors sometimes makes me feel so depressed because my mind never stops thinking about how I can help these children. (P6)
	In the hospital, we have various patients with various demographics and disease cases. We take five clients a day, and that is the minimum. Priority is given to ad hoc cases. We cannot take more than that due to time constraints. But sometimes, we have no choice but to take extra clients, like up to six or seven clients in a day. As a normal human being, this is beyond my capacity. (P36)
Too much non-counselling work	At my workplace, there is so much work that is not related to counselling. I am very upset with this whole situation. Well, it is acceptable if we were asked to do this (non- counselling work) occasionally. But to focus on this daily is so burdening. (P2)

Job Demands as Factors Linked to Negative Work-Related Emotions Among Counsellors. The negative emotions experienced by many of the counsellors in the present study were found to be relatively attributable to their job demands. The data analysis revealed different themes concerning job demands: emotional, psychological, role, and working conditions. These included subthemes such as challenges, job scopes, skills and proficiencies and workloads. Table 7 provides an illustrative description of job demands among Malaysian counsellors.

Working conditions were the most recurring theme in the study, with workloads being the major factor that influenced the job demands (Table 7). The findings also suggest that counsellors who deal with excessive job demands without having sufficient physical, emotional, and cognitive resources can simply result in burnout. It is apparent in comments made by a participant,

In the hospital, we have various patients with various demographic backgrounds and disease cases. We take five clients a day, and that is the minimum. Priority is given to ad hoc cases. We cannot take more than that due to time constraints. But sometimes, we have no choice but to take extra patients, like up to six or seven clients in a day. As a normal human being, this is beyond my capacity. (P36)

Emotional Dynamics Among the Counsellors. Overall, it was found that the emotional constructs of the counsellors in the present study were highly dynamic as they changed over time and fluctuated within a person. The analysis of the interview data identified numerous themes comprising the dynamic and complex nature of the counsellors' emotions (Table 8).

Table 8 denotes the interplay of individual and social-environmental factors in the counsellor-participants' emotional development. As a matter of illustration, one participant mentioned: "Of course, my

Table 7
Job demands among Malaysian counsellors

Theme	Subthemes	Illustrative quotes
JOB DEMANDS		In a child centre, the lack of counsellors sometimes makes me feel so depressed because I always think about how I can help and focus on these problematic children. (P6)
Emotional	Challenges	
Psychological	Job scopes	
Role	Skills and proficiencies	
Working conditions	Workloads	In hospitals (health settings), even though there is so much workload to deal with (cases), in terms of staff welfare and promotion, it is well taken care of. We can get promoted after a certain time (time-based promotion). (P34)
		Minimally, I see 3, 4 or 5 clients per day, but in some cases, there will be more numbers. As a person, you will feel tired and have some kind of mood disorder after going back home. (P25)

Table 8
Counsellors' emotional dynamics

Theme	Illustrative quotes
Involving emotional dynamics	
Counsellor as a human being	Of course, my emotions as a counsellor tend to change. A counsellor is also a human being, and to me, a counsellor has a unique personality because we have the knowledge to understand other people. (P16)
Depending on the case and situation	Once in a while, when I've got a serious case, it affects my whole emotions. I still think of it (the case) even when I'm at home. (P21)
Interaction between a client and counsellor	When a client brings up a certain issue that is relatable to me, it sometimes influences my emotions. (P25)
External factors	Emotional changes happen not because of the clients but when I think too much about my family and work environment. (P11)
Hoping for client changes	Sometimes, when my client does not want to move on, I feel so disturbed. (P23)
Not involving emotional changes	
Being professional	I am not influenced by my clients' emotions at all. (P12)
Positive	To me, a counsellor is a person who is always positive and even with many sessions to handle, I am still very happy. (P1

emotions as a counsellor tend to change. A counsellor is also a human being, and to me, a counsellor has a unique personality because we have the knowledge to understand other people" (P16). These comments might indicate the portrayal of self-acceptance in the counsellor, who is, like every other individual, emotional. Apart from the personal aspect, the counsellors' emotions in the study were also found to be susceptible to many other factors in the outside world. Some participants, for example, argued that they were easily affected by extreme cases and situations of the clients. One of them said: "Once in a while when I've got a serious case, it affects my whole emotions. I will think of it (the case) even when I'm at home" (P21).

In some instances, the interactions with clients also modified the counsellors' moods and overall dispositions. It was accurate when the counsellors had to entertain clients with issues that were relatable to them. A counsellor expressed: "When a client brings a certain issue that is relatable to me, it sometimes influences my emotions" (P25). For some counsellors, factors in the external environment, such as family and work, were also responsible for their emotional changes. It was possible that their life events (be it family-related or work-related) might sometimes go against their will and consequently cause them a significant amount of stress. One of the participants, for example, said: "Emotional changes happen not because of the clients, but when I think too much about my family and work environment" (P11). Similarly, when counsellors put too much hope on their clients' recovery, they are more likely to feel overwhelmed and thus have little control over the situation, especially when

things do not go as expected. One of the counsellors revealed: "Sometimes when my client does not want to move on, I feel so disturbed" (P23).

Notwithstanding the foregoing, the analysis discovered that a few counsellors in the study appeared not to be emotionally driven. Their ability to stay professional and positive was found helpful in putting their worries into perspective, thus being more efficient at work. They affirmed: "I am not influenced by my clients' emotions at all" (P12), and "To me, a counsellor is a person who is always positive and, even with many sessions to handle, I am still very happy" (P13).

DISCUSSION

This study has examined how working conditions influenced counsellors' emotions at work. Valuable insights have been contributed on four areas comprising: (1) how counsellors perceived their profession; (2) types of work emotions, either positive or negative; (3) the main job demands and job resources among the counsellors and, finally, (4) the emotional dynamics in counsellors.

In the first area of the study, most counsellors perceived their profession as challenging. The main theme revealed that the profession strengthens the statements about why their profession is perceived as challenging. This finding is consistent with previous research by Di Mattia and Grant (2016), which identified the definition and description of the scopes of practice of counsellors and counsellors'

characteristics as challenges encountered in their practice. In addition, Paisley and McMahon (2001), in their study among school teachers, highlighted that school counsellors often received high expectations from their communities when they organised school programs for students and these communities. These expectations were perceived as positive challenges through which counsellors had an opportunity to serve their clients best and to strengthen the professional speciality of the counsellor itself. At the same time, several solutions were identified for how counsellors could manage the challenges. Challenge management includes emotional, physical and mental readiness, counselling awareness, being responsible, being positive, having a good attitude and personality, and having a good level of knowledge.

The current study discovered that most participants experienced positive and negative emotion themes, in which positive emotions were revealed more often than negative emotions among counsellors. Internal and external factors impact the feeling of the counsellors that their job was filled with positive emotions, with the counsellors' happiness as an internal impact. In contrast, clients' behavioural changes, happiness and satisfaction were external impacts. In terms of internal impact, the counsellors appeared to feel happy and to experience a deep sense of passion when dealing with their clients: from a theoretical viewpoint, they realised that their particular work and counselling sessions addressed many meanings, as

well as a sense of dedication and personal involvement (Dik & Duffy, 2009; Dobrow & Tosti-Kharas, 2011; Elangovan et al., 2010). This scenario can be explained by using the presence of a "calling" approach (Hirschi, 2012). The word "*calling*" refers to "whether the work is perceived as one's purpose in life" (Hirschi, 2012, p. 480). The concept of having a calling is a way of understanding why individuals are passionate about their work (Hirschi, 2012; May et al., 2004). Research on having a "calling" has become a topic of interest among scholars seeking to understand better how people become passionate about their work and how they perceive it as meaningful in their lives (Clinton et al., 2017; Duffy et al., 2014; Haney-Loehlein et al., 2015). Findings from previous studies have focused on the intensity of the calling and work meaningfulness rather than on how it may relate to proximal work emotion.

In terms of external impact, the counsellors' happiness, derived from their clients, was the source of satisfaction and meaningfulness in their respective jobs. Work meaningfulness is associated with several positive antecedents, especially factors related to the job itself. It also depends on certain counsellors' job characteristics that make counsellors loyal to their job, even when, at times, their profession exposes them to traumatic events (Ling et al., 2014). In the 1970s, scholars defined work meaningfulness as "the degree to which the employee experiences the job as one which is generally meaningful, valuable, and worthwhile" (Hackman & Oldham, 1976, p.

162): this definition, work meaningfulness is also defined as employees' passion for doing their job that gives meaning to their lives (Ashmos & Duchon, 2000). Moreover, both meaningfulness and 'having a calling' have been found to be closely related to several work outcomes, including health, job satisfaction, work engagement and job commitment. One prior cross-sectional study, for example, confirmed that the presence of a calling predicts meaningful work (Duffy et al., 2012).

Emotional support and professional growth were identified as the main job resources and important themes among the counsellors, with both factors also linked to their positive emotions, as mentioned in the JD-R model (Bakker & Demerouti, 2007). This finding is consistent with the statement by previous scholars who defined a counsellor as an individual "for whom mental and physical health is essential to maintaining competence as much or more than knowledge and skills" (Lawson et al., 2007, p. 7). Bakker and Demerouti (2007) highlighted that working conditions triggered positive and negative emotions. In this current study, the major job demand of workload was the factor contributing to negative emotions among counsellors. Role stressors, particularly role overload, were a major factor associated with negative emotions among counsellors. It corresponds to the study findings of Walsh and Walsh (2002), which revealed that the impact of a too-large caseload on community counsellors'

mental health could cause a particular boost to their negative emotions, leaving them under the weight of despair.

The final area of the current study explored the counsellors' emotional dynamics. Participants identified that the following five themes indicated the tendency for emotional dynamics to occur. Their emotions tended to change: (1) because they were also human beings; (2) depending on the cases and situations they were handling; (3) as a result of the interaction between them and the clients;(4) due to external factors; and (5) because they were hoping for their clients to change. For example, in their study, Richards et al. (2010) discovered that the professionals involved in the session tended to boost their powerful emotions, which could lead to their self-development in a positive way.

CONCLUSION

This qualitative research provides rich data well suited to our goal of exploring the emotions of counsellors. Two main themes were identified in answering the first research question (how do counsellors perceive their profession?): (1) the nature of the job itself, and (2) the clients revealed that counsellors perceived their profession as a challenging occupation. For the second research question (how do their work emotions come about when dealing with clients?), two themes emerged associated with the counsellors' emotions at work, which were positive and negative emotions. The finding for the third research question (what are the main job demands

and resources among the counsellors?) showed that working conditions were the most recurring theme influencing the job demands. In contrast, emotional support and professional growth were themes under job resources that helped reduce work stress among the counsellors. This study's unique contribution lies in the use of the job demands-resources (JD-R) model (Bakker & Demerouti, 2007) to frame this research on the working conditions of counsellors that trigger positive as well as negative emotions. These findings reinforce the view of counsellors as a professional group that appraisal of job demands and job resources has an impact on the emotions experienced by counsellors. Hopefully, these results underscore the viability of using the JD-R model in future research on counsellors' well-being. This study also provides practical implications for local public agencies such as The Ministry of Women, Family and Community Development, The Ministry of Education, and The Ministry of Urban Well-being, Housing and Local Government, especially their higher management, to provide a helpful working environment and communicate the values of health, and psychological well-being to counsellors.

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SOCIAL SCIENCES & HUMANITIES

Development of Psychology Students' Self-Regulation in the Process of Professional Training

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ABSTRACT

The paper presents the results of an empirical study of the dynamics of self-regulation indicators of first-year psychology students in the process of studying the course "Psychology of self-regulation." The study aims to clarify how the indicators of self-regulation ability of first-year psychology students change during the study of a semester course, "Psychology of self-regulation" (from late February to early June 2021), and to find out how the correlations between individual parameters of self-regulation alter. Research results of students (which are made at the beginning and the end of the study of the course) are described and compared according to theoretical, empirical (psychodiagnostic), and statistical methods. The following indicators of self-regulation are studied: self-control in the emotional sphere, self-control in activity, self-control in behavior (social self-control), and a few coping ways (confrontational coping, search for social support, problem-solving planning, self-control, distancing, positive reassessment, acceptance of responsibility, escape-avoidance), as well as alexithymia. It was found that (at the beginning of the study) psychology students had mostly the average level of all studied indicators, except for the coping way "escape-avoidance" (which was at a high level) and a level of alexithymia (a little higher). After studying the course "Psychology of self-regulation," which took place during one semester along with the study of other psychological courses,

changes in the studied indicators were revealed: the indicators of self-control and confrontational coping increased; the level of escape-avoidance decreased. Correlation analysis was performed between all scales of the first and second surveys.

Keywords: Coping ways, correlation analysis, scales, self-control, self-regulation

INTRODUCTION

Self-regulation is a skill necessary for everyone, as it contributes to better interact with others, maintaining mental health, and adaptation to current living conditions (Baumeister et al., 1994; Kırkıç & Demir, 2020; Marfu'i et al., 2018; Vizniuk et al., 2021; Zimmerman, 2008). The skills of self-regulation are of special professional importance for psychologists. In their activity, they must constantly interact with the mental worlds of different people, for whom they often have to act as a kind of behavioral model of self-control and self-expression (Blumenfeld et al., 1982; Havrylkevych et al., 2021). In addition, due to the specifics of professional practice, the psychologist deals mainly with negative, disharmonious, difficult experiences of other people who expect compassion, understanding, and empathy from the psychologist. The psychologist must be able to respond emotionally to the client's experience and maintain the inner balance and clarity of mind, that is, skillfully master his/her mental, emotional, and behavioral processes to provide the clients with what they need. On the other hand, even having

a high level of expertise, the psychologist (in the process of interacting with the client) is not completely protected from emotional infection, which can lead to mental exhaustion and emotional burnout of the psychologist. Therefore, the ability to regulate own mental state is a skill that ensures a high level of professionalism for the psychologist and his/her mental health and well-being (Abdullahi et al., 2021; Alam et al., 2021; Rashtchi, 2021).

It is advisable to start developing the skills of conscious self-regulation while studying in the specialty during studentship (Kundu, 2020; Li & Yu, 2002; Vasylenko et al., 2020). For this purpose, special training courses are useful, such as "Psychology of self-regulation," "Psychology of emotions with emotional stability training," "Psychohygiene and psychoprophylaxis," "Psychology of health," as well as training sessions, lectures, workshops, and master classes.

Among the scientific papers on the problem of mental self-regulation published in the last 5 years, theoretical and empirical studies were found. This paper does not attempt to generalize modern views on mental self-regulation and build a theoretical concept of this phenomenon. Instead, the published results of empirical studies of psychology students' self-regulation are considered.

Grinchenko (2017), with the help of the questionnaire "Style of self-regulation of behavior" by Morosanova, investigated features and dynamics of self-regulation of psychology students from the first to the

fifth year of study and found that in senior years of study, the indicators of psychology students on all scales of the style of self-regulation are much higher than that of first-year students.

The study of Latkina and Podkorytova (2018) presented the results of the empirical study of the self-regulation level of students of the socioeconomic sphere (psychologists and social workers). In this study, it was found that most of the surveyed students (32 people) have average and high indicators of the studied parameters of self-regulation. Thus, 75% have a high level of voluntary self-regulation, and 53.1% are the average indicator of general self-regulation. According to some indicators of self-regulation by a technique "Style of self-regulation of behavior," it is revealed that most students have a high level of planning (50%) and medium—for modeling (50%), programming (65.6%), evaluation of results (50%), flexibility (75%), independence (53.1%).

Igumnova (2019) conducted an empirical study of coping behavior strategies and features of the system of self-regulation of psychology students with different coping strategies and found that different coping strategies correspond to different levels of development of the components of the self-regulation contour.

Igumnova and Yaroslavska (2019) investigated the psychological features of emotional intelligence and self-regulation of future psychologists. In particular, it was found that 1) planning, programming, control, flexibility, and independence are more developed in the group of students with a high level of interpersonal emotional intelligence, and 2) planning, modeling, and flexibility are more developed in the group of students with a high level of intrapersonal emotional intelligence.

Rudyuk (2020) studied the stylistic features of self-regulation of the behavior of future psychologists at different stages of their professional training and found that the degree of development of basic regulatory processes and regulatory-personal properties of fourth-year students compared with first-year students was significantly higher.

As seen from the review above, the features of self-regulation of psychology students in the learning process are already sufficiently studied, especially with the help of Morosanova's questionnaire "Style of self-regulation of behavior." Studies on the dynamics of self-regulation indicators show how these indicators change in different years of study. Are there any noticeable changes in the system of mental self-regulation of modern psychology students within one year of study and even within one semester? The answers to this question have not been found in modern scientific publications.

The Purpose of the Study

The purpose of our study is to clarify how the indicators of self-regulation ability of first-year psychology students change in the learning process, in particular, during the study of a semester course "Psychology of self-regulation" (from late February to early June 2021) and to find out how the

correlations between individual parameters of self-regulation alter.

MATERIALS AND METHODS

Research Methods

The following methods were used to study the features of mental self-regulation of psychology students: (1) theoretical: analysis, classification, comparison and generalization, (2) empirical: psychodiagnostic methods: the ways of coping questionnaire (adaptation of WCQ methods; Malikova et al., 2008); questionnaire "Self-control determination in the emotional sphere, activity and behavior" (Nikiforov, 1989); Toronto alexithymic scale, adapted from the Bekhterev Institute (Raigorodsky, 2004), and (3) statistical (statistical data processing was performed using Microsoft Excel software, in particular, the following methods were used: calculation of arithmetic mean, standard deviation and mean error; determining the nature of the distribution of performance characteristics in the studied samples, which has shown that it does not differ from the normal distribution; assessment of statistical significance of differences between the average values of the studied parameters of students at the beginning and the end of the semester using the student's t-test for dependent samples; correlation analysis of the relationships between the studied parameters of emotional self-regulation).

A brief description of the psychodiagnostic methods mentioned above is given as follows.

Questionnaire "Self-control determination in the emotional sphere, activity and behavior," developed by Nikiforov (1989), contains 36 questionnaire items and allows one to determine the level of self-control according to three scales: self-control in the emotional sphere, self-control in activity, self-control in behavior. In general, this psychodiagnostic method helps to determine the extent to which the respondent's emotional phenomena are controlled by his/her conscious will and how they are manifested outside and affect his/her activity and behavior. In this questionnaire, each scale corresponds to a different number of questionnaire items: self-control in the emotional sphere (11 items), self-control in activity (12 items), and self-control in behavior (13 items). The distribution of indicators of these scales on three levels of self-control is shown in Table 1.

The ways of a coping questionnaire (adaptation of WCQ methodology; Malikova et al., 2008) make it possible to identify the

Table 1
Distribution of indicators of self-control in the emotional sphere, activity, and behavior by three levels of expression

Scale	Level	Range of scores
Self-control in the emotional sphere	High	15–22
	Average	8–14
	Low	0–7
Self-control in activity	High	16–24
	Average	9–15
	Low	0–8
Self-control in behavior	High	18–26
	Average	9–17
	Low	0–8

most commonly used methods of emotional self-regulation. This questionnaire consists of 50 statements divided into eight scales (Table 2).

For each item of the questionnaire, the respondent may receive from 0 to 3 scores depending on his/her answers about the choice of ways of reacting in difficult life situations. This psychodiagnostic method also quantifies the questionnaire items unevenly on diagnostic scales. However, with the questionnaire for each scale, there are test norms determined by a statistical method in the sample of 381 people over 20 years of age and 219 people under 20 years of age (Table 3).

The Toronto Alexithymic Scale, adapted from the Bekhterev Psychoneurological

Table 2

The ways of a coping questionnaire (adaptation of WCQ methodology)

Scales	Characteristics	No of items
Confrontational control of the situation	Aggressive efforts to change the situation, a certain degree of hostility, and a willingness to take risks	6
Search for social support	Efforts to gain emotional comfort and information from others	6
Problem-solving planning	Arbitrary problem-focused efforts aimed at changing the situation, including an analytical approach to solving the problem	6
Self-control	Efforts to regulate the feelings and actions	7
Distancing	Cognitive efforts to move away from the situation and reduce its significance	6
Positive reassessment	Efforts aimed at creating a positive meaning of the problem situation, focusing on self-growth	7
Acceptance of responsibility	To accept the role in attempts to solve the problem	4
Escape-avoidance	The desire in thoughts and behavioral efforts to escape or avoid the problem rather than distancing from it.	8

Table 3

Test norms of the ways of coping questionnaire

Ways of coping	Low values		Average values		High values	
	a	b	a	b	a	b
Confrontational coping	1–6	0–7	7–11	8–11	12–17	12–16
Distancing	1–6	1–7	7–11	8–11	12–17	12–16
Self-control	4–11	1–10	12–16	11–15	17–21	16–19
Search for social support	0–7	0–7	8–13	8–13	14–18	14–17
Acceptance of responsibility	0–5	0–5	6–9	6–9	10–12	10–12
Escape-avoidance	3–7	1–7	8–13	8–14	14–23	15–22
Problem-solving planning	2–10	3–9	11–15	10–13	16–18	14–18
Positive reassessment	3–9	1–9	10–15	10–14	16–21	15–19

Note. a – sample (n = 381 people over 20 years); b – sample (n = 219 people under 20 years).

Institute, makes it possible to determine the general level of alexithymia. Alexithymia is a reduced ability or difficulty verbalizing a person's emotional states (Lumley et al., 2007). The Toronto Alexithymic Scale contains 26 statements. Therefore, total scores can range from 26–130**.** According to the authors of this psychodiagnostic method, the "alexithymic type" of personality receives 74 scores or more. The "non-alexithymic" personality type receives 62 scores or less. Thus, scientists of the Bekhterev Psychoneurological Institute, who adopted the method, found the average alexithymia values in several groups: the control group of healthy people (59.3 ± 1.3), group of patients with psychosomatic disorders (72.09 ± 0.82), and a group of patients with neuroses (70.1 ± 1.3).

Description of the Sample

The empirical part of our study involved 30 first-year students (average age: 17.7 years) majoring in Psychology at a public university in Ukraine: 26 unmarried girls (12 girls: 17 years old, 14 girls: 18 years old, average age: 17.5 years); 4 single boys (3 boys: 18 years old, 1 boy: 20 years old, average age: 18.5 years).

The experimental sample included students who studied the course "Psychology of Self-Regulation" in accordance with the curriculum of the specialty "Psychology," and those who expressed a desire to participate voluntarily in empirical research. All students who wished to participate in the empirical study belonged to the same age group from 17 to 20 years. There were

no people with mental disabilities or special educational needs among these students.

Research Procedure

As mentioned above, the empirical part of our study involved 30 first-year psychology students at a public university in Ukraine. At the beginning of the second semester, they were asked to fill in paper forms with the texts of the methods described above. During this semester, from late February to early June 2021, students studied the following courses: Foreign Language, General Psychology with a workshop, Fundamentals of Anatomy and Physiology of the Nervous System, Fundamentals of Psychological and Pedagogical Research, Age Physiology and Valeology, Psychology of Self-Regulation, Physical Education.

The following is the description of the course "Psychology of self-regulation."

In the process of studying the course "Psychology of self-regulation," students were given eight lectures on the following topics: (1) theoretical and methodological foundations of self-regulation: (a) history of scientific research of human mental self-regulation (one lecture); (b) methodological principles and approaches to the study of human mental self-regulation (one lecture), (2) psychosomatic self-regulation: (a) psychophysiological mechanisms of psychosomatic self-regulation (one lecture), (b) methods of psychosomatic self-regulation: progressive muscle relaxation (according to Edmund Jacobson), conscious self-suggestion (according to Emile Cue), autogenic training (according to Johann

Heinrich Schultz), biological feedback training (one lecture), (3) emotional self-regulation (one lecture), (4) mental self-regulation (one lecture), (5) moral self-regulation (one lecture), (6) basics of self-improvement (1one lecture).

Lectures were held once every two weeks. Each lecture lasted 80 minutes. Once every two weeks, students had two double labs, separated by a fifteen-minute break. Each laboratory session lasted 80 minutes. In total, sixteen laboratory classes took place during the semester. During the practical classes, students (under the supervision of a teacher) conducted their academic group mini-training (prepared by them) to develop conscious self-regulation. Each such mini-training lasted about 40 minutes. Only in the first two double laboratory classes students worked under the direct guidance of a teacher, who told them about the plan and principles of studying the course "Psychology of self-regulation," the educational tasks they had to perform. The teacher also offered them to perform some psychomotor self-regulation exercises and coordinated with students' organizational issues of lectures and laboratory classes, as well as homework.

This organization of laboratory classes was intended to provide students (future psychologists-practitioners) with (1) the ability to train their mechanisms of conscious self-regulation and (2) gain experience in coaching activities aimed at transferring their knowledge and experience of conscious self-regulation to other people.

Homework for students, which they had to do independently, included (1) study of theoretical material on relevant topics, (2) preparation of mini-trainings for the group, which were then conducted during laboratory classes, (3) keeping a diary of self-observation and self-regulation, in which students were asked to write in any form their daily observations of processes and states occurring in their psychomotor, emotional, mental and moral spheres during the study of the course "Psychology of self-regulation."

During the semester, each student from the group conducted one training with its corresponding written design in the form of a plan summary of the training (which was to be written before the practical training) and the protocol of the practical training reflecting the student's observations of himself/herself and the group during the training work, analysis of the conducted training work with the relevant conclusions and recommendations for himself/herself to improve his/her coaching skills further.

We assumed that the study of the above-described course and other psychological courses would have a positive effect on self-regulation.

At the end of studying the course "Psychology of self-regulation," students were asked to re-examine the questionnaire "Self-control determination in the emotional sphere, activity, and behavior," the ways of a coping questionnaire (adaptation of WCQ), and the Toronto alexithymic scale.

Adherence to the Ethics of Psychological Research

Students' participation in the study was voluntary. Students were invited to join the

survey at their request. Respondents were warned that the results of the study would be made public. Despite the fact that during the survey, students indicated their last and first names (which was necessary for data identification and further comparative analysis), the principle of confidentiality in this publication is fully preserved.

RESULTS

The results of each method used, obtained from the first survey of students (at the beginning of studying the course "Fundamentals of Self-Regulation"), are presented below.

According to the questionnaire "Self-control determination in the emotional sphere, activity and behavior," it was found that psychology students had the following averages for each of the scales: self-control in the emotional sphere—13.6 points out of 22 (62%), self-control in activity—15.2 points out of 24 (63%), self-control in behavior (social self-control)—14.9 points out of 26 (57%). These percentages were calculated for convenience and clarity of comparison; the calculation was performed according to the proportion, where 100% is the maximum number of points on each scale. The generalized data are presented in Table 4.

As seen from Table 4, self-control in the emotional sphere and the sphere of activity of the studied students is almost at the same level, and self-control in behavior is slightly lower. All indicators correspond to the average level.

For each scale of *the ways of a coping questionnaire (adaptation of WCQ technique)*, the following average indicators were revealed: (1) confrontational coping (CC)—8.75 points, or 48.6%, out of 18, (2) search for social support (SSS): 10.9 points—60.6% out of 18, (3) problem-solving planning (PSP): 12.6 points, or 70%, out of 18, (4) self-control, or efforts to regulate the feelings and actions (SC): 14 points—66.7% out of 21, (5) distancing (D): 11.3 points—62.8% out of 18, (6) positive reassessment (PR): 13.2 points—62.9% out of 21, (7) acceptance of responsibility (AR): 8.5 points—70.8% out of 12, and (8) escape-avoidance (E-A): 14.3 points, or 59.6%, out of 24.

As in the analysis of the results of the previous questionnaire (for the convenience of comparing indicators), all points were translated into percentages (Table 5).

Most obtained averages on the scales of *the ways of a coping questionnaire* (adaptation of the WCQ method) are within the average level. The average on the escape-

Table 4

Average indicators on the scales of the questionnaire "Self-control determination in the emotional sphere, activity and behavior" at the beginning of studying the course "Fundamentals of self-regulation"

Scales	Self-control in the emotional sphere	Self-control in activity	Self-control in behavior (social self-control)
Average indicator	13.6	15.2	14.9
Relative indicator (%)	61.8	63.3	57.3

avoidance scale corresponds to a high level. The indicator on the scale "distancing" is slightly above the average level. Thus, in the studied sample, such ways of coping as "escape-avoidance" and "distancing" prevail. Other ways are presented at almost the same level. The distribution of students by low, medium, and high levels on the scales of *the ways of a coping questionnaire* (in %) is presented in Figure 1.

According to the scale "confrontational coping" (CC): students with an average level of this way of coping prevail significantly (60%), surveyed students with low levels are almost three times less (23.3%) and with a high level (only 10%).

According to the scale "search for social support" (SSS), the following distribution of respondents took place: those with an average level prevail (56.7%), students with a high level are almost twice less (23.3%), and respondents with a low level, only 13.3%.

The same number of students with an average level (56.7%) was found on the scale "problem-solving planning" (PSP).

Table 5
Average indicators on the scales of the ways of a coping questionnaire (adaptation of the WCQ method) at the beginning of studying the course "Fundamentals of self-regulation"

Scales	CC	SSS	PSP	SC	D	PR	AR	E-A
Average indicator	8.75	10.9	12.6	14.0	11.3	13.2	8.5	14.3
Relative indicator (%)	48.6	60.6	70.0	66.7	62.8	62.9	70.8	59.6

Note. CC – confrontational coping, SSS – search for social support, PSP – problem-solving planning, SC – self-control, D – distancing, PR – positive reassessment, AR – acceptance of responsibility, EA – escape-avoidance
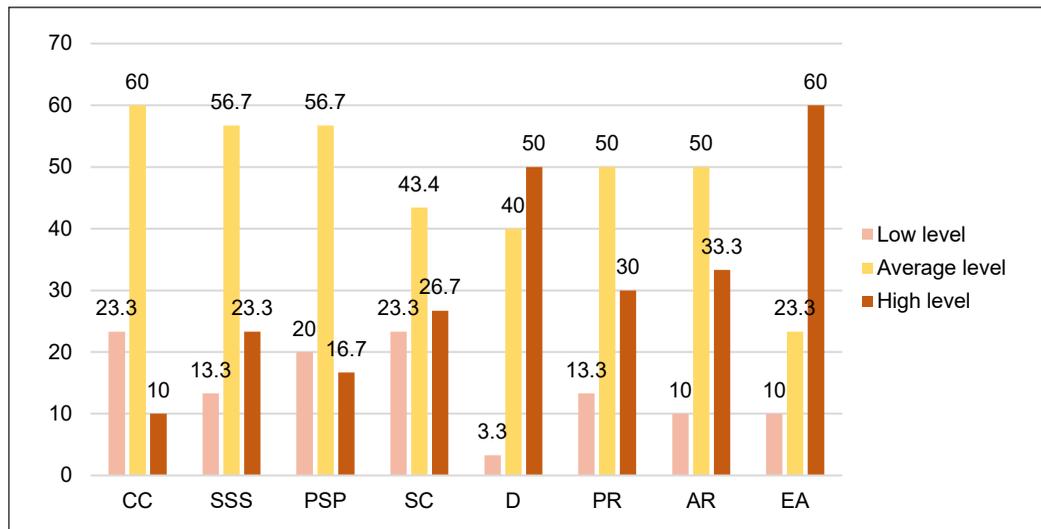
Figure 1. Distribution of students by levels on the scales of the ways of a coping questionnaire (adaptation of the WCQ method)
Note. CC – confrontational coping, SSS – search for social support, PSP – problem-solving planning, SC – self-control, D – distancing, PR – positive reassessment, AR – acceptance of responsibility, EA – escape-avoidance.

The number of students with a low level is slightly higher (20%) and slightly less with a high level (16.7%).

On the scale "self-control" (SC), a slightly smaller scatter of data is revealed: also dominated by those with a medium level (43.3%), and those with low and high levels are almost the same number, 23.3%, and 26.7%, respectively.

Interestingly, the scale "distancing" (D) revealed the lowest number of students with a low level (only 3.3%) and those with a high level, slightly more than the average (50% vs. 40%, respectively).

Respondents again dominate the scale "positive reassessment" (PR) with an average level (50%), students with a high level, slightly less (30%), and the least respondents with a low level of 13.3%.

Similar results were obtained on the scale "acceptance of responsibility" (AR)—the number of students with an average level is 50%, with a high level (33.3%) and with a low level (10%).

The scale "escape-avoidance" found the largest number of students with a high level (60%), students with medium and low levels, and much less (23.3% and 10%, respectively).

Thus, at the beginning of studying the course "Fundamentals of self-regulation," students' leading ways of coping were "escape-avoidance" and "distancing," which partially confirms the results of the study by Igumnova (2019), who also found that avoidance is a leading coping strategy for psychology students. Among other ways of coping, it is possible to note a fairly high level of "acceptance of responsibility" and "positive reassessment." In our opinion, the predominance of the coping way "escape-avoidance" in the sample needs to be corrected, as it is a way that leads neither to the solution of the problem nor to its integration into personal experience.

The study also used the Toronto alexithymic scale *(adapted from the Bekhterev Institute, St. Petersburg).* The overall level of students' "alexithymia" by this method was 66.6 points. This figure is 4.6 points higher than the upper limit of non-alexithymia (62 points) but does not reach the level inherent in the "alexithymic type" of personality (74 points or more). That is, the average value of the Toronto alexithymic scale in the study sample is moderately high. It is completely in line with our practical experience of pedagogical work with students: it is often difficult for them to describe their feelings and emotions in words.

Correlation analysis was performed for all indicators identified in the study. The results obtained are presented in Table 6.

Table 6 shows that the highest indicator of correlation ($r = 0.73$, $p < 0.001$) in the studied sample is between the scales "positive reassessment" (PR) and "problem solving planning" (PSP) of the ways of coping questionnaire (adaptation of the WCQ method). The average positive correlation ($r = 0.54$, $p < 0.01$) was determined between the scales of self-control in the emotional sphere (SE) and self-control in behavior (social self-control) (SB) of the questionnaire "Self-control

Table 6
Correlation between the studied indicators of students' self-regulation at the beginning of studying the course "Fundamentals of self-regulation" (first measurement)

Scales	SE	SA	SB	CC	SSS	PSP	SC	D	PR	AR	E-A
SA	0.20, p>0.10										
SB	0.54, p<0.01	0.49, p<0.01									
CC	-0.23, p>0.10	-0.05, p>0.10	-0.26, p>0.10								
SSS	-0.48, p=0.01	-0.03, p>0.10	-0.41, 0.01<p<0.05	0.31, 0.05<p<0.1							
PSP	0.25, p>0.10	0.45, 0.01<p<0.05	0.43, 0.01<p<0.05	0.48, p = 0.01	-0.04, p>0.10						
SC	0.31, 0.05<p<0.1	-0.03, p>0.10	0.26, p>0.10	0.06, p>0.10	-0.30, 0.05<p<0.1	0.32, 0.05<p<0.1					
D	0.31, 0.05 < p < 0.1	-0.06, p>0.10	-0.07, p>0.10	0.08, p>0.10	-0.28, p>0.10	0.28, p>0.10	0.32, 0.05<p<0.1				
PR	0.21, p>0.10	0.19, p>0.10	0.31, 0.05<p<0.1	0.45, 0.01<p<0.05	-0.07, p>0.10	0.73, p<0.001	-0.02, p>0.10	0.26, p>0.10			
AR	-0.08, p>0.10	-0.01, p>0.10	-0.22, p>0.10	0.35, 0.05<p<0.1	-0.07, p>0.10	0.24, p>0.10	-0.02, p>0.10	0.19, p>0.10	0.27, p>0.10		
E-A	0.00, p>0.10	0.20, p>0.10	-0.29, p>0.10	0.08, p>0.10	0.01, p>0.10	0.05, p>0.10	0.15, p>0.10	0.26, p>0.10	0.03, p>0.10	0.24, p>0.10	
Al	-0.16, p>0.10	-0.45, 0.01<p<0.05	-0.25, p>0.10	0.12, p>0.10	0.00, p>0.10	0.16, p>0.10	0.06, p>0.10	0.15, p>0.10	0.07, p>0.10	0.24, p>0.10	0.31, 0.05<p<0.1

Note. SE – self-control in the emotional sphere, SA – self-control in activity, SB – self-control in behavior (social self-control), CC – confrontational coping, SSS – search for social support, PSP – problem-solving planning, SC – self-control, D – distancing, PR – positive reassessment, AR – acceptance of responsibility, E-A – escape-avoidance, Al – alexithymia.

determination in the emotional sphere, activity and behavior."

A moderate correlation ($0.30 < r < 0.49$) (Sidorenko, 2002) was found between the following scales: (1) self-control in the emotional sphere (SE) and such ways of coping as "self-control" and "distancing" ($r = 0.31$, $0.05 < p < 0.1$), as well as "search for social support" (SSS) ($r = -0.48$, $p = 0.01$), (2) self-control in activity (SA) and self-control in behavior (SB) ($r = 0.49$, $p < 0.01$), (3) self-control in activity (SA) and such a way of coping as "problem solving planning" (PSP) ($r = 0.45$, $0.01 < p < 0.05$), (4) self-control in activity (SA) and alexithymia (Al) ($r = -0.33$, $0.05 < p < 0.1$), (5) self-control in behavior (SB) and such ways of coping as "problem solving planning" (PSP) ($r = 0.43$, $0.01 < p < 0.05$), "positive reassessment" (PR) ($r = 0.31$, $0.05 < p < 0.1$), "seeking social support" (SSS) ($r = -0.41$, $0.01 < p < 0.05$), (6) the way of coping "confrontational coping" (CC) is moderately correlated with "problem solving planning" (PSP) ($r = 0.48$, $p = 0.01$), "positive reassessment" (PR) ($r = 0.45$, $0.01 < p < 0.05$), "acceptance of responsibility" (AR) ($r = 0.35$, $0.05 < p < 0,1$) and "seeking social support" (SSS) ($r = 0.31$, $0.05 < p < 0.1$), (7) "search for social support" (SSS)—inverted with the way of coping "self-control" (SC) ($r = -0.30$, $0.05 < p < 0.1$), (8) "problem solving planning" (PSP) and "self-control" (SC) ($r = 0.32$, $0.05 < p < 0.1$); 9) "self-control," in turn, directly correlates with "distancing" ($r = 0.32$, $0.05 < p < 0.1$), and (10) "escape-avoidance" moderately correlates only with alexithymia

on the Toronto alexithymic scale ($r = 0.31$, $0.05 < p < 0.1$).

All other correlations are weak ($0.20 < r < 0.29$) and very weak ($r < 0.19$) (Sidorenko, 2002).

The following patterns were revealed in the direction of correlation: (1) all scales of self-control of the questionnaire "Self-control determination in the emotional sphere, activity, and behavior" have a direct correlation between different levels (medium, moderate and weak) (see Table 6), (2) all scales of self-control are inversely correlated with alexithymia and such ways of coping as "seeking social support" (moderate and weak), "acceptance of responsibility" (weak) and "confrontational coping" (weak). It is characterized by certain aggression, hostility, and willingness to take risks, (3) such ways of coping as "confrontational coping" (CC) and "problem-solving planning" (PSP) are directly correlated with all other ways of coping (PSP inversely correlates only with SSS), (4) the way of coping "search for social support" (SSS), on the contrary, is inversely correlated with all other ways of coping, except for "confrontational coping."

The data obtained in the correlation analysis confirm our opinion that "escape-avoidance" (E-A) as a way of coping is of little use because it is directly related to alexithymia (Al). When a person seeks to avoid problems, he/she avoids his/her feelings and emotions, perhaps displacing them. However, this assumption needs to be tested on a larger sample using additional diagnostic techniques.

Self-control in the emotional sphere (SE), activity (SA), and behavior (SB), on the contrary, may slightly reduce alexithymia (AL) (see Table 6). It may be due to the fact that for better self-control and self-regulation, students need to understand the emotions and feelings they are experiencing.

The results described above, as noted, were obtained at the beginning of the second semester, during which students studied several courses listed in the section of the Research procedure. Among these courses, there was a course called "Psychology of self-regulation," which directly relates to the subject of our study and aims to improve it.

According to the questionnaire "Self-control determination in the emotional sphere, activity, and behavior," it was found that all averages (according to the studied scales) increased slightly: self-control in the emotional sphere became 15 points (13.6 points); self-control in activity: 15.9 (was 15.2 points); social self-control: 16.6 (was 14.9 points). All results for comparison are shown in Table 7.

As can be seen from Table 7, in the process of studying the psychological disciplines, the level of students' self-control has increased slightly, especially in the field of self-control in behavior (social self-control) (p< 0.01) and emotions. Self-control in activity has hardly changed (p< 0.001).

Changes were also found in the coping questionnaire (adaptation of the WCQ method). Thus, the averages increased on the scale of "confrontational coping" (CC); they decreased on the scales of "distancing" (D) and "escape-avoidance" (E-A). The averages on the scale "search for social support" (SSS) slightly decreased. The averages on the scales of "problem-solving planning" (PSP), "self-control" (SC), and "acceptance of responsibility" (AR) increased slightly. The averages on the scale of "positive reassessment" (PR) remained unchanged. The generalized data are presented in Table 8.

As can be seen from Table 8, the average values of coping ways have changed a little; the difference between all arithmetic means presented in Table 8 is statistically insignificant (p> 0.05). Compared to others, the rate of confrontational coping increased, and the rate of escape avoidance decreased. Such changes may be related to features of student age, including an increased risk appetite.

Changes in the distribution of high, medium, and low levels on each scale of the

Table 7

Average indicators on the scales of the questionnaire "Self-control determination in the emotional sphere, activity and behavior" at the beginning and the end of studying the course "Fundamentals of self-regulation"

Average indicator	Scales		
	Self-control in the emotional sphere	Self-control in activity	Self-control in behavior (social self-control)
At the beginning	13.6	15.2	14.9
At the end	15	15.9	16.6
Difference	1.4	0.7	1.7

different: the number of respondents with low indicators increased, and with medium and high indicators decreased. On the problem-solving planning (PSP) scale, the number of respondents with low indicators decreased, medium indicators increased, and high indicators remained unchanged. According to the "distance" scale (D), the number of students with low and medium indicators increased, and with high indicators decreased. According to the scale "positive reassessment" (PR), the number of students with low indicators decreased, with medium indicators increased, and with high indicators remained unchanged. On the scale of "acceptance of responsibility" (AR), the number of students with low indicators did not change; with medium indicators, it decreased slightly, and with high indicators, it slightly increased. Furthermore, on the scale of "escape-avoidance," the number of respondents with low and high indicators decreased and almost doubled with the averages.

Minor changes in coping ways (in the studied sample) may be due to the fact that it takes more time to change coping ways, as they may be related not only to the skills of conscious self-regulation but also to unconscious self-regulatory mechanisms and individual typological personality traits.

According to the Toronto alexithymic scale (adapted from the Bekhterev Institute, St. Petersburg), no changes in the level of "alexithymicity" were detected: 66.6 points before and after studying the course. Obviously, it takes more time and possibly special exercises to reduce the rate of alexithymia as a personality trait and ability development to realize and name the feelings and emotions.

A re-correlation analysis of the data obtained was also conducted at the end of studying the course "Fundamentals of self-regulation" (Table 9).

Checking the results of students' tests at the beginning and the end of the academic semester using the t-test for dependent samples revealed a statistically significant difference in the arithmetic mean of the self-control in the emotional sphere (SE) ($p \leq 0.001$) and self-control in behavior (SB) ($p \leq 0.001$). The difference in average arithmetic indicators on other scales is statistically insignificant ($p > 0.05$).

In Tables 6 and 9, changes in the correlations between most studied scales are found.

Thus, the correlation between all scales of self-control has increased: 1) between self-control in behavior (SB) and self-control in the emotional sphere (SE) r = 0.65, $p < 0.001$ (was 0.54, $0.001 < p < 0.01$); – between self-control in behavior (SB) and self-control in activity (SA) – r = 0.51, $0.001 < p < 0.01$ (was 0.49, $p < 0.01$); 2) between self-control in the emotional sphere (SE) and self-control in activity (SA) the correlation index became moderate (r = 0.30, $0.05 < p < 0.10$) and was weak (r = 0.20, $p > 0.10$).

It can be assumed that the study of the course "Fundamentals of self-regulation" and other courses during the semester contributed to the development of mechanisms of self-control and the links between them.

Table 9

Correlation between the studied indicators of students' self-regulation after studying the course "Fundamentals of self-regulation"

Scales	SE	SA	SB	CC	SSS	PSP	SC	D	PR	AR	E-A
SA	0.30, 0.05<p<0.1 ↑										
SB	0.65, p<0.001 ↑	0.51, 0.001<p<0.01 ↑									
CC	-0.50, 0.001<p<0.01 ↑	0.1, p>0.10	-0.18, p>0.10								
SSS	-0.42, 0.01<p<0.05 ↑	-0.22, p>0.10	-0.29, p>0.10 ↓	0.24, p>0.10 ↓							
PSP	0.45, 0.01<p<0.05 ↑	0.37, p=0.05	0.54, 0.001<p<0.01 ↑	-0.03, p>0.10 ↓	0.14, p>0.10						
SC	0.42, 0.01<p<0.05 ↑	0.06, p>0.10	0.58, p≥0.001 ↑	-0.47, 0.01<p<0.05 ↑	-0.07, p>0.10 ↓	0.41, 0.01<p<0.05					
D	-0.004, p>0.10 ↓	-0.53, 0.001<p<0.01 ↑	-0.15, p>0.10 ↑	-0.003, p>0.10	0.32, 0.05<p<0.1 ↑	0.27, p>0.10	0.12, p>0.10 ↓				
PR	0.27, p>0.10	0.13, p>0.10	0.31, 0.05<p<0.1	0.05, p>0.10 ↓	-0.03, p>0.10 ↓	0.54, 0.001<p<0.01 ↓	0.07, p>0.10	0.31, 0.05<p<0.1 ↑			
AR	-0.07, p>0.10	0.25, p>0.10	0.31, 0.05<p<0.1	0.16, p>0.10 ↓	-0.10, p>0.10	0.23, p>0.10	0.11, p>0.10	-0.16, p>0.10 ↑	0.54, 0.001<p<0.01 ↑		
E-A	-0.24, p>0.10	-0.34, 0.05<p<0.1 ↑	-0.33, 0.05<p<0.1 ↑	0.32, 0.05<p<0.1 ↑	0.01, p>0.10	-0.13, p>0.10	-0.31, 0.05<p<0.1 ↑	0.35, 0.05<p<0.1 ↑	0.06, p>0.10	-0.17, p>0.10	
Al	0.14, p>0.10	0.41, 0.01<p<0.05 ↑	-0.02, p>0.10	0.06, p>0.10	-0.09, p>0.10	0.36, 0.05<p<0.1	-0.11, p>0.10	-0.22, p>0.10	0.24, p>0.10	0.17, p>0.10	0.02, p>0.10 ↓

Note. ↑ – an increase of correlation force, ↓ – a decrease of correlation force, 0,14 –change of correlation direction, SE – self-control in the emotional sphere, SA – self-control in activity, SB – self-control in behavior (social self-control), CC – confrontational coping, SSS – search for social support, PSP – problem-solving planning, SC – self-control, D – distancing, PR – positive reassessment, AR – acceptance of responsibility, E-A – escape-avoidance, Al – alexithymia

Changes in the force and direction of the correlation between the scales of self-control and coping ways are detected: (1) self-control in the emotional sphere (SE) and "confrontational coping" (CC)—the correlation between these scales was weak (r = -0.23, *p*>0.10), and increased to medium (r = -0.50, 0.001<*p*<0.01), (2) self-control in the emotional sphere (SE) and "problem solving planning" (PSP), was weak (r = 0.25) and increased to moderate (r = 0.45, 0.01<*p*<0.05), (3) self-control in the emotional sphere (CE) and "escape-avoidance" (E-A)—the correlation was absent (r = 0.00), but became weak (r = 0.24, *p*>0.10), (4) self-control in activity (SA) and "distancing" (D)—weak correlation (r = -0.06, *p*>0.10) increased to medium (r = -0.53, 0.001<*p*<0.01), (5) self-control in activity (SA) and "acceptance of responsibility" (AR)—a very weak indicator (r = -0.01, *p*>0.10) increased to weak (r = 0.25, *p*>0.10), (6) self-control in activity (SA) and "escape-avoidance" (E-A)—the correlation from weak (r = 0.20, *p*>0.10) increased to moderate (r = -0.34, 0.05<*p*<0.1) and became inverse, (7) self-control in behavior (SB) and "search for social support" (SSS), the correlation decreased was moderate (r = -0.41, 0.01<*p*<0.05), and became weak (r = -0.29, *p*>0.10), (8) self-control in behavior (SB) and "problem solving planning" (PSP), the correlation was moderate (r = 0.43, 0.01<p<0.05) and increased to medium (r = 0.54, 0.001<*p*<0.01), (9) self-control in behavior (SB) and "self-control" (SC) as a way of coping—the correlation was weak (r = 0.26, *p*>0.10), and increased to medium (r = 0.58, *p*≥0.001), (10) self-control in behavior (SB) and "acceptance of responsibility" (AR)—the correlation was weak (r = -0.22, *p*>0.10) and inverse, but became moderate (r = 0.31, 0.05<*p*<0.1) and direct, (11) self-control in behavior (SB) and "escape-avoidance" (E-A)—the correlation from weak (r = - 0.29, *p*>0.10) increased to moderate (r = -0.33, 0.05<*p*<0.10).

There have been changes in the correlations between different ways of coping. In particular, all the connections of confrontational coping (CC) with other ways of coping have changed. For example, the correlation with self-control (SC) has increased to moderate (r = -0.47, 0.01<*p*<0.05) and has become inverse; the correlation with the search for social support (SSS), positive reassessment (PR), acceptance of responsibility (AR) has decreased to weak and very weak.

All the connections between the way of coping with "self-control" and other ways of coping have also changed: the correlation has increased to moderate and has become inverse with escape-avoidance (E-A); decreased to weak with distancing (D); the correlation with the acceptance of responsibility (AR) and positive reassessment (PR) became direct but remained very weak.

There was also a significant increase in the correlation from weak (r = 0.27, *p*>0.10) to medium (r = 0.54, 0.001<*p*<0.01) between acceptance of responsibility (AR) and positive reassessment (PR).

The correlation between alexithymia and other scales has changed, but

insignificantly. In particular, the correlation "alexithymia (Al)—escape-avoidance (E-A)" from moderate (r = 0.31, 0.05<p<0.1) decreased to very weak (r = 0.02, p>0.10) and "Alexithymia (Al)—problem-solving planning (PSP)" increased from weak (r = 0.16, p>0.10) to moderate (r = 0.36, 0.05<p<0.1). Some changes in the direction of correlation were also revealed. Thus, the relationships between "alexithymia (Al) and self-control in the emotional sphere (CE)" and "alexithymia (Al) and self-control in activity (SA)" became direct. On the contrary, the relationships between alexithymia (AL) and the search for social support (SSS), self-control (SC), and distancing (D) changed to inverse.

Hence, at the end of studying the course "Fundamentals of self-regulation," students' self-control indicators have increased, and the relationships between different ways of coping have changed. The changes obtained are related not only to the study of this course but also to the cycle of all other courses and personal changes due to the process of professional training in general.

DISCUSSION

The conducted empirical research revealed the dynamics of changes in the indicators of self-regulation of first-year psychology students in the process of studying the course "Psychology of self-regulation." Similar data were obtained in our previous studies (Latkina & Podkorytova, 2018) and the works of other researchers (Igumnova, 2019). According to the study of the level of self-regulation of 32 students of the socioeconomic sphere (psychologists, social educators, social workers; Latkina & Podkorytova, 2018), it was found that most respondents had medium and high self-regulation. Researchers have suggested that this result is due to the fact that students of the socioeconomic sphere during their professional studies master the courses aimed at developing self-regulation skills. Our current study confirms that studying such a course as "Psychology of self-regulation" and other psychological courses (during one semester) helps improve students' self-regulation. It has been shown conclusively that such indicators as self-control in the emotional sphere and self-control in behavior (social self-control) have improved. There was also a tendency to slightly improve other indicators of self-regulation, in addition to the index of alexithymia (which has not changed). Nevertheless, this trend in our study was statistically insignificant. To achieve statistically significant improvements in other indicators of self-regulation, a more purposeful influence on these aspects of self-regulation needs to be implemented during the educational process.

The correlation analysis between the studied indicators also revealed changes at the beginning and the end of studying the course. In particular, the relationship between different coping ways changed. For example, the relationship between acceptance of responsibility (AR) and positive reassessment (PR) has increased (r = 0.27, p> 0.10 at the beginning of studying "Psychology of self-regulation" and r =

0.54, *p*< 0.01 – at the end). It also indicates a positive trend in the development of students' self-regulation.

The study of the average arithmetic indicators according to the t-test revealed that statistically significant changes occurred in the indicators of self-control in the emotional sphere (p ≤ 0.001) and self-control in behavior (p ≤ 0.001), which makes it possible to assume that the study of the basics of Self-regulation, in particular, and psychological disciplines in general, has the greatest effect on these indicators.

Let us notice that the identified changes are both multifaceted and, at the same time, somewhat chaotic. It, however, corresponds to the general features of student age, particularly personal instability and trends toward self-search and self-cognition (Alam et al., 2021; Rudyuk, 2020; Vasylenko et al., 2020). At the same time, the changes in the indicators of psychology students' self-regulation (described by us) show that professional skills development is quite intensive, even during one semester.

It is clear that the development of self-regulation was influenced not only by one course, "Psychology of Self-Regulation," but by the whole complex of professionally oriented courses that students studied throughout the semester, as well as internal changes related to the professionalization of their personality.

Based on the results of our study, the future psychologists' effective development of self-regulation and other professional skills depends on (1) the increase of several professionally oriented courses in the curriculum of Psychology and (2) teaching students' self-regulation, not only during the special course but also during other psychological courses.

CONCLUSION

Thanks to empirical research, it is found that the indicators of mental self-regulation of first-year psychology students changed even during one semester, during which they, along with other courses, studied the course "Psychology of self-regulation." In particular, the students showed increased self-control and some coping ways, especially confrontational coping. On the contrary, the level of manifestation of such a way of coping as "escape-avoidance" has decreased slightly. The identified changes are diverse and, to some extent, chaotic. Nevertheless, such changes are fully consistent with the characteristics of student age: personal instability, self-knowledge, self-search, active trends of self-disclosure, self-realization, and self-creation. The obtained data show that the maturation and personal development of students, including professional (the development of their professionally important personal qualities and skills) during training, is quite intense and noticeable even during one semester.

Research Prospects

It is advisable to expand the sample of students, diagnostic tools, research, and compare the results of students of different years of study, as well as to identify gender patterns in the peculiarities of students' self-regulation.

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Pembangunan dan Pengesahan Instrumen Pengetahuan, Sikap dan Penghayatan Terhadap Unsur Tradisi Dalam Perlembagaan Persekutuan

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ABSTRAK

Unsur tradisi merupakan isu sensitif yang boleh mendatangkan pertelingkahan antara kaum. Di media sosial, elemen unsur tradisi sering menjadi punca pergaduhan antara orang Melayu dengan bukan Melayu. Oleh itu, menjadi satu keperluan untuk memahami pengetahuan, sikap dan penghayatan masyarakat terhadap unsur tradisi. Namun, tiada skala pengukuran yang disahkan dan dapat digunakan untuk mengukur pengetahuan, sikap dan penghayatan masyarakat Malaysia terhadap unsur tradisi. Maka, kajian ini akan membangunkan skala yang sah dan dapat digunakan untuk mengukur pengetahuan, sikap dan penghayatan unsur tradisi dalam Perlembagaan Persekutuan Malaysia. Metodologi kajian ini menggunakan pendekatan kuantitatif, dijalankan secara keratan rentas terhadap 2389 responden melalui pensampelan berkelompok ke atas responden Melayu, Cina dan India di Semenanjung Malaysia, berusia 18 tahun dan ke atas. Instrumen soal selidik dibangunkan sendiri berdasarkan elemen unsur tradisi yang terdapat dalam Perlembagaan Persekutuan dan model KAP (*knowledge, attitude and practices*) dan disemak oleh pakar bidang sosiologi perlembagaan dan psikometrik. Seterusnya ujian rintis dijalankan sebanyak dua kali, dan etika penyelidikan diperoleh serta kajian sebenar dijalankan. Setelah selesai pengumpulan data melalui media sosial, pengesahan serta kebolehpercayaan konstruk dan item dilakukan menggunakan analisis *Item Response Theory* (IRT) dan *Conformation Factor Analysis* menggunakan perisian SPSS, Jamovi dan Amos. Hasil kajian menunjukkan 34 item bagi konstruk pengetahuan, sikap dan penghayatan sah dan

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dapat digunakan berdasarkan kepada kesahan dalaman ketiga-tiga konstruk (Cronbach α > .70). Namun beberapa item bagi konstruk sikap dan penghayatan perlu dibuang iaitu item-item yang mempunyai *factor loading* yang rendah. Implikasinya, item-item yang tinggal lebih mengukur dengan tepat dan tidak berlaku pertindihan antara item.

Kata kunci: Dikotomi menggunakan Jamovi, KAP, kontrak sosial, Perlembagaan Persekutuan, Rasch model

The Development of Validation of Knowledge, Attitude, and Appreciation Instrument of Traditional Elements in the Federation Constitution

ABSTRACT

The traditional elements in the Federal Constitution, consist of language, religion, special rights of the Malays, and the monarchy a sensitive issue that could easily cause conflict between the races. Through social media, elements in these traditional elements are often the source of disputes involving major races in Malaysia. Thus, this study seeks to develop a valid and reliable scale to measure knowledge, attitudes, and appreciation of the traditional elements in the Federal Constitution of Malaysia. The methodology of this study uses a quantitative approach, conducted in cross-sectional and using a questionnaire as an instrument. The sample consisted of 2389 respondents who were Malay, Chinese, and Indian in Peninsular Malaysia aged 18 and above. The measurement scale of this study is based on the elements of traditional elements in the Federal Constitution and the KAP model (knowledge, attitude, and practices). The questionnaire was self-developed and reviewed by experts in constitutional sociology and psychometrics. Next, the pilot test was conducted twice, and some items were removed as well as added. Next, research ethics are obtained, and actual studies are conducted. The data collection through social media using cluster sampling, descriptive analysis, validation, and reliability of constructs and items was conducted using SPSS, Jamovi, and SEM Amos software. The results showed that 34 items for the construct of knowledge, attitude, and appreciation are valid and can be used based on the internal validity of the three constructs (Cronbach α > .70). However, some items for the construct of attitude and appreciation should be removed. The implication is that the remaining items are more accurately measured, and there is no overlap between items.

Keywords: *Dichotomy using Jamovi, Federal Constitution, KAP, Rasch model, social contract*

PENGENALAN

Perlembagaan Persekutuan Malaysia terdiri daripada 15 bahagian (yang di dalamnya mengandungi 183 perkara) dan 13 jadual (Jabatan Peguam Negara, 2020). Perlembagaan Persekutuan merupakan undang-undang utama yang menjadi rujukan dalam pentadbiran negara

Malaysia. Perlembagaan ini telah diguna pakai buat pertama kalinya pada 31 Ogos 1957 sempena kemerdekaan Tanah Melayu. Perlembagaan Persekutuan telah digubal oleh Suruhanjaya Reid, sebuah suruhanjaya bebas yang dibentuk pada 21 Mac 1956 dan dipengerusikan oleh hakim makhkamah rayuan England, Lord William Reid. Keahliannya terdiri daripada barisan ilmuwan bidang perlembagaan iaitu Sir Ivor Jenning, Sir William Mackell, Tuan B.S Malik, dan Tuan Abdul Hamid (Arkib Negara Malaysia, 2020). Suruhanjaya Reid telah mengeluarkan draf pertama dan jawatankuasa kerja turut ditubuhkan untuk mengkaji draf pertama, seterusnya berlaku cadangan pindaan dan draf kedua dibahaskan dan diluluskan di Parlimen British. Pada 10 Jun 1957, kertas kerja turut dibahaskan dan diluluskan dalam Majlis Perundangan Persekutuan, dan akhirnya diterima di negeri-negeri Tanah Melayu. Pembentukan Perlembagaan Persekutuan ini turut mengambil kira elemen tradisi yang merupakan identiti Malaysia iaitu institusi beraja, agama Islam, keistimewaan orang Melayu dan bumiputera, dan bahasa Melayu.

Unsur tradisi ini sering menjadi punca ketegangan antara kaum sama ada isu berkaitan hak istimewa orang Melayu atau isu berkaitan agama dan bahasa (Mohamed Ali Haniffa, 2016; Nazri Muslim, 2012). Kajian berkaitan elemen kontrak sosial dalam Perlembagaan Persekutuan Malaysia banyak dijalankan oleh penyelidik tempatan (Haqimie, 2019; Nazri Muslim, 2012; Nazri Muslim et al., 2011, 2013), namun fokus hanya kepada persoalan Islam dan orang Melayu sahaja. Kajian lepas juga lebih memberi fokus kepada pelajar Institusi Pengajian Tinggi Awam sahaja (Nazri Muslim et al., 2011) dan tidak umum kepada masyarakat Malaysia. Unsur-unsur tradisi ini perlu dikaji kepada seluruh rakyat Malaysia pelbagai etnik kerana ia merupakan elemen penting untuk difahami dan dihayati dalam menjamin kelangsungan tamadun negara. Item-item yang dikemukakan dalam kajian lepas adalah amat sedikit yang dapat memenuhi kriteria statistik. Contohnya, Nazri Muslim (2012) tidak melakukan kesahan item dan konstruk dalam instrumen menggunakan EFA (*exploratoty factor analysis*) dan CFA (*confirmation factor analysis*). Kaedah sekarang lebih bersistematik dan melalui langkah pengesahan (validasi) yang betul. Prosedur pembinaan dan pengesahan konstruk dan item perlu dilakukan bagi menghasilkan instrumen yang sah dan boleh digunakan, agar data yang diperoleh lebih tepat. Tingkah laku atau penghayatan masyarakat terhadap kepatuhan kepada unsur tradisi merupakan isu penting yang perlu diberi perhatian demi keharmonian masyarakat. Maka, kajian ini akan membangunkan instrumen unsur tradisi yang telah diuji sahih dan sah secara statistik yang boleh mengukur pengetahuan, sikap dan penghayatan masyarakat Malaysia terhadap unsur tradisi dalam Perlembagaan Persekutuan. Kajian yang dibangunkan ini akan digunakan untuk mengukur pengetahuan, sikap dan penghayatan masyarakat pelbagai etnik di Malaysia dengan lebih tepat berdasarkan prosedur statistik yang betul.

TINJAUAN LITERATUR

Unsur Tradisi dalam Perlembagaan Persekutuan Malaysia

Tradisi merupakan kesinambungan daripada generasi ke generasi, dan unsur tradisi ialah sistem yang ada sebelum lahirnya zaman moden yang mana kebergantungannya adalah pada hal agama dan nilai-nilai asal lainnya (Nazri Muslim et al., 2013). Sesuai dengan definisi "Melayu" dalam Perlembagaan Persekutuan iaitu seseorang yang beragama Islam, lazimnya berbahasa Melayu dan mengamalkan adat resam Melayu. Maka kesemua elemen ini dimasukkan sebagai unsur yang dibawa secara tradisi daripada undang-undang yang sedia ada di Tanah Melayu ke dalam Perlembagaan Persekutuan mengikut keadaan masyarakat tempatan oleh British (Mohd Salleh Abas, 1929/1997). Jadual 1 ialah elemen-elemen unsur tradisi yang terkandung dalam Perlembagaan Persekutuan (Jabatan Peguam Negara, 2020).

Jadual 1 menjelaskan bahawa semua elemen dalam unsur tradisi Perlembagaan Persekutuan ditulis dengan jelas menggunakan bahasa perundangan. Namun, masyarakat akan lebih memahami semua elemen ini melalui huraian yang menggunakan bahasa mudah melalui penulisan Mohd Salleh Abas (1985), Nazri Muslim dan Ahmad Hidayat Buang (2012), Nazri Muslim et al. (2011), Nazri Muslim (2012), Shamrahayu A. Aziz (2012), dan Wan Ahmad Fauzi Wan Husain et al. (2017). Unsur tradisi dalam Perlembagaan Persekutuan terdiri daripada empat elemen yang telah disenaraikan.

Pertama, pemerintahan beraja sebagaimana dinyatakan dalam Perkara 32, 38, 40, 41, 42, 44, 70. Masyarakat Melayu secara tradisinya memang telah mengamalkan sistem pemerintahan beraja sejak berabad yang lalu. Namun, British mula campur tangan dalam urusan pentadbiran Tanah Melayu pada tahun 1824 melalui perjanjian Inggeris-Belanda, dan pada tahun 1946 British memperkenalkan Malayan Union. Kuasa sultan hilang menyebabkan timbulnya kemarahan orang Melayu dan Malayan Union dimansuhkan dan digantikan dengan Perjanjian Persekutuan Tanah Melayu 1948. Melalui perjanjian ini, kuasa sultan dikembalikan sehingga Tanah Melayu mencapai kemerdekaan; kuasa sultan dipinda untuk disesuaikan dengan konsep berparlimen dan kemerdekaan (Mohd Salleh Abas, 1929/1997). Melalui semua isi kandungan Perlembagaan

Jadual 1
Elemen unsur tradisi dalam Perlembagaan Persekutuan

Elemen	Kandungan Perlembagaan Persekutuan
1. Sistem beraja	Perkara 32, Perkara 38, Perkara 40, Perkara 41, Perkara 42, Perkara 44, Perkara 70
2. Agama Islam dan agama lain	Perkara 3, Perkara 11
3. Kedudukan istimewa orang Melayu dan Bumiputera serta etnik lain	Perkara 153
4. Bahasa Melayu dan bahasa lain	Perkara 152

Persekutuan, carian menunjukkan 437 kali nama Yang Dipertuan Agong disebut dalam Perlembagaan Persekutuan.

Namun, isu utamanya yang ingin diutarakan dalam unsur tradisi Perlembagaan Persekutuan berkaitan sistem beraja adalah Yang Dipertuan Agong adalah ketua utama negara Malaysia, pemerintah tertinggi angkatan tentera Persekutuan, merupakan ahli tertinggi dalam kuasa perundangan Persekutuan di bawah Parlimen, memberi ampun dan menangguhkan hukuman kepada kesalahan yang disabitkan oleh Mahkamah Tentera bagi kesalahan yang dilakukan dalam Wilayah Persekutuan Kuala Lumpur, Labuan dan Putrajaya, dan baginda hendaklah diberi keutamaan daripada semua orang dalam negaranya. Baginda juga berhak melantik Perdana Menteri, tidak memperkenankan permintaan bagi pembubaran Parlimen, mengadakan mesyuarat Majlis Raja-Raja semata-mata berkenaan keistimewaan, kedudukan, kemuliaan dan kebesaran Duli-Duli Yang Maha Mulia Raja-Raja, dan apa-apa tindakan pada mesyuarat itu serta hal lain yang disebut dalam Perlembagaan Persekutuan. Menurut Mohd Salleh Abas (1929/1997), Perlembagaan memperuntukkan Dipertuan Agong, semua raja dan gabenor perlu kerap bertemu untuk mewujudkan hubungan kerja yang baik.

Hal ini dapat direalisasikan dengan penubuhan Majlis Raja-Raja. Majlis Raja-Raja telah diwujudkan ketika tertubuhnya Malayan Union, dan masih diteruskan sehingga kini. Fungsi Majlis Raja-Raja adalah sebagaimana yang telah ditulis dalam Perkara 38 dan Jadual Kelima. Seterusnya, berkaitan dengan kekebalan dan kedaulatan raja, Perkara 32(1) menyatakan bahawa Yang Dipertuan Agong tidak boleh didakwa dalam mana-mana perbicaraan dalam mana-mana mahkamah kecuali Mahkamah Khas. Tiada pindaan boleh dibuat berkaitan dengan Majlis Raja-Raja serta keistimewaan, kebesaran atau kemuliaan dan kedudukan mereka kecuali dengan persetujuan Majlis Raja-Raja.

Kedua, agama Islam sebagai agama Persekutuan seperti petikan dalam Perkara 3 dan 11. Agama Islam ialah agama bagi negara Malaysia, namun agama-agama lain boleh diamalkan dengan harmoni. Wujudnya imbangan antara penganut agamat Islam dengan penganut-penganut agama lain di Malaysia. Bagi memelihara kesucian agama Islam sebagai agama Persekutuan, agama lain tidak boleh disebarkan kepada penganut agama Islam. Secara tradisinya agama Islam telah diamalkan oleh orang Melayu sejak 500 tahun dahulu dan mungkin lebih awal lagi, serta pegangan agama yang kuat menyebabkan penjajah Portugis dan Belanda tidak dapat menyebarkan ajaran agama mereka kepada orang Melayu (Mohd Salleh Abas, 1929/1997). Sejak pemerintahan British, agama Islam tidak diganggu gugat oleh mereka. Yang Dipertuan Agong sebagai ketua agama Islam bertanggungjawab menjaga kesucian agama Islam. Setiap agama di Malaysia berhak menguruskan agama masing-masing tanpa gangguan, membangunkan sendiri binaan masing-masing dan menyelenggara serta menguruskan mengikut undang-undang. Tiada sesiapa yang boleh dipaksa membayar cukai bagi tujuan agama lain.

Ketiga, bahasa Melayu sebagai bahasa kebangsaan sebagaimana ditulis dalam Perkara 152. Bahasa Melayu ialah bahasa kebangsaan bagi negara Malaysia, namun bahasa lain bebas digunakan oleh sesiapa sahaja. Bahasa Melayu sebagai bahasa kebangsaan lebih besar peranannya daripada bahasa rasmi (Mohd Salleh Abas, 1929/1997). Bahasa selain daripada bahasa Melayu juga boleh dipelajari oleh sesiapa sahaja dan boleh diajarkan kepada sesiapa sahaja. Tetapi, untuk urusan rasmi rakyat Malaysia perlu menggunakan hanya bahasa Melayu sahaja. Maksud rasmi ialah apa-apa urusan yang berkaitan dengan urusan Kerajaan Persekutuan, Kerajaan Negeri atau urusan berkaitan pihak berkuasa tempatan. Akhir sekali, elemen dalam unsur tradisi ialah kedudukan istimewa orang Melayu dan Bumiputera serta etnik lain. Kesemua intipatinya boleh dirujuk dalam Perkara 153. Yang Dipertuan Agong bertanggungjawab menjaga kedudukan istimewa orang Melayu dan Bumiputera Sabah dan Sarawak serta kepentingan sah etnik lain. Baginda juga perlu melindungi kedudukan orang Melayu dan Bumiputera Sabah dan Sarawak seperti rizab tanah, jawatan dalam perkhidmatan awam, biasiswa, danasiswa dan keistimewaan pendidikan dan permit atau lesen perdagangan atau perniagaan. Walau bagaimanapun, Perkara 153 Fasal 4 menjelaskan bahawa segala hak yang disenaraikan dalam Fasal 1 dan 3 ini tidak boleh dilucutkan jawatan atau hak mereka yang telah memegang jawatan tersebut. Tuntasnya, unsur tradisi merupakan unsur atau perjanjian yang telah

diperaku dan selayaknya menjadi elemen dalam Perlembagaan Persekutuan kerana sejarah membuktikan anak watan negara ini mempunyai hak untuk dilayan dengan adil tanpa mengenetepikan hak kaum lain yang telah sama-sama memperjuangkan kemerdekaan. Persetujuan dan kesepakatan ini perlu diimbangi antara hak anak watan iaitu orang Melayu dan Bumiputera dengan kaum lain di Malaysia yang telah diiktiraf kewarganegaraannya. Rakyat Malaysia perlu jelas dengan sejarah negara dan mengambil iktibar daripada segala yang berlaku di negara ini untuk mengelakkan keharmonian yang dicecapi diganggu gugat.

Model KAP (Pengetahuan, Sikap dan Amalan) dan Instrumen Pengukuran

Model KAP ialah singkatan bagi *knowledge*, *attitude* dan *practices*. Model KAP ini telah bermula pada tahun 1950-an dan merupakan model yang dibangunkan untuk melihat perubahan tingkah laku dalam masyarakat (Andrade et al., 2020). Model KAP juga dikenali sebagai tinjauan pengetahuan, sikap, tingkah laku dan amalan. Model KAP mempunyai beberapa langkah asas yang perlu dilakukan iaitu mengenal pasti topik kajian, pemilihan populasi sasaran, penyediaan soalan KAP, penyediaan pilihan jawapan, pembangunan sistem pemarkahan untuk instrumen, dan pengesahan instrumen. Kajian berkenaan pengetahuan, sikap dan amalan banyak dikaji dalam bidang penjagaan kesihatan, antaranya yang terkini berkenaan COVID-19, penyakit berjangkit, aktiviti senaman fizikal, dan sebagainya (Andrade et al., 2020; Fontes et al., 2016;

Iradukunda et al., 2021; Mohammad Nasir et al., 2013; Van Herck et al., 2004; Yousaf et al., 2020).

Namun, tidak dinafikan selain bidang kesihatan, bidang sains sosial dan kemanusiaan turut menggunakan model KAP antaranya yang melibatkan alam sekitar dan pendidikan perubahan iklim (Jamilah Ahmad et al., 2011; Karami et al., 2017). Dari segi pengukuran KAP, semua pendekatan kualitatif, kuantitatif dan campuran digunakan pengkaji lepas. Kebanyakan soal selidik dibangunkan sendiri oleh penyelidik berdasarkan kepada tujuan kajian masing-masing (Getaneh et al., 2021; Li et al., 2021; Ogoina et al., 2021). Pelbagai alat digunakan untuk mengukur pengetahuan, sikap dan amalan. Terdapat banyak kajian yang menggunakan model Rasch untuk mengesahkan instrumen KAP (Akram et al., 2015; Trakman et al., 2017). Malahan terdapat juga kajian KAP yang hanya menggunakan pengujian

kebolehpercayaan dalaman iaitu dengan melihat nilai *Cronbach alpha* sahaja (Bates et al., 2020; Hussain et al., 2021; Poorolajal et al., 2012). Ini kerana, pengetahuan bukan pembolehubah pendam. Maka analisis yang paling sesuai digunakan ialah analisis model Rasch. Bagi sikap dan penghayatan, lima skala Likert digunakan untuk mendapatkan persetujuan responden, maka proses pembinaan instrumen adalah seperti prosedur biasa iaitu menggunakan CFA bagi instumen yang baru dibangunkan. Pembinaan instrumen merupakan proses yang perlu dilakukan dengan teliti dan melalui prosedur yang betul untuk memastikan kesahan dan kebolehpercayaan instrumen yang dibangunkan.

Bersandarkan model KAP, kerangka konseptual dapat dirangka bagi kajian ini (Rajah 1). Hubungan antara pengetahuan, sikap dengan penghayatan (menggantikan perkataan amalan) saling berkait antara satu sama lain.
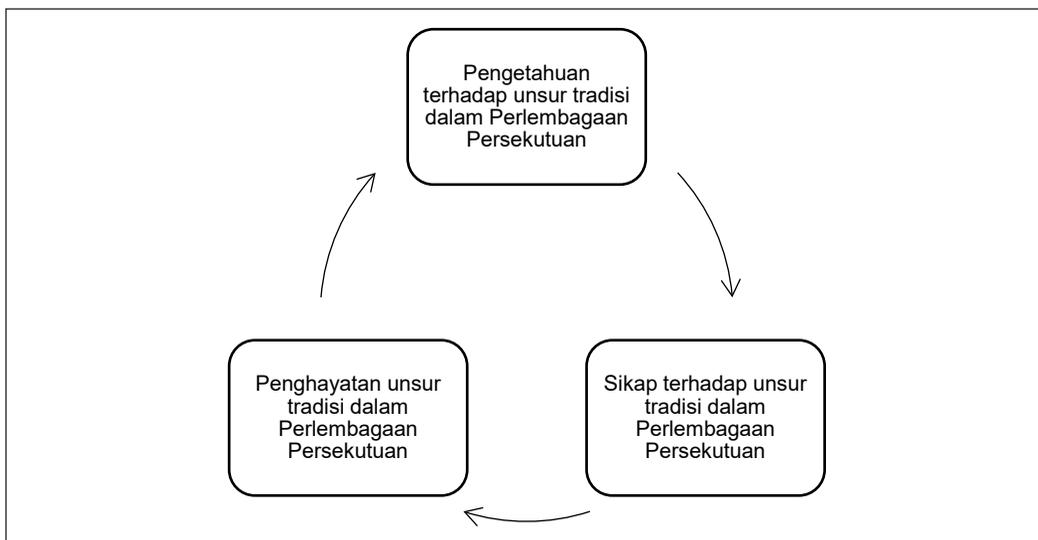
Rajah 1. Kerangka konseptual kajian berpandukan model KAP

Pengetahuan merujuk kepada apa-apa yang diketahui berkaitan unsur tradisi, bahasa, agama, kedudukan istimewa orang Melayu dan sistem beraja dalam Perlembagaan Persekutuan. Sikap pula merujuk kepada pandangan ataupun perbuatan berdasarkan kepada unsur tradisi, bahasa, agama, kedudukan istimewa orang Melayu dan sistem beraja dalam Perlembagaan Persekutuan. Akhir sekali, penghayatan merujuk kepada menghayati, mengalami dan merasai dalam batin tentang unsur tradisi, bahasa, agama, kedudukan istimewa orang Melayu dan sistem beraja dalam Perlembagaan Persekutuan.

METODOLOGI

Kajian ini menggunakan pendekatan kuantitatif, dijalankan secara keratan rentas. Kajian keratan rentas dijalankan kerana data diambil sekali sahaja pada tempoh masa yang dijalankan terhadap masyarakat Malaysia etnik Melayu, Cina dan India. Soal selidik digunakan sebagai instrumen untuk pengumpulan data. Populasi kajian ialah rakyat Semenanjung Malaysia. Mengikut pengiraan sampel Krejcie dan Morgan (1970), sampel bagi 26.9 juta rakyat Malaysia pada tahun 2020 ialah sebanyak 384. Walau bagaimanapun, lebih besar saiz yang diambil akan lebih mendekati keadaan populasi sebenar. Turut mengambil kira ialah sampel saiz bagi etnik India yang hanya 10 peratus, maka sebanyak 2600 sampel dipilih untuk mewakili sampel kajian ini. Namun setelah *outlier* (berpandukan kepada analisis SPSS) dan data yang rosak dibuang sebanyak

211 responden, responden yang diperoleh hanya 2389 orang. Sampel kajian ini terdiri daripada etnik Melayu, Cina dan India yang berusia 18 tahun ke atas. Nisbah sampel dipilih mengikut populasi iaitu 65%: 25%: 10% berpandukan kepada populasi semasa penduduk Malaysia (Jabatan Perangkaan Malaysia, 2020).

Prosedur Pembinaan Kajian Indeks Pengetahuan, Sikap dan Penghayatan Unsur Tradisi Perlembagaan Persekutuan (KIUTPP)

Pembinaan skala pengetahuan, sikap dan penghayatan unsur tradisi (KIUTPP) melibatkan beberapa langkah berdasarkan pembinaan skala DeVellis (2017). Langkah pertama ialah menentukan ukuran bagi pengetahuan, sikap dan penghayatan unsur tradisi. Kumpulan item dan format ukuran ditentukan. Item-item dibangunkan berdasarkan unsur tradisi yang termaktub dalam Perlembagaan Persekutuan iaitu merangkumi bahasa, agama, kedudukan istimewa kaum Melayu dan sistem beraja (Perkara 32, 38, 40, 41, 42, 44, 70, 3, 11, 153 dan 152). Langkah seterusnya ialah soal selidik disemak oleh lima orang pakar bidang sosiologi perlembagaan dan dua orang pakar psikometrik. Kemudian pengesahan item dilakukan, iaitu ujian rintis dijalankan (Jadual 2). Sebanyak dua kali ujian rintis dijalankan iaitu keputusannya seperti berikut:

Setelah ujian rintis dilakukan, data diedarkan kepada responden kajian dan dianalisis secara deskriptif dan analisis model Rasch serta *Structural Equation Modeling* (SEM) menggunakan perisian

Jadual 2
Keputusan ujian rintis

Konstruk	Cronbach's Alpha (α)	Keputusan
Pilot 1 (N = 200)	Bahagian A (17 items): .643	Tiada item dibuang, tambah 1 item
	Bahagian B (17 items): .755	Kekal
	Bahagian C (11 items): .492	Buang item C1&C5 (α=.622), tambah 1 item
Pilot 2 (N = 191)	Bahagian A (18 items): .750	
	Bahagian B (17 items): .872	Semua item kekal
	Bahagian C (10 items): .718	

SPSS 23, Jamovi 1.8.4 dan Amos 26. Bagi tujuan pengedaran borang soal selidik, kelulusan etika penyelidikan telah dimohon dan telah diluluskan oleh Jawatankuasa Etika Penyelidikan USIM (diluluskan pada 19 Januari 2021, kod: USIM/JKEP/2021-122). Persetujuan setiap responden diperoleh terlebih dahulu sebelum soal selidik diedarkan.

Instrumen

Konstruk Item. Tiga konstruk dibangunkan iaitu konstruk pengetahuan, sikap dan penghayatan terhadap unsur tradisi. Sebanyak 45 item iaitu 18 item mengukur pengetahuan responden dengan tiga skala (betul, salah dan tidak tahu), 17 item untuk mengukur sikap dengan skala 1 hingga 5 (1 = sangat tidak setuju dan 5 = sangat setuju) dan 10 item untuk mengukur penghayatan unsur tradisi dengan skala 1 hingga 5 (1 = tidak pernah langsung, 2 = pernah sekali, 3 = kadang-kadang (2-3 kali), 4 = kerap (4-5 kali), 5 = sangat kerap (lebih dari 5 kali)).

Kesahan Muka. Kesahan muka hanya melihat sama ada soal selidik ini mengukur pengetahuan, sikap dan penghayatan unsur tradisi dalam Perlembagaan Persekutuan.

Kesahan muka dilakukan oleh tiga orang pakar bidang sosiologi dan dua orang pakar psikometrik, dan mereka memperakukan bahawa soal selidik ini sesuai dan sah digunakan dengan beberapa komen penambahbaikan.

Kesahan Kandungan. Berbeza dengan kesahan muka yang hanya melihat soal selidik dari sudut pandang orang biasa, melihat kepada ayat, ejaan dan dari sudut psikometrik, kesahan kandungan lebih kepada melihat kesesuaian isi kandungan soal selidik. Empat orang pakar dalam perlembagaan telah mengesahkan dan memperbaik soal selidik agar sesuai dengan isi dan relevan dengan unsur tradisi Perlembagaan Persekutuan pada masa kini.

Kesahan dan Kebolehpercayaan Instrumen. Bagi konstruk pengetahuan, disebabkan konstruk ini berbentuk dikotomi (dua skala jawapan berbentuk nombor binari 0 dan 1) maka ujian *Dichotomous Rasch Model* berdasarkan analisis IRT (*item response theory*) digunakan untuk mengukur kebolehpercayaan item, kesesuaian item dan tahap kesukaran item. Ukuran bagi kebolehpercayaan instrumen kajian

bagi konstruk sikap dan penghayatan ditentukan oleh kebolehpercayaan dalaman, kebolehpercayaan konstruk, dan memenuhi nilai *Average Variance Extracted* (AVE). Kebolehpercayaan dalaman ialah nilai *Cronbach alpha* yang melebihi .7 (Hair et al., 2010). Sebelum analisis dilakukan, data dibersihkan iaitu membuang data-data yang hilang (*missing value*) dan data-data yang dianggap tidak normal. *Outlier* iaitu data yang menyimpang terlalu jauh dari data-data yang lain juga perlu dibuang. Data bertaburan secara normal.

KEPUTUSAN DAN PERBINCANGAN

Latar Belakang Responden

Seramai 2389 responden kajian ini terdiri daripada 1429 orang lelaki dan 960 orang perempuan. Ini menunjukkan responden lelaki lebih berminat dengan kajian berkaitan unsur tradisi dalam Perlembagaan Persekutuan. Selain itu, lokasi responden kajian majoritinya ialah bandar. Tetapi golongan luar bandar juga menyertai

Jadual 3
Latar belakang responden

Kategori		Kekerapan (Peratus)
Jantina	Lelaki	1429 (59.8)
	Perempuan	960 (40.2)
Lokasi	Bandar	1493 (62.4)
	Luar bandar	896 (37.5)
Pendidikan	Tidak bersekolah	4 (0.2)
	Sekolah rendah	4 (0.2)
	Sekolah menengah	247 (10.3)
	Universiti/kolej/ maktab	2134 (89.3)

kajian ini iaitu sebanyak 896 orang. Taraf pendidikan tertinggi responden ialah pendidikan universiti atau kolej atau maktab iaitu seramai 2134 orang responden, diikuti pendidikan sekolah menengah seramai 247 orang (Jadual 3).

Kesahan dan Kebolehcapaian Pembolehubah Pengetahuan, Sikap dan Penghayatan Unsur Tradisi

Nilai kebolehpercayaan pembolehubah pengetahuan, sikap dan penghayatan adalah melebihi 0.7 (Jadual 4). Daripada keputusan ini menunjukkan nilai kebolehpercayaan dalaman setiap konstruk adalah baik.

Kesesuaian Item bagi Konstruk Pengetahuan. Kesesuaian item berdasarkan daripada analisis menggunakan model Rasch yang diterima untuk statsitik MNSQ Outfit bagi item dikotomi adalah 05 hingga 1.5 (Linacre, 2012). Nilai yang melebihi 1.5 menunjukkan item yang tidak sama cirinya dengan item-item lain dalam satu skala pengukuran. Manakala nilai di bawah 0.5 menunjukkan pertindihan atau pengulangan dengan item lain. Item yang baik ialah menghampiri nilai 1.0. item yang di luar julat ini perlu dibuang untuk

Jadual 4
Kebolehpercayaan dalaman konstruk pengetahuan, sikap dan penghayatan unsur tradisi

Pembolehubah	Nilai kebolehpercayaan item (α)
Pengetahuan (18 item)	.702
Sikap (17 item)	.864
Penghayatan (10 item)	.794

menghasilkan instrumen yang berkualiti. Hasil data kajian ini menunjukkan nilai logit bagi konstruk pengetahuan terhadap unsur tradisi adalah antara 0.583 hingga 1.362, maka tiada item yang perlu dibuang bagi konstruk pengetahuan. Keputusan analisis bagi kesesuaian item untuk konstruk pengetahuan adalah seperti dalam Jadual 5.

Item-item bagi konstruk pengetahuan merupakan soalan yang mudah (Jadual 5 dan Rajah 2). Bagi ruangan perkadaran, didapati kebanyakan item mampu dijawab dengan betul melebihi 90%. Tahap kesukaran juga menunjukkan item-item ini sangat tidak sukar. Tahap kesukaran item juga boleh dilihat melalui peta Wright.
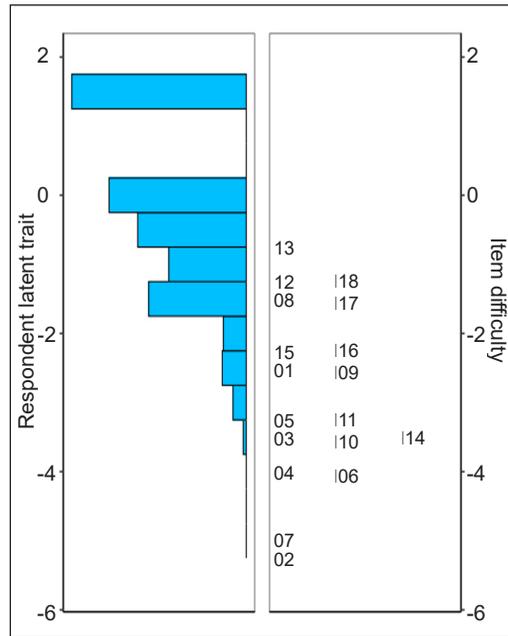
Rajah 2. Peta Wright bagi konstruk pengetahuan

Jadual 5
Kesesuaian item bagi konstruk pengetahuan

Item	Perkadaran (*Proportion*)	Pengukuran	Pengukuran S.E	*Infit*	*Outfit*
A1	0.891	-2.630	0.0707	0.981	0.906
A2	0.988	-5.148	0.1927	0.978	0.583
A3	0.949	-3.552	0.0972	1.027	0.940
A4	0.964	-3.934	0.1131	1.015	1.041
A5	0.937	-3.303	0.0886	1.090	1.362
A6	0.964	-3.960	0.1143	0.964	0.796
A7	0.987	-5.042	0.1835	1.005	0.807
A8	0.776	-1.599	0.0546	1.023	0.983
A9	0.891	-2.630	0.0707	1.032	0.972
A10	0.943	-3.426	0.0927	0.922	0.656
A11	0.938	-3.318	0.0891	0.916	0.605
A12	0.741	-1.359	0.0523	1.005	0.990
A13	0.624	-0.665	0.0480	1.112	1.163
A14	0.946	-3.478	0.0945	0.942	0.655
A15	0.860	-2.295	0.0642	0.975	0.909
A16	0.857	-2.262	0.0637	0.942	0.842
A17	0.764	-1.516	0.0538	0.992	0.950
A18	0.722	-1.238	0.0513	1.064	1.092

Nota. Infit= Information-weighted mean square statistic; Outfit= Outlier-sensitive means square statistic.

Kesahan dan Kebolehpercayaan Konstruk Sikap dan Penghayatan

Kesahan dan kebolehpercayaan konstruk sikap dan penghayatan ditentukan oleh indeks kesepadanan model, kesahan konvergen dan kebolehpercayaan konstruk (CR) menggunakan *Confirmation Factor Analysis* (CFA). Bagi memenuhi indeks kesepadan model, Hair et al. (2010) mencadangkan 3 hingga 4 indeks yang sesuai iaitu *Relative Chi Square*, RMSEA, GFI dan CFI. Nilai *Relative Chi Square* mestilah kurang dari 5.0, nilai RMSEA kurang atau sama dengan 0.08, nilai CFI dan GFI besar daripada atau sama dengan 0.9. Kesahan konvergen pula merangkumi dua kriteria yang perlu dilihat iaitu nilai *Factor Loadings* dan nilai AVE. Kedua-duanya mestilah melebihi nilai 0.5 untuk menentukan kesahan konvergen yang

tinggi (Bryne, 2010; Fornell & Larcker, 1981; Hair et al., 2010).

Daripada Jadual 6 menunjukkan nilai kesahan konvergen yang adalah tinggi, nilai CR dan nilai AVE melebihi 0.5. Seterusnya, indeks kesepadan model bagi konstruk sikap dan penghayatan adalah sepadan sebagaimana keputusan seperti dalam Rajah 3 dan Rajah 4.

Beberapa item bagi kontruk sikap dan penghayatan telah dibuang iaitu item B2, B5, B8, B9, B10, B17, C2, C3, C4, C5 dan C6 (Jadual 7). Berikut merupakan soalan-soalan bagi setiap item. Jika diperhatikan, item-item yang perlu dibuang ini dilihat item yang hampir sama dengan item yang ada dan tidak sesuai untuk diukur dalam mengukur sikap dan penghayatan unsur tradisi dalam Perlembagaan Persekutuan.

Jadual 6

Keputusan kebolehpercayaan untuk pengukuran sikap dan penghayatan unsur tradisi

Konstruk	Item	*Factor loading*	Kebolehpercayaan konstruk (CR)	Purata Varians dipetik (AVE)
Sikap	B1	0.664	0.918 (cemerlang)	0.507
	B3	0.699		
	B4	0.612		
	B6	0.766		
	B7	0.637		
	B11	0.773		
	B12	0.789		
	B13	0.695		
	B14	0.578		
	B15	0.731		
	B16	0.845		
Penghayatan	C1	0.500	0.854 (sangat baik)	0.568
	C7	0.321		
	C8	0.875		
	C9	0.901		
	C10	0.955		
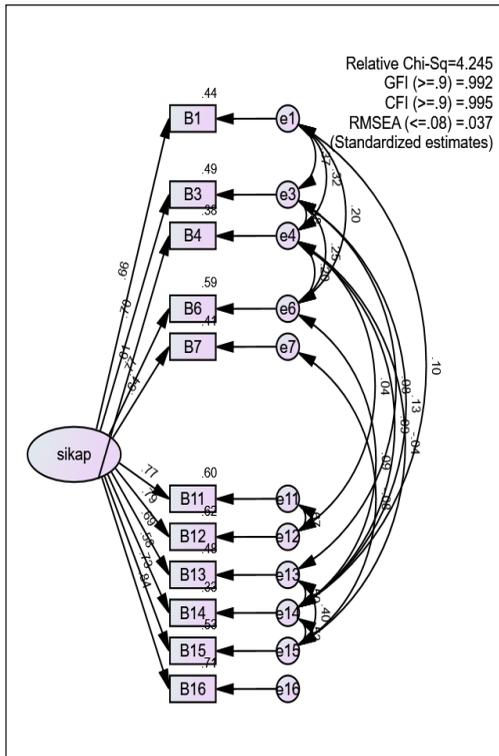
Rajah 3. CFA bagi konstruk sikap
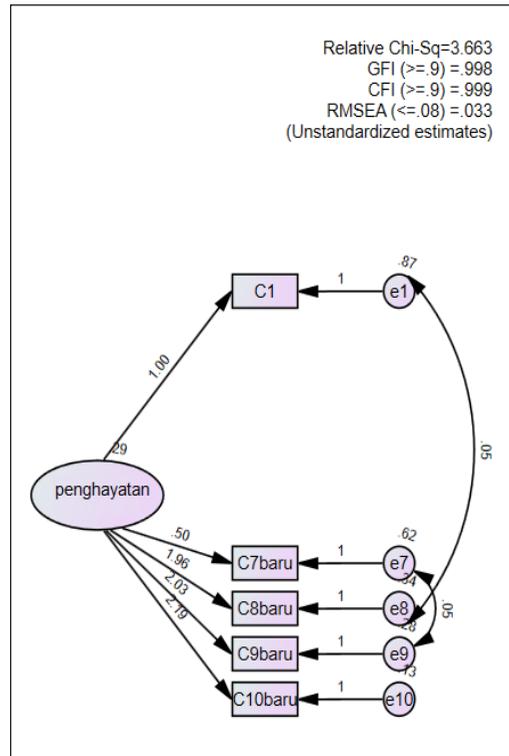
Rajah 4. CFA bagi konstruk penghayatan

Jadual 7
Item yang perlu dibuang

Konstruk sikap
B2. Saya malu bercakap dalam Bahasa Melayu kerana nampak tidak maju.
B5. Saya boleh menerima jika etnik lain menggunakan bahasa masing-masing dalam kehidupan seharian mereka.
B8. Penganut agama lain wajar diberikan kebebasan untuk mengamalkan agama masing-masing.
B9. Penganut agama lain seharusnya menguruskan hal ehwal agama mereka sendiri tanpa sekatan.
B10. Saya menerima kedudukan istimewa orang Melayu yang berkaitan dengan pemberian permit atau lesen.
B17. Peruntukan kedudukan istimewa orang Melayu, agama Islam, Bahasa Melayu dan institusi beraja jika hendak dipinda perlu mendapat 2/3 majoriti di Parlimen dan perkenan Majlis Raja-Raja.
Konstruk penghayatan
C2. Saya menggunakan Bahasa Melayu apabila berhadapan dengan urusan rasmi kerajaan.
C3. Saya menggunakan bahasa ibunda saya dalam urusan seharian.
C4. Saya meluahkan rasa marah disebabkan gangguan bunyi aktiviti keagamaan (contohnya: laungan azan, loceng gereja atau kuil, dan lain-lain).
C5. Saya menyuarakan rasa tidak puas hati berkenaan sesetengah aktiviti keagamaan etnik lain.
C6. Saya patuh kepada perintah Yang Dipertuan Agong.

Setelah item-item tersebut dibuang, maka item-item yang tinggal dan boleh digunakan adalah seperti dalam Jadual 8.

Tahap Pengetahuan, Sikap dan Penghayatan Unsur Tradisi Masyarakat Malaysia

Hasil daripada tinjauan terhadap 2389 orang responden yang diperoleh daripada media sosial menggunakan khidmat iklan Facebook, seramai 65.5% etnik Melayu, 22.5% etnik Cina dan 12.1% etnik India yang semuanya berada di lokasi Malaysia menunjukkan secara puratanya berada pada tahap yang tinggi bagi pengetahuan, sikap dan penghayatan unsur tradisi (Jadual 9).

Daripada semua item yang diajukan, hanya satu item sahaja yang berada pada tahap sederhana iaitu item A13. Item ini bertanyakan tentang "Kepentingan sah orang Cina dan India dalam institusi pendidikan tinggi awam, permit atau lesen dan perkhidmatan awam tidak boleh dilucutkan." Ini menunjukkan pengetahuan responden rata-ratanya berkenaan kepentingan sah etnik lain adalah sederhana. Walaupun Perlembagaan Persekutuan banyak ditulis mengenai kepentingan sah etnik Melayu dan Bumiputera, namun kepertingan sah etnik lain yang merupakan warganegara Malaysia turut tidak dinafikan. Item lain selain item A13, semuanya berada pada tahap tinggi.

Jadual 8
Soal selidik yang sepadan dan boleh digunakan

Pengetahuan berkenaan unsur tradisi	
A1	Unsur tradisi dalam Perlembagaan Persekutuan terdiri daripada Bahasa Melayu, Islam, kedudukan istimewa orang Melayu dan sistem beraja.
A2	Bahasa Melayu adalah bahasa kebangsaan dalam Perlembagaan Persekutuan.
A3	Bahasa Melayu digunakan sebagai bahasa perantaraan dalam semua urusan rasmi kerajaan.
A4	Bahasa selain bahasa Melayu boleh dipelajari oleh sesiapa sahaja.
A5	Etnik Cina dan India boleh menggunakan bahasa ibunda masing-masing dalam urusan seharian.
A6	Agama Islam sebagai agama Persekutuan dalam Perlembagaan Persekutuan.
A7	Agama lain boleh diamalkan di Malaysia.
A8	Menurut Perlembagaan Persekutuan, penganut agama lain selain Islam tidak boleh menyebarkan agama mereka kepada penganut agama Islam.
A9	Penganut agama lain boleh menguruskan hal ehwal agama mereka sendiri tanpa sekatan.
A10	Kedudukan istimewa orang Melayu telah termaktub dalam Perlembagaan Persekutuan.
A11	Yang Dipertuan Agong bertanggungjawab melindungi kedudukan istimewa orang Melayu dan kepentingan sah etnik lain.
A12	Kemasukan orang Melayu dalam institusi pendidikan tinggi awam, pemberian permit atau lesen dan pelantikan dalam perjawatan perkhidmatan awam merupakan kedudukan istimewa orang Melayu.
A13	Kepentingan sah orang Cina dan India dalam institusi pendidikan tinggi awam, permit atau lesen dan perkhidmatan awam tidak boleh dilucutkan.
A14	Yang Dipertuan Agong adalah Ketua Utama Negara Malaysia.
A15	Yang Dipertuan Agong boleh bertindak menurut budi bicara baginda untuk melantik Perdana Menteri.
A16	Yang Dipertuan Agong boleh bertindak menurut budi bicara baginda untuk tidak memperkenankan permintaan bagi pembubaran parlimen.

Jadual 8 *(bersambung)*

A17	Peruntukan agama Islam, Bahasa Melayu dan institusi beraja tidak boleh dipinda walaupun dalam keadaan darurat.
A18	Peruntukan kedudukan istimewa orang Melayu, agama Islam, Bahasa Melayu dan institusi beraja jika hendak dipinda perlu mendapat 2/3 majoriti di Parlimen dan perkenan Majlis Raja-Raja.
Sikap terhadap unsur tradisi	
B1	Saya menerima penggunaan Bahasa Melayu dalam urusan rasmi kerajaan.
B3	Saya bangga Bahasa Melayu sebagai bahasa kebangsaan.
B4	Saya merasa selesa menggunakan Bahasa Melayu dalam kehidupan seharian.
B6	Saya menerima Islam sebagai agama Persekutuan di Malaysia.
B7	Penyebaran agama lain terhadap penganut agama Islam adalah tidak dibenarkan.
B11	Saya menerima kedudukan istimewa orang Melayu yang berkaitan dengan pelantikan dalam perjawatan perkhidmatan awam.
B12	Saya menerima orang Melayu ada peruntukan khas dalam kemasukan pendidikan tinggi awam di Malaysia.
B13	Saya bangga Yang Dipertuan Agong merupakan ketua utama bagi Negara Malaysia.
B14	Saya menerima Yang Dipertuan Agong mempunyai kuasa dalam hal ehwal agama Islam.
B15	Saya setuju Yang Dipertuan Agong mempunyai kuasa dalam hal berkaitan kedudukan istimewa orang Melayu.
B16	Saya menerima peruntukan agama Islam, Bahasa Melayu dan institusi beraja tidak boleh dipinda walaupun dalam keadaan darurat.
Penghayatan berkenaan unsur tradisi	
C1	Saya terima dengan terbuka unsur tradisi (Bahasa Melayu, agama Islam, kedudukan istimewa orang Melayu dan sistem beraja) yang telah ditetapkan dalam Perlembagaan Persekutuan.
C7	Saya menyuarakan rasa tidak puas hati terhadap Yang Dipertuan Agong.
C8	Saya bantah peruntukan kemasukan orang Melayu dalam pendidikan tinggi awam.
C9	Saya bantah pemberian permit atau lesen kepada orang Melayu.
C10	Saya bantah peruntukan pelantikan orang Melayu dalam perjawatan perkhidmatan awam.

Jadual 9
Tahap pengetahuan, sikap dan penghayatan unsur tradisi

Pengetahuan terhadap Unsur Tradisi			
Item	**Min**	**Sisihan Piawai**	**Tahap**
A1. Unsur tradisi dalam Perlembagaan Persekutuan terdiri daripada bahasa Melayu, Islam, kedudukan istimewa orang Melayu dan sistem beraja.	0.89	0.31	Tinggi
A2. Bahasa Melayu adalah bahasa kebangsaan dalam Perlembagaan Persekutuan.	0.99	0.11	Tinggi
A3. Bahasa Melayu digunakan sebagai bahasa perantaraan dalam semua urusan rasmi kerajaan.	0.95	0.22	Tinggi
A4. Bahasa selain bahasa Melayu boleh dipelajari oleh sesiapa sahaja.	0.96	0.19	Tinggi
A5. Etnik Cina dan India boleh menggunakan bahasa ibunda masing-masing dalam urusan seharian.	0.94	0.24	Tinggi
A6. Agama Islam sebagai agama Persekutuan dalam Perlembagaan Persekutuan.	0.96	0.19	Tinggi

Jadual 9 *(bersambung)*

A7. Agama lain boleh diamalkan di Malaysia.	0.99	0.11	Tinggi
A8. Menurut Perlembagaan Persekutuan, penganut agama lain selain Islam tidak boleh menyebarkan agama mereka kepada penganut agama Islam.	0.78	0.42	Tinggi
A9. Penganut agama lain boleh menguruskan hal ehwal agama mereka sendiri tanpa sekatan.	0.89	0.31	Tinggi
A10. Kedudukan istimewa orang Melayu telah termaktub dalam Perlembagaan Persekutuan.	0.94	0.23	Tinggi
A11. Yang Dipertuan Agong bertanggungjawab melindungi kedudukan istimewa orang Melayu dan kepentingan sah etnik lain.	0.94	0.24	Tinggi
A12. Kemasukan orang Melayu dalam institusi pendidikan tinggi awam, pemberian permit atau lesen dan pelantikan dalam perjawatan perkhidmatan awam merupakan kedudukan istimewa orang Melayu.	0.74	0.44	Tinggi
A13. Kepentingan sah orang Cina dan India dalam institusi pendidikan tinggi awam, permit atau lesen dan perkhidmatan awam tidak boleh dilucutkan.	0.62	0.48	Sederhana
A14. Yang Dipertuan Agong adalah Ketua Utama Negara Malaysia.	0.95	0.23	Tinggi
A15. Yang Dipertuan Agong boleh bertindak menurut budi bicara baginda untuk melantik Perdana Menteri.	0.86	0.35	Tinggi
A16. Yang Dipertuan Agong boleh bertindak menurut budi bicara baginda untuk tidak memperkenankan permintaan bagi pembubaran parlimen.	0.86	0.35	Tinggi
A17. Peruntukan agama Islam, Bahasa Melayu dan institusi beraja tidak boleh dipinda walaupun dalam keadaan darurat.	0.76	0.42	Tinggi
A18. Peruntukan kedudukan istimewa orang Melayu, agama Islam, bahasa Melayu dan institusi beraja jika hendak dipinda perlu mendapat 2/3 majoriti di Parlimen dan perkenan Majlis Raja-Raja.	0.72	0.45	Tinggi

Sikap terhadap Unsur Tradisi

Item	Min	Sisihan Piawai	Tahap
B1. Saya menerima penggunaan Bahasa Melayu dalam urusan rasmi kerajaan.	4.63	.77	Tinggi
B3. Saya bangga Bahasa Melayu sebagai bahasa kebangsaan.	4.58	.84	Tinggi
B4. Saya merasa selesa menggunakan Bahasa Melayu dalam kehidupan seharian.	4.58	.86	Tinggi
B6. Saya menerima Islam sebagai agama persekutuan di Malaysia.	4.57	.93	Tinggi
B7. Penyebaran agama lain terhadap penganut agama Islam adalah tidak dibenarkan.	4.03	1.38	Tinggi
B11. Saya menerima kedudukan istimewa orang Melayu yang berkaitan dengan pelantikan dalam perjawatan perkhidmatan awam.	3.85	1.42	Tinggi
B12. Saya menerima orang Melayu ada peruntukan khas dalam kemasukan pendidikan tinggi awam di Malaysia.	3.93	1.43	Tinggi
B13. Saya bangga Yang Dipertuan Agong merupakan ketua utama bagi Negara Malaysia	4.61	.83	Tinggi
B14. Saya menerima Yang Dipertuan Agong mempunyai kuasa dalam hal ehwal agama Islam.	4.70	.72	Tinggi
B15. Saya setuju Yang Dipertuan Agong mempunyai kuasa dalam hal berkaitan kedudukan istimewa orang Melayu.	4.61	.86	Tinggi

Jadual 9 *(bersambung)*

Item	Min	Sisihan Piawai	Tahap
B16. Saya menerima peruntukan agama Islam, Bahasa Melayu dan institusi beraja tidak boleh dipinda walaupun dalam keadaan darurat.	4.27	1.234	Tinggi
Penghayatan Unsur Tradisi			
Item	**Min**	**Sisihan Piawai**	**Tahap**
C1. Saya terima dengan terbuka unsur tradisi (Bahasa Melayu, agama Islam, kedudukan istimewa orang Melayu dan sistem beraja) yang telah ditetapkan dalam Perlembagaan Persekutuan.	4.30	1.08	Tinggi
C7. Saya menyuarakan rasa tidak puas hati terhadap Yang Dipertuan Agong.	4.65	0.83	Tinggi
C8. Saya bantah peruntukan kemasukan orang Melayu dalam pendidikan tinggi awam.	4.30	1.21	Tinggi
C9. Saya bantah pemberian permit atau lesen kepada orang Melayu.	4.29	1.21	Tinggi
C10. Saya bantah peruntukan pelantikan orang Melayu dalam perjawatan perkhidmatan awam.	4.27	1.23	Tinggi

Ini kerana item yang diajukan ini ialah soalan-soalan asas mengenai kontrak sosial dan dapatan ini menunjukkan bahawa rata-rata responden mempunyai pengetahuan asas berkenaan kontrak sosial, mempunyai sikap yang positif dan menghayati kontrak sosial yang menjadi perkara asas perpaduan negara. Walau bagaimanapun, masih menjadi kerunsingan apabila masih wujud segelintir responden yang tidak mempunyai pengetahuan asas berkaitan unsur tradisi Perlembagaan Persekutuan, sikap negatif dan kurang penghayatan responden terhadap unsur tradisi dalam Perlembagaan Persekutuan. Segelintir individu ini yang mampu menjadi punca kepada konflik dan pencetus isu perkauman. Sebagaimana yang telah berlaku sebelum ini, hanya beberapa individu yang mencetuskan provokasi antara kaum, dan sentimen begini cepat menarik perhatian masyarakat umum dan menaikkan rasa marah dan menyebabkan pelbagai pihak terjebak dengan emosi yang tidak baik hingga menambah lagi api kemarahan antara kaum. Maka sewajarnya semua rakyat Malaysia tanpa ada yang terkecuali mempunyai pengetahuan asas berkaitan dengan unsur tradisi Perlembagaan Persekutuan dan mempunyai sikap yang positif terhadap elemen-elemen ini serta menghayati apa yang telah terkandung dalam unsur tradisi dalam kehidupan seharian.

KESIMPULAN

Unsur tradisi dalam Perlembagaan Persekutuan merupakan isu yang menarik untuk dikaji terutama dari segi pengetahuan, sikap dan penghayatan masyarakat Malaysia terhadap unsur tradisi. Melalui media sosial, isu sebegini lantang disuarakan, maka alat ukuran KIUTPP ini wajar dibangunkan dan diuji kesahan dan kebolehpercayaannya. Seterusnya, ukuran sebenar tahap pengetahuan, sikap dan penghayatan rakyat Malaysia terhadap unsur tradisi dapat diukur

dengan lebih tepat. Selain itu, pembangunan dan pengesahan instrumen KIUTPP ini boleh digunakan oleh pengkaji akan datang untuk mengukur tahap pengetahuan, sikap dan penghayatan unsur tradisi di Malaysia. Walau bagaimanapun, lebih banyak lagi item yang diperlukan untuk mengukur pengetahuan, sikap dan penghayatan unsur tradisi. KIUTPP yang dibangunkan ini hanyalah asas. Hasil daripada instrumen ini juga telah menunjukkan tahap pengetahuan, sikap dan penghayatan masyarakat Malaysia terhadap unsur tradisi secara puratanya adalah tinggi. Sewajarnya, dapatan ini menunjukkan keputusan yang tinggi kerana soalan yang diajukan adalah soalan asas yang sewajarnya semua tahu dan patuhi.

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Ecocritical Responsiveness and Diasporic Imagination: An Eco-Colonial Representation in Diasporic Writings

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ABSTRACT

Within the literary realm, the relationship between environmental sensitivity and postcolonial woundedness is an interestingly intersecting perspective. Ecocriticism highlights Nature as a space of sociocultural values where the writer uses his imaginative bend to explore issues related to the environment, such as the maltreatment of the environment by humans and anthropocentric utilization of nature. Taking Aamer Hussein's collection of short stories, i.e., *The Swan's Wife*, as a sample, the current study, in this context, sheds light on how nature/environment and postcolonial understanding can serve as a metaphoric signifier for healing colonial wounds. Through a detailed qualitative content analysis, the paper explains how nature is an engaging mechanism in Aamer Hussein's selected work that assimilates diasporic imagination with eco-consciousness. The study, thus, initiates a much-needed debate between the role of ecocritical thought and postcolonial consciousness in the Pakistani context.

Keywords: Anthropocentrism, diaspora, environmental sensitivity, postcolonial consciousness

INTRODUCTION

The intersection between postcolonialism and ecocriticism is an interesting, rather esoteric concept that demands an investigation of ecocritical and postcolonial sensitivity. According to Buell et al. (2011), "ecocritics had emphasized ties to place, post-colonialists had foregrounded displacements" (p. 421). Eco-colonial studies embrace ethnicity and differences to thwart eurocentrism and ecological racism, which

can be a source of catalyzing the existing environmental problems (Afzal, 2017). Land and people are affected by both empire and colonization, and postcolonialism is essentially anthropocentric.

Colonization means the coming over the whole environment and region under the hegemonic control of humans (Afzal, 2017). While postcolonial studies broaden the ecocritical perspective of inclusion of not only humans but also nature as a victim of postcolonial hegemony, interestingly, ecocriticism acknowledges the indulgence of diverse human groups instead of generalizing humans in one simple category who are the offenders of Nature. Both colonization and anthropocentrism consider landing an empty property to be taken over by the offenders. Concerns pertaining to cosmopolitanism, the Anthropocene, trauma, and migration are also articulated through ecocriticism (Mason et al., 2013).

Aamer Hussein's collection of short stories, *The Swan's Wife* (2014), is taken as the sample for the current study as it both explicitly and implicitly bonds with postcolonial sensitivity and an attachment to Nature. In this regard, the way nature/environment acts as a healing mechanism for postcolonial sensitivity is the concern of this research. It is found that Nature is serving as a metaphoric signifier for healing colonial wounds. Through a detailed qualitative content analysis, the paper explains how Nature is an engaging mechanism in Aamer Hussein's selected work that assimilates diasporic imagination with eco-consciousness. The study, thus, initiates a much-needed debate between the

role of ecocritical thought and postcolonial consciousness in the Pakistani context.

Writers are generally inspired by the places of their existence and develop a distinct compassion towards them. The notion of *Place* occupies a central stance in literature as it positions a writer's creative endeavor, his work, within a specific context and location William Zinsser (1980) asserts that "every human event happens somewhere, and the reader wants to know what that 'somewhere' is like" (p. 88). Aamer Hussein's writings are representative of the various places and cultures he has been exposed to. He believes in the unavoidability of being exposed to diverse philosophies, cultures, ideologies, and languages, depicted by the employment of various narrators and multiple stylistic maneuvers being the characteristic feature of his work. Amit Choudhary articulates that "Hussein's stories are about individuals and their countries of exile, where the world itself is seen as a place of transit" (Khair, 2004, p. 702). This consciousness is thoroughly connected to cultural rootedness, and we can call Hussein's work 'situated cosmopolitanism.' As he has been close to various cultures and considers himself a world writer, for him, culture and race are important:

> I was 15 when I went to England to study, and there I met Iranians, Palestinians, and even had a Korean friend… There was a sense of displacement among them, a feeling that their home was elsewhere. Gradually, I also imbibed a similar feeling, and with political turmoil

taking place back home, it added to the feeling of rootlessness (Quoted in Siddiqui, 2015, para 7).

Those stories from the selected book exemplified the Human-nature interaction and postcolonial sensitivity. These stories raise a clear stance on environmental discourse and reveal the man/nature binary. Furthermore, the environmental tensions, through texts and narratives, are elaborated on at length by the characters.

Research Questions

1. How do the selected stories present the interface between postcolonial and ecocritical philosophies?
2. Which ecocritical undertones of Nature contribute to the enhancement of postcolonial sensitivity?

Significance of the Study

The study is significant as it can illuminate the intersection of ecocritical and postcolonial sensitivity established in literary texts in the Pakistani context. Further, it would be helpful for emerging writers, teachers, and students who want to examine or incorporate these themes in their writing.

METHODOLOGY

The present research explores the postcolonial ecocritical consciousness in the atmospheric diasporic writings, *The Swan's Wife* (2014) by Aamer Hussein. The detailed content analysis of the selected short stories from the book, on the basis

of purposive sampling, is executed. The stories with an explicit focus on place, land, home, and habitat are selected to facilitate the main concern of the research, i.e., to examine the presentation of colonial-ecological philosophies and undertones in accordance with Aamer Hussein's peculiar writing style. It is, thus, an exploratory and descriptive study in nature. Content analysis is opted for, keeping in view that it facilitates providing multiple interpretations pertaining to words, images, dialogues, and characters. The theoretical framework the research has focused upon is Nixon's (2005) notion of *place being displacement* and the postcolonial ecocritical concept of *Othering* of silenced Nature and dis-oriented humans.

LITERATURE REVIEW

Postcolonial Ecocriticism: Issues and Perspectives

The colonialist discourse inherent in postcolonial theory took its roots in the 18th century when Joesph-Ernest Renan, in his *La Réforme intellectuelle et morale* (1871), sketched out the supremacy of the imperial nations to civilize the colored nations intellectually, socially, and culturally. Postcolonial discourse offers a counter-narrative to the Eurocentric beliefs of the Global North. It perpetuates environmental justice whereby each section of the natural world has the freedom to exist apart from capitalist hegemonic ideals. Postcolonialism, in this sense, can be termed as "anthropocentric" (Huggan & Tiffin, 2015, p. 208), as evident in Fanon's *The Wretched of the Earth* (1961),

Said's *Orientalism* (1977) and *Culture and Imperialism* (1993). Environmentalism, or Green Studies, is a relatively new field that seeks to determine the intersection between nature and humans in diverse ways. Postcolonial Ecocriticism states that humans' maltreatment must be addressed first before addressing non-humans' needs.

Eco-consciousness vis-à-vis postcolonialism implies a healing relationship as Wordsworthian nature can take up a sustainable role in alleviating colonial wounds. An environmental discourse informed by postcolonial sensitivity opens up how vulnerable entities are (mal) treated, objectified, subjugated, marginalized, and victimized by a dominant subject. According to Mukherjee (2010b) in *Postcolonial Environments*, "the relationships between human and non-human agents or actors that define the history of the Indian subcontinent is what I understand as 'environment'" (p. 5). Since both are downtrodden, the remedial interdependent symbiosis is fundamental to initiating the process of recovery from postcolonial anxiety.

Huggan's and Tiffin's *Postcolonial Ecocriticism: Literature, Animals, Environment* (2015) displays an exhaustive and cross-cultural relevance of green postcolonialism. It further offers cultural, historical, political, and ecological insights into postcolonial anxiety. The binaries such as wealthy/poor, master/slave, and developed/underdeveloped highlight some of the core problems existent in post-colonialism. Similarly, *Greening Postcolonialism: Ecocritical Perspectives* (2004) by Graham Huggan also entwines

the two fields and describes the utility of non-human actants for human beings in the social and cultural realm. In this context, the ecological discourse can pave a path for a fruitful alliance and "a productive overlap" between the two theoretical models (Huggan, 2004, p. 701).

In *Environmental Justice Reader* (2002), the issues pertaining to social inequality, colonization, and environmental degradation are portrayed, which may "shape the aspiration toward 'postcolonialism' or 'green postcolonialism'" (Heise, 2010, p. 252). Pablo Mukherjee's reading strategy for reading postcolonial environmental text offers affinities between how both critical theories are a gateway to a unified understanding of nature and postcolonialism. According to him, the content and thematic style of postcolonial texts may be ambiguous upon first reading; however, a deeper study can unveil topographies in which the narrative structure is resistant to colonial imports. He further scrutinizes how the "novel itself is a register of the environment of uneven historical development specific to postcolonial India" (Mukherjee, 2010b, p. 82). The uneven style of South Asian Novels, according to Mukherjee, reveals the deeply entrenched artistic responses to history and culture where environment, culture, and history are intertwined and interdependent.

Pakistani Fiction and Ecological Discourse

Pakistani anglophone writing offers diverse co-mingling between nature and culture. Scott Slovic, an ecocritical theorist in

Ecocriticism of the Global South (2016), asserts that Pakistani literature is slowly coming to terms with the environment and offers globalized transnational interests through its distinct ecological turn. Uzma Aslam Khan, Nadeem Aslam, and Mohsin Hamid's fictional narratives deal with environmental violence, pollution, waste materials, contamination, and lack of environmental sustainability. Hamid (2013), in *How to Get Filthy Rich in Rising Asia*, states how the "city's neglected pipes are cracking" (p. 98), the contamination of "underground water mains and sewers mingling, the taps" draws attention to threats to human health caused by pollution (pp. 99-100). Kamila Shamsie (2009) uses the concept of 'ecological risk' to define an array of ecological transformations in a global context. Her novel *Burnt Shadows* (2009) delineates the tropes of deteriorating environmentalism and its catastrophic aftermath. Owing to global representations by Pakistani authors, Masood Raja (2018), in his article "The Pakistani English Novel: The Burden of Representation and the Horizon of Expectation," claims that the "Pakistani novel in English has finally come of age and has garnered its space within and without Pakistan" (p. 2).

Discussing Pakistani fiction, Hashmi (1993) writes that formalist and syntactic dimensions of Pakistani novels underlie specific features, such as linguistic and stylistic, turning it into an "indigenized Pakistani language" (p. 100) but is also very near to what Mukherjee (2010a) dubs "uneven development" (p. 14).

However, this unevenness is due to colonial history that resides by and large inside Pakistani culture. Although Pakistani fiction is researched (e.g., Pirzadeh, 2016; Rahman, 2011; Yaqoob, 2015) from aspects such as toxicity, eco-consciousness, and environmental crisis, the healing impact of environment on postcolonial sensitivity remains an under-researched area which needs consideration. The interconnectedness between the environment and humans is mandatory for healing racial, social, and cultural wounds. By dint of Mother Earth's universal traits of love and care, the postcolonial pangs of slavery and exile can be minimized, if not obliterated.

Therefore, the current study aims to bridge the current gap between diasporic imagination and the utility of the environment to cure colonial wounds. *The Swan's Wife* (2014) demonstrates how ecological awareness and natural ties can help redeem individual deficiencies and offer them to act out their angst.

Theoretical Framework

Double Consciousness of Place: *Place is Displacement, and Displacement is Place.* The place is the central binding concept for ecocriticism and postcolonialism. From a postcolonial perspective, there is a focus on the reimagining and rethinking of place and its history. On the other hand, ecocriticism centers on the conservation of place. Postcolonialism generally focuses on the discourses of former colonies, and ecocriticism relies prominently on the western (American or British) models

of theorizing. A notable argument is put forward by Frantz Fanon (1961, p. 44, as cited in DeLoughrey & Handley, 2011, p. 3) that "for colonized people the most essential value, because the most concrete, is first and foremost the land: the land which will bring them bread and, above all, dignity." Therefore, he implied the foundation of the domain concerning postcolonial ecocriticism. "Land" is the term that is not only the most prominent identity marker of former colonies but also is a basis of maintenance or livelihood for both the colonizers and colonized inhabitants during colonialism. Thus, a synthesis of the ideologies of both postcolonial critics (like Bhabha, 1994; Fanon, 1961; Said, 1993; Spivak, 1998) and ecocritical critics (e.g., Buell, 2001; Love, 2003; Morton, 2007) could be constructed.

Nixon (2005) further accentuates its need to bridge ecocriticism and postcolonialism. He stressed the alliance of these two fields. Nixon believed that globalization is the binding phenomena of ecocriticism and postcolonialism as he stresses that "in an era of giga mergers and nanosecond transnationalism, we cannot persist with the kind of isolationist thinking that has, in different ways, impeded both postcolonial and ecocritical responses to globalization" (p. 248). Further, he reflects on the binary bioregionalism/ cosmopolitanism where bioregionalism is – "one's local part of the earth whose boundaries are determined by a location's natural characteristics rather than by arbitrary administrative boundaries" (Jay Parini, as cited in Nixon, 2005, p. 236).

The notions of global/national and stranger/native are knitted in a cause-and-effect relationship as rightly put by Richard Mabey (1994): "the challenge, in a world where the differences between native and stranger are fading, is to discover veins of local character which are distinctive without being insular or withdrawn" (p. 71). Nixon termed this vision environmental double consciousness where the underlying histories promote place (land, wilderness, and pastoral) as being discovered in relation to hybridity, displacement, and cross-cultural of one's imagination of place. This concept is exemplified in V. S. Naipaul's, The Enigma of Arrival (1987) and Nature's Government (2000) by Richard Drayton. Naipaul owns an environmental double consciousness as "behind the wealth and tranquility of an English idyll, he remembers the painful, dystopian shadow garden of the transatlantic plantation that helped make that idyll possible" (Nixon, 2005, p. 240).

Evidently enough, we can adumbrate by saying that each place possesses a past comprising the feeling of displacement as Nixon (2005) asserts that "place is displacement" (p. 241) along with an assertion of displacement is place being location: "a matter of (social) 'locale,' (geographical) 'location,' and 'sense of place.' Elements of nature (elemental forces), social relations (class, gender, and others), and meaning (the mind, ideas, symbols)" are unified in this concept (Agnew, 1987, p. 28). We can synthesize this with Buell's (2001) conception of place which is the "configuration of highly flexible subjective,

social, and material dimensions…" (p. 60). This notion of place as displacement and displacement as a place is one of the defining characteristics of eco-colonial criticism informed by double consciousness of ecocritical and postcolonial sensitivity. The present research relies on it as one of the analytical precepts for the analysis of selected texts. Secondly, another aligned principle with this double consciousness of place is the critical conceptualization of 'othering.'

Subdued 'Other' (Colonized Nature and Humans). Elizabeth DeLoughrey (2014) holds a similar view as that of Nixon in terms of discarding American centralism in environmental discourses by pointing out that "some of the work of postcolonial-ecocriticism includes examining the implications of foundational narratives, problematizing assumptions of a universal subject and an essentialized nature, and examining how forms of dominance are naturalized" (p. 321). The object/subject clash has signified many philosophical discussions in postcolonialism, and further, this is heightened by ecocritical questions of nature/human nexus as rightly put by Aldo Leopold, humans must abandon the long-held view that land is a commodity and come to see themselves not as conquerors of nature but citizens within it. We must come to regard the land, by which he means "soils, waters, plants, and animals," as part of a larger community. The non-human members of this community have a "right to continued existence, and at least

in spots, their continued existence in a natural state" (Leopold, 1970, as cited in Zammito et al., 2008, p. 106). The "Other" in postcolonial discourse, often represented as the dominated natives (colonized), is thus stretched to include the non-human world of forest, soil, animals, rocks, and valleys, among others, are the site of extraction. This position resonated in Gayatri Spivak's critical essay entitled "Can the Subaltern Speak?" where Spivak (1998) argues:

> A group of countries, generally first-world, are in the position of investing capital; another group, generally third world provides the field for the investment, both through the comprador indigenous capitalists and through their ill-protected and shifting labor force. In the interest of maintaining the circulation and growth of industrial capital (and of the concomitant task of administration within the nineteenth-century territorial imperialism), transportation law and standardized education systems were developed—even as local industries were destroyed, land distribution was rearranged, and raw material was transferred to the colonizing country. (p. 287)

Thus, Spivak recognizes the human/nature dichotomy, and implicit in her schemata is the notion that the neo-colonialists and indigenous people take one end of the binary and the oppressed class and nature form the second side.

ANALYSIS AND DISCUSSION

In *The Swan's Wife* (2014), Umair Omar, the speaker and the character, is revealed at various stages of his life and can forthrightly be taken as one who represents an alter ego of writer Aamer Hussein. Umair and Hussein share the similitude of being exposed to different cultures. Both were academicians, possessing the sensitivity of a diaspora stemming from the hybrid sensitivity of cultural clashes. The stories Knotted Tongue-I, Third Postcard from Umair, Fourth Postcard from Umair, 9th Extract from Refika's Notebook, Knotted Tongue II, and Ahmar and Anbara are selected as they entail both postcolonial and eco-conscious motifs in them.

Postcolonial Humans and Their Displacement

Knotted Tongue-I is the story in the book which dwells on the themes of exile and displacement while pronouncing the story of an immigrant writer Zohra by offering a riveting window to her struggles and the tribulations of captivity and 'otherness' that she encounters in a foreign land. Zohra and her writing creativity are introduced with an engaging orientation of Nature, "The writer enclosed some poems whose words were like a drop of rain and arrowheads of fire. The letter came from my old country" (Hussein, 2014, p. 41).

Her writing was not just wording but rather identified as *drops of rain* and *arrowheads of fire*. *Rain* and *fire*, the elements of Nature, seem to allude to her individuality, symbolizing the anguish,

turmoil, and dissatisfaction she was trying to grapple with. The notion of hybrid place, intercultural experience, and the desire for ultimate grounding and rootedness is the conundrum that Zohra was trying to solve. However, despite her efforts, she stays unanswered. While contemplating the freedom associated with her motherland in comparison to the suppression she faced in the foreign land, she maintains that,

> I want to go home to do something. Here one's tongue is useless. The bastards seal our lips and leave our arms paralyzed. I can't speak anymore, neither verse nor protest. Here I'm a vagabond, I carry my home on my back. (Hussein, 2014, p. 42)

The place, the essential interconnecting concept, is stressed in the text by Hussein as the bailiwick of congruity, which serves as an ever-defining mechanism of the sensitivity, identity, intentions, and motifs of Zohra, the immigrant. Nevertheless, this complex place sensitivity is further problematized when her own country, even, could only be ascertained to be a mirage of freedom because eventually it is revealed that *"another year went by and Zohra came back to this city"* from her native country. "She said: there each sound gets stuck in my throat. One can't even sing. Let alone shout. Better for me to stay away for a while from our homeland" (Hussein, 2014, p. 42). These descriptions enunciate the conflict between the consciousness of national spirit along with the sense of being a stranger in a

foreign land and the resulting complicated sense of displacement. Nixon (2011) maintains that displacement is not merely the physical movement of communities or the group of people from one place to another, but rather it offers a wide array of possible connotations, including "the loss of land and resources beneath them, a loss that leaves communities stranded in a place stripped of the very characteristics that made it habitable" (p. 19). In the case of Zohra, this convoluted feeling of subjugation is transmitted as a result of the mental thralldom she faced as an immigrant coupled with the loss of freedom and identity. It further is juxtaposed and impinged with the imaginative freedom and impulse Nature seems to offer to the writer, Zohra, as "In a glass hall on the banks of a river, one afternoon. White swans skimmed the surface of the water. She'd gathered her thoughts into poems and read aloud two of them" (Hussein, 2014, p. 42).

Correspondingly, *rain* and *fire*, manifesting Zohra's writing, in fact, in the story, function as the objective correlative of the diverging affiliation of Zohra with reference to the two countries she resides in. The desired creative freedom she was yearning for was not provided in either country. The local/foreign binary seems to diminish as for Zohra, both countries are offering the same creative space. The world, for Zohra, is not demarcated in foreign or locally but rather is a global field for her. As Brennan (2006) states,

> The intended point [of globalization] is rather that the world is being reconstituted as a single social space. One might interpret this to mean that the world is becoming more homogenized, that we are seeing the creation of a single, albeit hybridized, world culture whose pace of life, tastes, and customs[…] have increasingly fewer local variations. (p. 129)

Here, the foreign and local cultures offer Zohra the same artistic homogenized space, where she feels displaced and knotted tongue. *I am a vagabond, I carry my home on my back*, is the repeated colonial and ecological register of the story as the loss of home, freedom, peace, and creativity she mourns about was the proximity with nature, which later she availed by retaining her creativity in harmony with Nature. Zohra being a colonial subject is contrasted with Zohra being a creative, independent, and free writer. Furthermore, this freedom and independence are shaped and manifested in her intrinsic bonding with Nature, contributing to assigning the story its ecocritical hue. Clark (2019), while reflecting on the worth of contemporary ecocriticism and the human-nature nexus, maintains that "Ecocriticism's goal can provisionally be described as that of some state of human freedom and flourishing in which non-human life is fully recognized" (p. 138). The non-human existence of swans was potent enough to subside the prevailing injustice which Zohra was breathing in. Her entrapment turned out to have no boundaries, either local or foreign; the world, for her, had the same

ethics and conduct everywhere except in the purview of non-human existence and environmental synchronization. The *home* she was searching for turned out to be the cuddle of nature. She constantly yearns for the ultimate creativity in an ideal place while pronouncing that "once home, my deprivation will become my language of freedom" (Hussein, 2014, p. 42). The role of Nature is that of an ideal place or a creative home for the subjugated and silenced postcolonial individual, Zohra. Here, the human-nature intersection seems to come into play to counter the colonial human-place nexus. There is the constant abutment of Zohra's old or native country in opposition to her place of migration, augmented and confounded by her sense of being an outsider in a global world as the desire that *Now I shall turn this foreign tongue into a whip and lash them with their words* is useless because even in her native place she mourns that *at home each sound gets stuck in my throat*. Also, the healing power of Nature, living near the *banks of the river*, turns out to be a potent remedy for Zohra's anxiety of displacement, which is not dissolved even in her return to the native country but rather by building an affinity with Nature. Huggan and Tiffin (2007) delineate while considering the vein of postcolonial ecocriticism in any literary text that "postcolonial ecocriticism preserves the aesthetic function of the literary text while drawing attention to its social and political usefulness, its capacity to set out symbolic guidelines for the material transformation of the world." (p. 14). *Knotted Tongue-I*,

thus, offers useful symbolic insight that human liberation could be achieved by reconnecting to the non-human world.

In the twenty-first century's technological advancement, people persist inseparably associated with Nature and its various phenomena despite being isolated and deracinated. This connection is built and evident through Hussein's *The Swan's Wife* (2014), where eco-cosmopolitanism is implied by denoting the way Nature is bridging the rift between the individual global citizen of the world and his seclusion due to this. The isolation and the resulting turmoil could be minimized with the rebonding and reconsideration of our natural surroundings, which are pure and comforting. Batra (2019), while reflecting on the ecological consciousness in a literary work, proclaims that "As we undertake this exercise to focus on place, land, niche, home, habitat, among others, our main concern is to discover the writer's point of view with regard to nature" (p. 241). The probe of ecological awareness for him turns out to be, "Are the values expressed in the work consistent with what is termed as 'eco-ethics' or sound ecological principles" (p. 241). Hussein's texts in *The Swan's Wife* (2014) exemplify linguistic and conceptual ingenuity, giving voice to environmental sensitivity, hinting towards the lost home, the neglected environment, and, quite categorically, the anthropocentric orientation of the characters. In 3rd Postcard from Umair, the description of Umair's sister is a specimen of the environmental consciousness constructed through the

postcard scenes and tropes which we may call "evoking the everyday Anthropocene" picture of human-nature juncture. The subject-object nexus of the human and non-human world is palpable as Umair decrees in the postcard that:

> Sitting by the window of her London flat. Behind me there's a red brick wall. Here she paints in her eyrie, in a tower. Her studio overlooks tall palms, jasmine bushes, bright flowers. Later with green figs, white peaches, local cheese, we drink summer wine. My sister calls it Poor Man's Sangria. (Hussein, 2014, p. 50)

Though the description etched by Hussein may have an anthropocentric bearing, the readers are deftly drawn, indirectly, towards the ethical or eco-centric tremors with the expressions like overlooking *tall palms, jasmine bushes, bright flowers,* and nature itself reduced to *poor man's sangria.* It may serve to evoke the positioning of the characters with the environment while alluding to their eco-sensitivity, which may be equated with what Panov (2013) asserts as '*axiological positioning'* when he defines *ecological consciousness* as:

> Ecological consciousness is understood as a reflection of the psyche of a variety of man's relationship with nature, which mediate its behavior in the "natural world" and express the

axiological position of the subject of consciousness in relation to the natural world. (p. 380)

However anthropocentric, these rambling descriptions call for the possible range of meanings regarding the way the eco-sensitive or homocentric imagination of Hussein and the characters he creates operates in his stories. In this regard, Menely and Taylor (2017), as reaffirmed by Ryan (2019), underscore the possibilities of such homocentric presentations of literary works by stating that "the Anthropocene, for all its uncertainties and dislocations, continues to affirm the relevance of the critical and discursive analysis for formulating alternative ecocultural imaginaries and relational possibilities" (p. 165). In *The Swan's Wife* (2014), the knitting concept of ecological and colonial consciousness is Nixon's notion of *place as displacement and displacement as a place* because the themes of rootlessness, identity crisis, and diasporic isolation are constructed through references to places the characters belong to and an array of possible meanings that can be associated with attachment of the places, and the natural features of those places including the environment, flora, and fauna.

Voicing of Subdued Humans and Nature

Environment or Nature plays a pivotal role in any literary work, and in the words of Kochar and Khan (2021), it is:

> both material and biological. It is available in the form of resources.

Therefore, it becomes a commodity, which is used, spent, and consumed. Further, it is also biological and living. In fact, it is as alive as the humans. Human experience cannot be devoid of nature. (p. 8)

The stories that surround humans and are alive by their presence deal inevitably with an account or narrative of the environment in which they operate; as Iheka (2018) rightly puts it, "The narrative is less about a personal journey and more of an exposé of ecologies, a treatise of the way that humans are co-inhabitants of the world" (p. 29). Humans' connection with the environment and specifically the land they live in is critical because it not only grounds them but also specifies them belonging to a certain culture either as colonial subjects or sometimes as offenders of Nature as well as of other minority groups. This identification leads toward the categorization and "assumptions of a universal subject" and questions pertaining to "how forms of dominance are naturalized" (DeLoughrey, 2014, p. 321). In this regard, the identity and subjectivity of an individual are shaped by the environment he is a part of and the treatment he induces in that environment. This notion of identity and subjectivity being a cog of the environment is also avowed by Kochar and Khan (2021) in Environmental Postcolonialism: A Literary Response by the assertion that "The identity of an individual is closely linked with land, which is a natural resource. The symbiosis between subjectivity and land has been achieved in imperialism. Undeniably, the land has been the chief imperial motive" (p. 8). Aamer Hussein's writings are also based on his exilic and nostalgic experience of the land; he could no longer identify with him, and the resulting consciousness was bred in response to his displacement. Asghar (2020) reflects on Aamer Hussein's diasporic characteristic of writing by upholding that.

His fiction is replete with the themes like an identity crisis, nostalgia, exile, hybrid identity, and the attempt of assimilating in the diasporic space. He is trying to deal with the realities of the unfixed through the continuous struggle of the characters in new lands, struggling for their survival and with the hope to return back one day or the other. (p. 66)

In the 4th Post Card from Umair, it is ascertained that the *garden* that was once *the home* is lost, and at the same time, the only solace in the foreign land is the *blue pool* where anxieties might disperse and even vanish:

Satiated by the blue pool now, hot as heaven. Anxieties disperse, join red petals scattered around on stone and grass. Birds dip their beaks in the pool's water. In the sun's blaze, the leaves on their branches shine white. Now I think of the garden I once called home. (Hussein, 2014, p. 52)

The loss of a home is the loss of motherland coupled with the loss of serenity

and peace, which are demonstrated as the attributes only Nature could offer. So, the dilemma of exile prevails in the life of diaspora, and the loss of identity and tranquility from such lives is shown in consonance with Nature and environment:

> He takes me by the hand. We walk past the barking dogs, the white mare in the tall grass, down the avenue of cypresses, out of the gates, down the winding backstreets of the old town, to the edge of the land where the sea begins. And I take off my clothes, and I take off my name, and I swim off the page. (Hussein, 2014, p. 64)

The above extracts speak of humans' anxieties, complexities, and struggles in the lands of their exile and the nature/nurture or nature/culture conflicts in life. Only through their contact with nature can they figure out who they are, where they belong, and what cultural conditioning or social constructs they want to get rid of. Nature, yet again, is the refuge and possible refuge for such fretful individuals grappling with the issues of identity, ethnicity, and nationality.

> We traveled for seven hours and reached the town on the edge of the river at five. The sun was still high, and the roofs of the tall fort-like buildings glowed in its rays. At once, we set off to wander the lanes of the unknown town. The river had broken its banks, and several streets were underwater. (Hussein, 2014, p. 65)

In the story Knotted Tongue-II, while narrating the account of the female character Shams, Nature is not just the background or physical landscape. Rather a whole scheme of metaphoric signification is introduced to make the reader realize the undeniable, forceful, fierce, and unshakable existence of nature. This existence is equated with the enormousness of the feelings of displacement and exile. The anguish of the immigrants having the existence of *others* in the global world is presented, and their suffering and contemplation on their survivals in the foreign lands are depicted in association with Nature, quite prominently:

> Perhaps silent anger can be washed away by rainwater. I remember Shams saying, what a worry it is this having to make a living wage, it kills you. I'm far away from my country, far away from my faith, I don't want to die alone in this desolate city. (Hussein, 2014, p. 65)

The impact of the diasporic universe and space is undeniably the defining feature of Hussein's writings, as he terms himself as "one having the notions of "unfixed" (Afzal, 2017, p. 65). In Knotted Tongue-II, the female character, Shams, is constantly shown calling on her exile background while imagery of Nature is revoked as a stylistic device:

> One day in winter, a weeping friend told me Shams is ill. A flood of worries has swallowed her up. It had shown that day. … But just before spring arrived, she died…

But a friend said she had given verbal instructions that she wanted fire, not earth, as her final element. (Hussein, 2014, p. 67)

Bauer (2019) claims that literary work can significantly give voice to the pervasive contemporary disintegration, loss, and displacement resonating with the spirit of the age, which is quite evident as is termed by Grusin (2018) as "the Anthropocene" (p. 328). The stories of loss and disintegration that Hussein has generated in The Swan's Wife are the representations of myriad ways in which the subject of Nature can adduce the imaginative sensitivity of the writer and his characters. It may turn out to be anthropocentric but at the same time ecosensitive and eco-conscious too, as the metaphoric use of natural imagery sketches out the striking signification along with igniting the eco-imagination.

The story, *Ahmar and Anbara,* is a symbolic fable of an anthropocentric world and the allegory of materialistic human-nature orientation, which has exiled and migrated individuals, but the epistemological positioning of the subject (humans) and object (Nature) is now to a large extent inversed. Nature, like birds, is given voice and consciousness; it emerges as the savior of troubled humans. The story begins with an account of prince Ahmar who, the emblematic illustration of an immigrant, is deprived of all his intrinsic possessions.

I am prince Ahmar, the youth replied. My father is the king of a far-off country, but I have sworn to stay away from my land for seven years because my brother accused me of a crime I didn't commit, and I'm not at liberty to say where I come from. (Hussein, 2014, p. 121)

The exiled and migrated individual is shown struggling amongst the tremors of a foreign land, deprived of the comforts of home. Later in the story, that prince is murdered, and the rescuers are the pair of birds that, at the expense of their lives, are ready to create a rebirth for the dead prince. The birds spell out the solution to the prince's rebirth as:

But if his bride were to capture us and hold us close to each other, heart to heart, and with one stroke of her husband's dagger, separate our heads from our necks so that one of us shouldn't die before the other, and hold our heads above the ground where the prince lies, our blood will spill on the earth, and its drops will turn into rubies brighter than the one the wicked woman stole from his forehead. Then Ahmar's heart will beat again, and he'll come back to the world of living. (Hussein, 2014, p. 122)

The prince can be reborn, and for this rebirth, nature in the form of birds is offering life, wholeness, and meaning in the story. Once again, Nature is not only the frame of the story rather an ease and the only blessing left in the lives of casted out and uprooted individuals.

CONCLUSION

We can sum up this study by claiming that in the selected texts, the interface between postcolonial and ecocritical sensitivity is presented through explicit evidence of turmoil, identity crisis, and exile's agony. Nevertheless, these alone are not the issues. The rootlessness and displacement from the native world of expatriates further augment them. However, these individuals somehow can redevelop and rethink their closeness, relationship, and affinity with Nature. The texts exemplify the rapport between postcolonial and eco-oriented sensitivity and psyche. The Swan's Wife metaphorically, stylistically, and thematically is suggestive of the eco-colonial status of individuals. Nature's role as solace, savior, place, remedy, metaphor, and symbol is solidified as a resilient engaging mechanism in The Swan's Wife, which not only offers imaginative space, freedom, and creativity to Hussein's writing style but also renders his characters as being displaced *others* who both consciously and unconsciously embrace the elements of Nature as their counterparts. These multifaceted features of Nature contribute to the enhancement of postcolonial sensitivity in the selected texts.

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SOCIAL SCIENCES & HUMANITIES

Development and Validation of Social Cynicism Scale for Women

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ABSTRACT

The present investigation purported to develop and validate an indigenous social cynicism scale for young adult women. Following an exploratory sequential research design, the study involved three phases. In phase I, a qualitative study with ($n = 20$) young adult women is conducted to conceptualize the construct of social cynicism. The themes drawn from the data were used to develop a pool of 36 items. After extensive scrutiny and evaluation by five expert judges, 28 items were finalized that were phrased in a self-report five-point Likert rating scale. In phase II, the psychometric properties of the scale were established. Through non-probability purposive sampling, a sample of ($n = 227$) young adult women aged 18-28 years ($M = 22.29$ and $SD = 2.06$) was recruited for exploratory factor analysis. Principle Component Analysis was performed for factor extractions, while the Direct Oblimin method was applied for factor rotations. The Kaiser-Meyer-Olkin measure of sampling adequacy and Bartlett's test of sphericity were found to be significant. As a result, a final scale of 19 items with a three-factor model, namely institutional, experiential and dispositional cynicism, emerged that accounted for 42.41% variance, with an alpha reliability of .83. In phase III, another sample of ($n = 218$) young adult women with an age range of 18–27 years ($M = 22.48$ and $SD = 2.38$) was recruited to run confirmatory factor analysis that revealed a good model fit and validated the three-dimensional structure of the scale.

Keywords: Content validity, construct validity, dispositional cynicism, experiential cynicism, institutional cynicism, scale development, young adult women

INTRODUCTION

Our worldview significantly influences our cognitions, feelings, and behaviors. For example, social cynicism (SC) is a negative view of human nature, which entails exploitation by others and a lack of trust in social institutions (Leung et al., 2002). Similarly, Burgess (2015) argued that it is a belief about life and its working dynamics. Accordingly, socially cynical individuals consider this world a skeptical place, with equally distrustful social institutions, where ethical values are compromised to achieve vested interests. It means that it emerges from the non-fulfillment of high social expectations about social institutions, authorities, and society as a whole, leading to disillusionment, betrayal, and disappointment in the individual (Kanter & Mirvis, 1989). It eventually produces unhappiness and dissatisfaction in life.

Some prior investigations suggested using personal and social cynicism interchangeably, but both concepts are qualitatively unique and must be treated separately (Chen et al., 2006). While personal cynicism may be treated as a personality trait, SC is a worldview that pervasively impacts diverse social behaviors and attitudes (Chen et al., 2016). Defined both as a personal characteristic and a general perspective of the world, personal cynicism or simply cynicism (Butcher et al., 1990) is believed to appear initially during early childhood and encapsulates one's perceived experiences of social interaction and communication (Mills & Keil, 2005).

Previous studies have investigated SC across a diverse variety of workplace settings that shed significant light on its underlying dynamics and interrelations with other variables of interest. For example, while conducting a cross-cultural investigation, Leung et al. (2010) found that SC negatively correlated with job satisfaction. Similarly, another study concluded that SC had a significant negative relationship with job and life satisfaction while positively correlated with turnover intentions (Li et al., 2011). Moreover, West et al. (2015) argued that employees with lesser levels of SC would be less distrustful and show more corporate social responsibility. Furthermore, another study reported that SC affects the person-organization fit, thus impacting job satisfaction (Deng et al., 2011).

While converging on leadership dynamics within organizational settings, Byza et al. (2017) proposed that the congruence between leaders' and followers' SC shaped the leadership dynamics as it is the SC that influenced followers' leader-member exchange, extra-role, and proactive behavior. Similarly, another study investigated the effects of SC on employees on organizational cynicism and reported that they were moderated by organizational policies about fairness and giving independence (Kwantes & Bond, 2019). A study further argued that SC had direct and positive effects on perceived workplace bullying bringing in the moderating role of Islamic work ethic (S. Ahmad et al., 2021).

By studying SC beliefs at the individual level, Alexandra et al. (2017) found that it had a positive relationship with social dominance orientation. Moreover, the social dominance orientation mediated the relationship between individual SC beliefs and the perception of unethical behavior. Similarly, while contextualizing SC at a dispositional level, a study investigated its effects on traumatic experiences and found that it did not predict post-traumatic growth (Nalipay et al., 2017). Furthermore, SC was found to have a negative association with hope (Bernardo, 2013), while Lau et al. (2021) reported no association between SC and the sleep quality of the participants.

Overview of Scale on Cynicism and Social Cynicism

As far as assessment scales of cynicism are concerned, quite a few options are available to researchers. The Organizational Cynicism Scale (Brandes, 1997) is among the others that assesses cynicism in organizational settings and is comprised of three factors: emotional cynicism, cognitive cynicism, and behavioral cynicism. Brandes (1997) posited that within organizational settings, a change in the workplace dynamics brought a change in the cynicism levels of employees. It sheds light on the role of the workplace environment on employees' cynicism. Similarly, the Cynicism Scale by Turner and Valentine (2001) is also used to assess organizational cynicism. The unique aspect of this 11-item scale was the inclusion of statements on moral decision-making based on the challenges the employees working

in the customer care and sales department have to deal with in their professional interactions.

Furthermore, Bedford and Foulds (1978) developed the Personality Deviance Scales (PDS), which focused on the personality assessment of the psychiatric population. They divided the factors into two major orthogonal factors through hierarchical factor analysis: personal inadequacy and general hostility. At the same time, cynicism was treated as a subscale under general hostility and was labeled as distrust-cynicism. Also, through an 18-item Cynical Attitudes Towards College Scale (CATCS), Brockway et al. (2002) assessed cynicism among college students across four reliable dimensions: policy, academic, social, and institutional.

Similarly, cynicism was also one of the nine restructured clinical scales of the Minnesota Multiphasic Personality Inventory-II Restructured Form (MMPI-2-RF) by Ben-Porath and Tellegen (2008) that also included demoralization, somatic complaints, low positive emotions, antisocial behavior, ideas of persecution, dysfunctional negative emotions, aberrant experiences, and hypomanic activation. Here, once again, cynicism was treated as a subscale, and that too within the clinical framework, just like PDS (Bedford & Foulds, 1978) discussed earlier.

The overview of all these assessment measures indicates that most of the available scales of assessing the construct of cynicism are grounded in clinical or organizational settings, which are rather different from

social settings and experiences. Moreover, there are hardly any scales to measure SC except for the most extensively used Social Axioms Survey (SAS) by Leung et al. (2002), but it conceptualized SC as a subscale of SAS. Other than SC, SAS assessed four other factors: social complexity, the reward for application, spirituality (religiosity), and fate control. Its revised version was developed as Social Axioms Survey-II (Leung et al., 2012), which enhanced its cross-cultural validity and application to improve its psychometric properties. Consequently, the subscale of fate control in SAS-II was further subdivided into fate determination and alterability.

Moreover, not a single assessment measure among all these scales aimed to target women; rather, there are examples of developing and validating scales by testing the items on men as default participants and extending the results to women. The same situation occurred during the development of MMPI (Hathaway & McKinley, 1943).

Gender Dynamics and Social Cynicism

Talking about the unique positionality of women within a typical patriarchal system, Kara et al. (2012) argued that the vulnerability of women arises from the unique challenges they face, like motherhood, gender stereotyping, and discrimination. For example, as the gender stereotypes considered men to be born leaders, it became rather difficult for women to acquire leadership roles in society (Schaap et al., 2008).

In the context of these findings, it can be assumed that women might feel uncomfortable and discouraged from carrying out their professional responsibilities, especially without any substantial support, as it looks like an intrusion into their personal and social life. Unfortunately, according to our knowledge, the research scholarship lacks gender analysis on SC, though a few studies have reported gender-based findings on cynicism. Like, Töyry et al. (2004) found higher levels of cynicism among adult men employees. Nevertheless, conversely, Greenglass et al. (2001) demonstrated higher cynicism in women nurses. Similarly, another study revealed that women reported a 6.7 times stronger impact of employee cynicism on work withdrawal (Abubakar et al., 2017).

Helgeson (2020) pointed out that gender dynamics vary from culture to culture, which further highlights the need for an indigenous and culturally relevant scale of SC for women that can manifest the unique socio-cultural, familial and political context. Finally, it gives a glimpse into the precarious times in which we are living these days, where there is a surge of violence against women, which many argue, is not some new phenomenon but a manifestation of increased awareness and resistance of the women in fighting back against these atrocities (S. Hafeez, 2021; Kirmani, 2021).

Similarly, it is observed that by projecting negative stereotypes of women, the media is also aggravating violence against women in Pakistan (Khan, 2021). Moreover, the COVID-19 pandemic also

played a vital role in manifesting intimate partner violence due to financial instability and higher levels of stress and anxiety (Munir et al., 2021). Keeping in mind all these experiences of women, it becomes even more vital to examine SC among Pakistani women, which is why the current study was designed to develop and validate an indigenous SC scale for young Pakistani adult women following a multi-phase procedure.

This literature review enabled us to formulate the following objectives: (a) to investigate the conceptualization of SC among young Pakistani indigenous women and (b) to develop and validate a scale for assessing SC in young Pakistani indigenous women.

METHOD

Research Design and Procedure

Following an exploratory sequential research design, this study involved three phases, with samples recruited for each study across different periods. Conceptualized in January 2021, the data collection and analysis for phase I was conducted between January and February 2021. The sample recruitment for phase II was completed by March 2021, followed by sample recruitment for phase III in July 2021. The final results were compiled and interpreted in August 2021.

A qualitative study in phase I explored social cynicism in young adult women, starting with an inductive approach. The data was collected through focus group discussion (FGD) and open-ended questionnaires, and themes were drawn to generate an item pool for the scale, which was finalized after getting approval from a panel of experts. Based on this item pool, a tryout phase of the item pool was conducted in phase II, which reported satisfactory findings, resulting in the recruitment of a sample for exploratory factor analysis (EFA). To further confirm emerged factors through EFA, a confirmatory factor analysis (CFA) was conducted in phase III to evaluate the scale's construct validity. As the scale was developed in the English language, only those participants recruited in both phases II and III who could easily comprehend its content and were able to fill out the questionnaire online.

Ethical Considerations

In all the phases of the current study, strict adherence to the ethical guidelines mandated by American Psychological Association (APA) was followed. An ethics clearance certificate with reference no. PSY-31/ GCU/21, dated January 18, 2021, was taken from the Ethics Review Committee (ERC) at the Department of Psychology, Government College University (GCU) Lahore, Pakistan. All the participants were briefed about the nature and objectives of the study, and only those participants were recruited who gave their formal consent by agreeing to the terms and conditions for participation. The first author assured to keep their information confidential and private, only to be used for academic and research purposes. While the sample for the FGD was recruited online through a Zoom meeting link, the rest was recruited through Google forms documents.

The participants could only proceed after they had read, understood, and selected the 'Yes' option from the consent checklist. The Google form link was deactivated once the desired number of participants was completed. Following a sociodemographic characteristics sheet, the scale items were presented to each participant in a five-point Likert format. After completing the assessment, all participants were thanked for their volunteer participation. Forms with incomplete information regarding social cynicism items were excluded from the study. Moreover, additional permission was taken from the FGD participants for the audio recording of the session, which would be transcribed, translated, and interpreted anonymously for research purposes only.

Details of Subsequent Phases

Phase I Qualitative Study. As the study aimed to explore the indigenous and socio-cultural aspects of social cynicism among young adult women, an inductive approach was found appropriate for investigation. Following the qualitative research method, a sample of ($n =20$) young adult women was recruited in two stages through a non-probability purposive sampling technique from a public sector university. In addition, the triangulation method (Carter et al., 2014) was employed to enhance the quality and credibility of the qualitative data. Initially, data was collected through an FGD with $n = 6$ young adult women. At the same time, in the second stage, an open-ended questionnaire was administered to a sample of young adult women till the point of thematic saturation

(Guest et al., 2020), which resulted in an additional sample of $n = 14$. Furthermore, for better understanding and comprehension, each participant was presented with the definition of social cynicism (Burgess, 2015) at the start of data collection.

Phase II Exploratory Factor Analysis (EFA) Study. This phase was also divided into two subsequent stages. In the first stage, a tryout of the 28 items social cynicism scale in women (SCSW) was conducted on a non-probability purposive sample of ($n = 50$) young adult women recruited online from various universities through a Google Forms link. By using SPSS version 21, results were generated that showed significant reliability indices for the scale. Furthermore, it led to the formal recruitment of the sample for the EFA, with $n = 227$ young adult women, through the non-probability purposive sampling technique. Cohen et al. (2013) suggested that for better psychometric properties, the scale must be administered to a sample equivalent to five or 10 times the total number of items; hence this suggestion was incorporated into the current investigation.

Phase III Confirmatory Factor Analysis (CFA) Study. CFA is conducted to establish the construct validity of the scale further and test the hypothesis that the factor structure that emerged in EFA can be replicated in an independent sample (Stevens, 1996). Following a similar sampling technique and inclusion and exclusion criteria of EFA, a sample of ($n = 218$) young adult women aged 18–27 were recruited. Following the

guidelines of Cohen et al. (2013), a sample equivalent to five or 10 times the total number of items was recruited for this phase.

RESULTS

Phase I Qualitative Study

Only young adult women studying for at least two years in public sector universities were recruited in this phase with an age range of 20-23 years ($M = 21.1$, $SD = 0.94$), without any reported physical or mental health-related issues. The sociodemographic characteristics in Table 1 showed that most of the participants were of 21 years (40%), middle-born (65%), had 14 years of education (70%), and belonged to the nuclear family system (85%), with an average monthly family income of 136,000 ($SD = 95205.04$) PKR.

Following Braun and Clarke's (2006) guidelines, an inductive thematic analysis (TA) approach was used to analyze the whole data. All the transcription-based data and open-ended questionnaire responses were read several times for better familiarization and understanding. Initially, similar themes were clustered together and further inspected for repetitive themes. The reduced data was then analyzed to generate codes, leading to the extraction of central themes with relevant sub-themes, which served as the basis for item generation (Younas et al., 2021). It resulted in a pool of 36 items, which were presented for content validation and further scrutiny to a panel of five expert judges, including four SMEs (subject matter experts, all Assistant Professors of Psychology) and one English language expert (an M.Phil. scholar of English language and literature) for potential identification of grammatical and linguistic errors. They removed eight items, including vague and overlapping items, to reduce redundancy and those about the religion-based social cynicism owing to their sensitive nature, and eventually finalized a 28-item scale. As Babakus and Mangold (1992) recommended using a five-point Likert scale for better response rate and quality, we also transformed it accordingly with the following options: 1 (strongly

Table 1

Sociodemographic characteristics of participants in phase I (n =20)

Variables	*n*	%	Variables	*n*	%
Age (years)			*Formal Education (years)*		
20	6	30	14	14	70
21	8	40	15	6	30
22	4	20	*Family System*		
23	2	10	Joint	3	15
Monthly Family Income[a]			Nuclear	17	85
Below and up to 100,000	14	70	*Birth Order*		
100,001–200,000	2	10	Firstborn	4	20
200,001–300,000	3	15	Middle born	13	65
300,001–400,000	1	5	Last born	3	15

Note. [a] Reflects income in PKR

disagree), 2 (disagree), 3 (neither disagree nor agree), 4 (agree), and 5 (strongly agree), indicating the degree to which the participants would report social cynicism.

Phase II Exploratory Factor Analysis (EFA) Study

Table 2 highlights sociodemographic characteristics for both phases II and III. For example, the age range for phase II was 18-28 years ($M = 22.29$, $SD = 2.06$), while for phase III, it was 18-27 years ($M = 22.48$, $SD = 2.38$). Moreover, the average monthly family income in phase II was $M = 142594.27$ with an SD of 173969, while for phase III, it was found to be

172288.99 with an SD of 372640.22. Also, the average formal educational experience of participants was found to be 13.48 with an SD of 2.02 for phase II and 16.27 with an SD of 2.19 for phase III, respectively.

To establish the authentication of data fitness for the factor analysis before running EFA, the Bartlett Test of sphericity ($\chi2 = 1041.51(171)$, $p < .001$) and Kaiser-Meyer-Olkin (KMO = 0.86) values were computed that showed significant results. Also, factors based on Eigenvalues > 1 with factor loadings $\geq .35$ were retained. Principal component analysis (PCA) was performed for factor extractions, while the Direct Oblimin method was used for factor

Table 2

Sociodemographic characteristics of the participants in phase II and phase III

Variables	Phase II ($n = 227$)		Phase III ($n = 218$)	
	n	*%*	*n*	*%*
Birth Order				
Firstborn	67	29.5	53	24.3
Middle born	102	44.5	95	43.6
Last born	56	24.7	52	23.9
Only child	3	1.3	18	8.3
Monthly Family Income[a]				
Below and up to 100,000	134	67.67	147	67.43
100,001–200,000	34	17.17	43	19.72
200,001–300,000	15	7.5	9	4.13
Family System				
Joint	55	24.2	41	18.8
Nuclear	146	64.3	133	61
SPDOP[b]	2	.9	1	.5
SPSP[c]	11	4.8	4	1.8
SPDP[d]	9	4	17	7.8
SPEP[e]	1	.4	7	3.2
Others	3	1.3	15	6.9

Note. [a] In phase II, 29 participants did not report their monthly family income. Therefore, the values reported here are for a sample of ($n = 198$) and in PKR. [b] Reflects Single parent family due to divorce. [c] Reflects Single parent family due to separation. [d] Reflects Single parent family due to the death of a parent. [e] Reflects Single parent family owning to the employment situation of a parent

rotations that resulted in a 19-item three-factor solution, accounting for 42.41% variance (Table 3).

Table 3

Exploratory factor analysis of the Social Cynicism Scale for Women (SCSW)

SCSW items	Factor loading		
	1	2	3
Factor I: Institutional			
SCSW 7	**.46**	-.09	.34
SCSW 15	**.36**	-.03	.24
SCSW 18	**.55**	.28	-.10
SCSW 20	**.65**	.08	-.00
SCSW 21	**.64**	.28	.01
SCSW 22	**.72**	.04	-.10
SCSW 23	**.44**	.27	.08
SCSW 24	**.62**	.05	-.04
SCSW 25	**.67**	-.12	.14
SCSW 26	**.57**	-.30	-.10
Factor II: Experiential			
SCSW 4	-.02	**.46**	.38
SCSW 8	-.04	**.63**	-.00
SCSW 9	.27	**.46**	.27
SCSW 17	.10	**.65**	-.11
Factor III: Dispositional			
SCSW 3	-.11	-.12	**.53**
SCSW 5	.07	.27	**.68**
SCSW 6	.40	-.17	**.48**
SCSW 13	.37	.10	**.48**
SCSW 27	-.00	.13	**.59**

Note. $N = 227$. The extraction method was principal axis factoring with an Oblimin rotation. The highest factor loadings are in bold.

Table 4 showed significant inter-correlations among all the factors of SCSW, justifying the use of the Direct Oblimin rotation method.

Moreover, the scree plot (Figure 1) also showed three factors for the scale. Based on face validity, interpretability, the meaningfulness of the research context, and the overall content of the factor, items were finally clustered into respective factors. Once again, in consultation with two SMEs (Assistant Professors of Psychology), the factors of the SCSW were labeled, and their further details were reported.

The factor I Institutional Cynicism comprised ten items (7, 15, 18, 20, 21, 22, 23, 24, 25, and 26), which explained 27.51% of the variance with factor loadings from .36 to .67. It included items assessing the SC experiences in women resulting from their interaction with key social institutions.

The factor II Experiential Cynicism consisted of four items (4, 8, 9, and 17) that explained 8.23% of the variance with factor loadings from .46 to .65. This subscale includes items referring to the daily life experiences of women that become source of SC.

Factor III Dispositional Cynicism comprised five items (3, 5, 6, 13, and 27)

Table 4

Inter-correlations of factors of Social Cynicism Scale for Women (SCSW) in phase II (n =227)

Variables	1	2	3	4	*M*	*SD*
1. Total SCSW	-	.89**	.69**	.78**	72.11	9.23
2. Institutional Cynicism		-	.41**	.52**	39.65	5.41
3. Experiential Cynicism			-	.41**	14.26	2.83
4. Dispositional Cynicism				-	18.21	3.17

Note. **$p < .01$
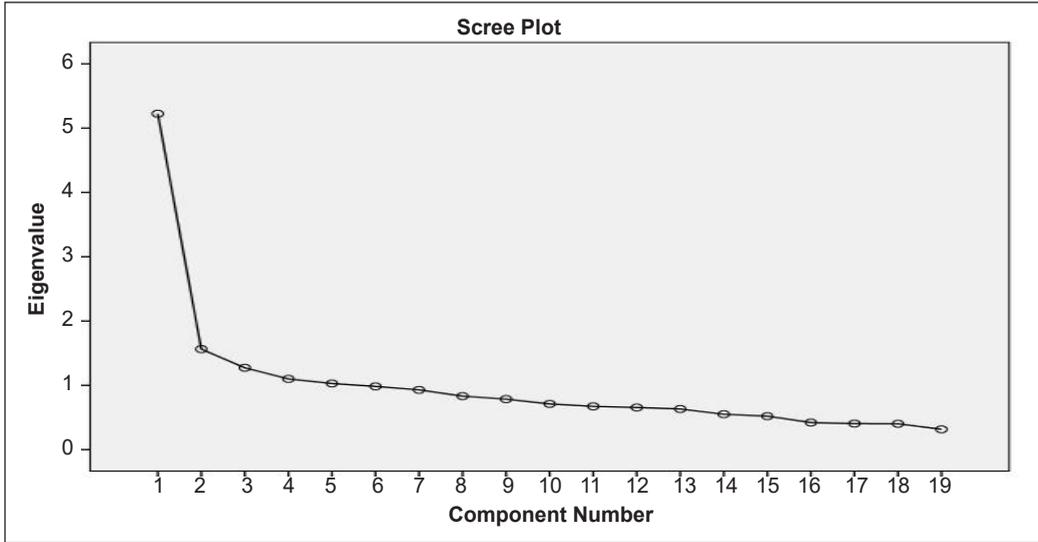
Scree Plot

Figure 1. Scree plot for Social Cynicism Scale for Women (SCSW)

that explained 6.71% of the variance with factor loadings of .48 to .68. It includes items regarding the gender-based stereotypes prevalent in the society that cause SC in women.

The overall Cronbach's alpha reliability for the SCSW was .83, while the reliability values for individual factors were observed to be .79 for Institutional cynicism, .54 for experiential cynicism, and .62 for dispositional cynicism. Hulin et al. (2001) reported that an alpha of .6-.7 indicated an acceptable level of reliability, and .8 or greater is a very good level. It means that while the overall alpha value was very good, for institutional and dispositional subscales, it is acceptable, but for experiential cynicism, it was low. Furthermore, Field (2018) argued that the minimum acceptable cut-off for alpha co-efficient in social sciences is .50; therefore, the reliability of the experiential subscale was also accepted, even though it was low.

The analysis of corrected item-total correlations showed a range of .19-.64 for all items. Furthermore, it did not show any significant change in alpha value if the item (3) with the minimum (r^{it} = .19) value would be deleted. Correspondingly, the corrected item-total correlations range for institutional cynicism was .28-.64. No significant change in the α value was observed if the item (26) with the minimum value (r^{it} = .28) was deleted. Similarly, the corrected item-total correlations range for experiential cynicism was .29-.48. It did not show any significant change in alpha co-efficient if the item (8) with the minimum value (r^{it} = .29) was deleted. Likewise, the corrected item-total correlations range for dispositional cynicism was .19-.52, and insignificant change was noted in the α value if the item (3) with the minimum value (r^{it} = .19) would be deleted. Moreover, the content of item 3 carried significance for the scale; therefore, it was decided to retain this item along with all the

other items with minimum corrected item-total correlations at this stage.

Phase III Confirmatory Factor Analysis (CFA) Study

The overall Cronbach's alpha reliability value for the scale was .87, while the reliability estimates for individual factors were .86 for institutional cynicism, .54 for experiential cynicism, and .55 for dispositional cynicism. It showed very good reliability for the overall SCSW scale as well as for the institutional cynicism subscale (Hulin et al., 2001) and low but acceptable

for both experiential and dispositional cynicism subscales as in social sciences, a minimum acceptable cut-off for the alpha coefficient is considered .5 (Field, 2018).

Through AMOS 21, CFA was run on the collected data, and the findings confirmed the three-factor solution of the SCSW obtained in EFA, as indicated in Figure 2. Initially, the default model I had slightly lower NFI and CFI values (Table 5) but after drawing two covariances between e7-e8 and e2-e18, all the indices reached the acceptable range (Hu & Bentler, 1998 as cited by Montoya & Edwards, 2021) such as CMIN/df < 3 (i.e.,
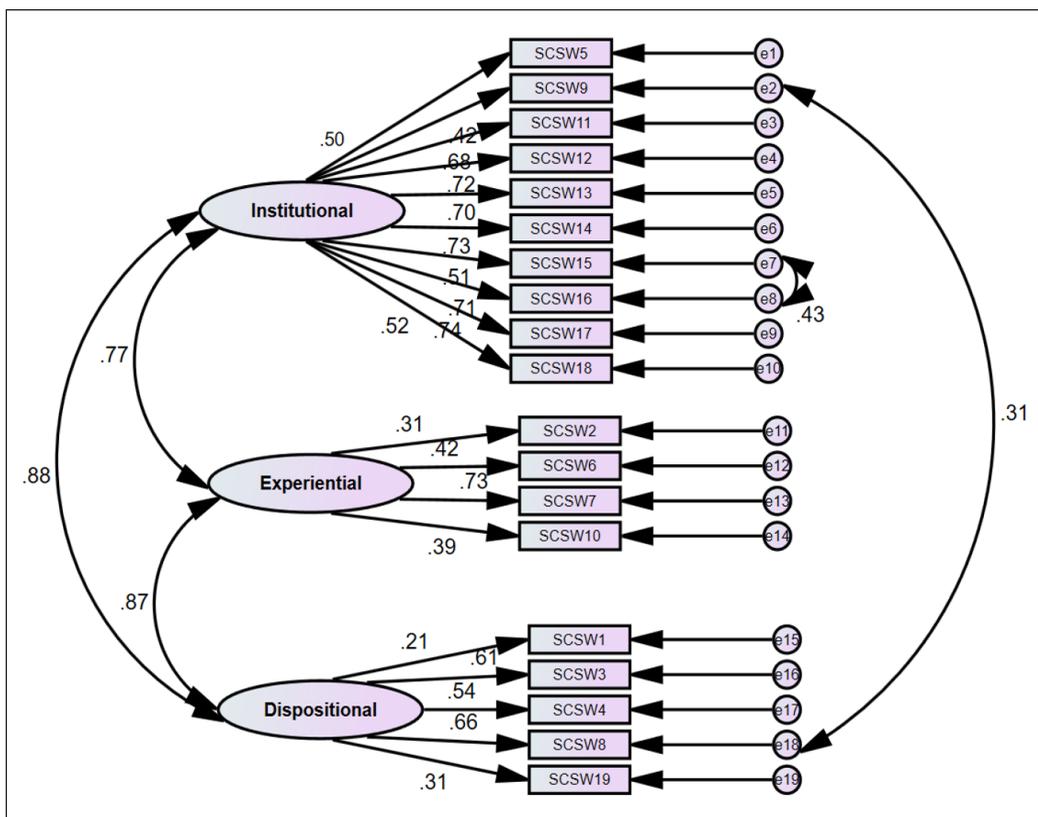
Figure 2. Path diagram showing a good model fit with the data
Note. The figure shows standardized estimates of factor loadings for all items of SCSW and the correlations for every covariance. The factor structure of SCSW explored through EFA in phase II of this study was confirmed through CFA in phase III.

Table 5
Results of confirmatory factor analysis for the Social Cynicism Scale for Women (SCSW)

Models	$\chi2$	*df*	NFI	CFI	RMSEA
Model I	326.12***	149	.77	.86	.074
Model II	287.93***	148	.79	.89	.066
Model III	270.35***	147	.81	.90	.062

Note. N = 218. Structural equation modeling was used for the analysis. NFI = normed fit index; CFI = comparative fit index; RMSEA = root-mean-square of approximation. ***p < .001

1.84); CFI = .90; GFI = .89; TLI = .89; NFI = .81; RMSEA = .06 with χ^2 = 270.35 (147), p < .001. The range of factor loadings for institutional cynicism was between .42-.74, for experiential cynicism, it was .31-.73, and for dispositional cynicism, it was estimated between .21–.61, respectively. The entire factor loadings were above the cut-off of .3, except for item 1 in the dispositional subscale. However, as the exploratory factor analysis showed good factor loadings on this item, it was decided to retain it at this stage.

DISCUSSION

Critical research scholarship and advancement in behavioral, social, and health sciences seem impossible without the development of reliable and valid assessment measures. It provides empirical foundations for investigating and studying research constructs and phenomena (Boateng et al., 2018). Moreover, it is also a well-established point that, like individual differences, cultural variance is equally important for investigating human development and adaptation, whether physical, social, psychological, moral, or cognitive (Habib et al., 2013).

Taking these leads, the present study aimed to develop an indigenous SC scale for young adult women to understand the interplay of specific socio-cultural contexts of our society. Starting with an exploratory phase, we tried to understand the underpinnings of SC-based experiences in young adult women as they reflected on their personal lives and observations and described the phenomenon in vivid detail. This rich data was then used to draw themes, which enabled us to develop an item pool for the proposed SC scale. After the initial scrutiny, SMEs and an English language expert were requested to establish its content validity. They discarded a few thematically redundant items and those about the institution of religion. Following the advice of Cohen et al. (2013) regarding test construction and development guidelines, we also removed those items that would either be triggering for the participants or potentially bring in a low response rate. It left us with a pool of 28 items that were formatted into a five-point Likert-type rating scale. The five-point Likert scale format was used for better response rate and quality, as recommended by Babakus and Mangold (1992).

The tryout stage brought in psychometrically promising results; therefore, the items were administered to a

sample of ($n = 227$) young adult women to run EFA. Following the results of the Bartlett test of sphericity with $\chi2 = 1041.51(171)$, $p < .001$, and Kaiser-Meyer-Olkin (KMO $= 0.86$) values, with Eigenvalues > 1 and retaining the factor loadings $\geq .35$, PCA was performed using the Direct Oblimin rotation method. It resulted in a 19-item three-factor solution that accounted for a 42.41% variance. As per Hutcheson (2020), these results indicated that the correlations between items were sufficiently large for PCA. Moreover, studies argued that higher cumulative variance (CV) yields better factor solutions, yet, in social and behavioral sciences, a CV below 50% variance is also acceptable (Williams et al., 2010), which gives credibility to the CV of the current study.

After consulting two SMEs, the factors of the SCSW were named institutional cynicism, experiential cynicism, and dispositional cynicism. For phase II, the overall Cronbach's alpha reliability of SCSW was found to be .83. At the same time, the indices for its subscales range between .54-.79. Hulin et al. (2001) reported that an alpha of .6-.7 indicated an acceptable level of reliability. Field (2018) also argued that the minimum acceptable cut-off for the alpha coefficient was .5. Because all the alpha values were above the cut-off of .5, they were accepted. Similarly, in phase III, the overall alpha value was .87, with a range of .54-.86 for its subscales. Institutional cynicism showed very good reliability ($\alpha = .86$). However, the α values for both experiential and dispositional subscales were a little above .5, which were accepted per the criteria given by Field (2018).

The first factor was labeled institutional cynicism and included the maximum number of items in contrast to other factors, highlighting its importance for SC in women. As the label suggests, most items explored SC concerning social institutions. If we take into account the very definition and conceptualization of SC, it will become evident that SC resulted from social institutions (Burgess, 2015; Leung et al., 2002). The only difference between SAS (Leung et al., 2002) and SCSW is that the former is a subscale and included items on social institutions in a general sense, while SCSW is comprised of items concerning the indigenous context of these institutions. Several studies have examined the impact of social institutions across the spectrum of gender. By addressing different socialization processes, Tabassum (2016) reported that women were assigned inferior status in Pakistan, with unequal political power resulting in discriminatory laws. It enhanced their vulnerabilities and fostered a pervasive culture of delegating an inferior educational, health, economic and political status. Another study concluded that due to gender inequality, the socioeconomic well-being of women in Pakistan had been compromised (Ashraf & Ali, 2018).

Similarly, Yasin and Aslam (2018) informed that the ratio of school dropouts for girls in rural settings is very high due to families' lack of interest and support. Furthermore, exploring the gender-based

institutional discrimination in the media industry, E. Hafeez and Zahid (2021) reported that women journalists face rampant sexism, a glass ceiling, a pay gap, and a lack of leadership positions. All these findings highlight that under a patriarchal system, all the social institutions interplay to create a discriminatory environment for women, which may lead to the development of SC.

Similarly, factor II experiential cynicism was based on the reported concerns of women regarding their day-to-day life experiences. During phase I of this study, public safety, and security concerns emerged as major themes concerning SC, and the literature supports these findings. For example, Ahmed et al. (2019) reported that women experienced different forms of street harassment in Pakistan, including visual, physical, and emotional forms of harassment. It led to anger, fear, shame, and humiliation in women and directly affected their participation in public life. Similarly, another study concluded that body objectification, street harassment, and abuse are irrefutable experiences of women in Pakistan that have a devastating emotional, psychological, and physical impact on women (N. M. Ahmad et al., 2020).

Lastly, factor III, dispositional cynicism, involves the items referring to the gender-based stereotypes that woman has to go through in her day-to-day life. It highlights a different set of responsibilities and expectations for women, which is disadvantageous as it increases their

vulnerability, causing negative repercussions as reported in various studies (Abubakar et al., 2017; Kara et al., 2012; Munir et al., 2021).

With a sample of (n = 218) young adult women, these three factors were hypothesized to be confirmed on an independent sample during phase III. After undertaking two covariances, this three-factor model was found to be a good fit with acceptable indices; CFI = .91; GFI = .89; TLI = .88; NFI = .85; RMSEA = .075 with χ^2 = 185.42 (84), p < .001 (Hu & Bentler, 1998 as cited by Montoya & Edwards, 2021).

However, the factor loading for item 1 in dispositional cynicism was .21, which is considered below the acceptable cut-off of .3. But based on its exploratory factor analysis, content validity, and construct validity indices established in the earlier phases, we decided to retain this item for further research exploration, with larger sample size to reach a better decision about retaining or deleting this item.

CONCLUSION

The present investigation developed and validated an indigenous social cynicism scale for young adult Pakistani women who reported their relevant daily experiences concerning various social institutions. It resulted in a three-factor scale highlighting the institutional, experiential, and dispositional aspects of social cynicism in our society. Other than making a valuable addition to the indigenous scale development scholarship as well as generating empirical

evidence of social cynicism in women, this scale also shed light on the gender-based issues and experiences that can be used to sensitize the public in general and make this society a better and safe place for women. Furthermore, this study also brought into the limelight that the gendered experience of women within a patriarchal culture cultivates SC through various agents of socialization that, as per our knowledge, have not been reported in any indigenous setting.

Apart from academicians and professionals working in social, clinical, counseling, and organizational settings, these findings can also facilitate policymakers serving in the public and private sectors to bring structural changes to society. Both government and non-governmental organizations can work together to develop and implement gender-based education and awareness programs to address social cynicism emerging from our social institutions.

Limitations and Suggestions

Though SCWS showed promising valid and reliable indices, certain limitations still need to be acknowledged for better conceptualization and planning of future research endeavors focused on the construct of social cynicism. Due to limited time and logistic disadvantages, a non-probability sampling technique was employed to recruit online samples of university-educated, young adult women, based mainly in and around the city of Lahore, who were also well-versed in the English language and filling out online questionnaires. Moreover, due to the social-cultural sensitivity, questions about religion were excluded in the present study that can be investigated in the future. The reliability analysis for phases II and III suggested good and acceptable indices, except for the experiential cynicism. Similarly, CFA showed an item with low factor loading during phase III of the current study. Recruitment of a large and diverse sample can address both issues in future studies.

Involving an in-person assessment of SCSW across a diverse age range of adult women, and even by translating and validating an Urdu version of it, the external validity of the current SCSW scale can be further improved. Moreover, by conducting its convergent and discriminant validity, the psychometric properties of SCSW can be enhanced in the future. Lastly, taking the lead from this SCSW scale, the construction and validation of social cynicism in other vulnerable and marginalized groups and communities of society can also be studied.

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Supplementary Data Availability Statement

The datasets generated during and/or analyzed during the current research are available at the fig share repository [https://figshare.com/account/home#/projects/129953].

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Active Engagement and Health Status of Older Malaysians: Evidence from a Household Survey

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ABSTRACT

Malaysia is undergoing rapid age structural shift to becoming an ageing nation by 2030 when 14% of its population will be aged 60 and over. Population ageing strains the healthcare system due to the rapid rise in non-communicable diseases and poses enormous challenges in providing social protection. Health promotion can ameliorate these twin problems through the active engagement of older adults in the labour force and social activities. This paper used data from the 2014 Malaysian Population and Family Survey (MPFS) to study the factors associated with active engagement in social and economic activities, and the health status of older adults. The survey covered a nationally representative sample of 4,039 older Malaysians aged 60 and over. SPSS was used to perform bivariate and multivariate analyses. About one-quarter of older Malaysians are still working, and three-quarters participate in religious activities, but a small proportion is involved in NGO/community activities and regular exercise. Males are more active than females in all these activities. The majority perceived themselves to be in good or moderately good health. Active participation in social, economic, religious, and physical activities was positively associated with health. Given the relatively low level of labour force participation and social activities among older Malaysians, there is a need

for intervention strategies to encourage and facilitate the active engagement of older adults to reduce their health problems and increase self-reliance for a better quality of life.

Keywords: Active engagement, ageing, exercise, religious and community activities, self-rated health

INTRODUCTION

Malaysia is turning into an ageing nation by 2030 when 14% of its population will be aged 60 and over. In 2020, the older population aged 60 and older made up 10.7% of the Malaysian population and was projected to increase to 23% by 2050 (Department of Statistics Malaysia [DOSM], 2016; Department of Economic and Social Affairs of United Nations, 2019). The life expectancy at age 60 is 18.4 years for males and 21.2 years for females (DOSM, 2020). The ageing population is accompanied by a rise in non-communicable diseases (NCDs). The mounting burden of NCDs alongside a fast-growing older population strains the healthcare infrastructure and social protection systems (Mohd Tobi et al., 2017). The Pension (for civil servants) and Employee Provident Fund (EPF) cover less than two-thirds of adults aged 60 and older. These schemes are inadequate to meet older adults' financial needs, especially considering the erosion of family support due to the shrinking family size (Mohd Jaafar et al., 2021). Most older Malaysians depend on their adult children for care and support (Evans et al., 2018). However, as the fertility rate has declined to less than two children per woman since 2013, from more

than four children in the previous generations (DOSM, 2021), older adults will have fewer children to depend on. The inadequate financial resources force some older adults to continue working to support themselves and their dependents. All stakeholders need to address the challenges population ageing brings to foster healthy ageing and improve the lives of older adults and their families (World Health Organization, 2020).

The Malaysian Government adopted the National Policy for the Elderly in 1995 and revised it as the National Policy for Older Persons in 2011. The Tenth Malaysia Plan (2011–2015) emphasised ensuring the health and well-being of older adults to age with dignity and lead independent and fulfilling lives as integral members of society. Furthermore, to improve employment opportunities for older adults, the Government provided a 100% tax rebate on costs to retain older adults (*Tenth Malaysia Plan*, 2010).

Numerous studies on population ageing have shown that older adults' active engagement in work, exercise, and social and religious activities is strongly associated with good health (Celidoni et al., 2017; Dave et al., 2008; Hammerman-Rozenberg et al., 2005; Hein et al., 1992; Shiba et al., 2017; Sun & Lyu, 2020). Social activities are also crucial for older adults' health and overall well-being. Social engagement and productive activity are significantly associated with self-rated health (Zhang & Wu, 2017). Participation in social activities, such as voluntary work and cultural activities, represents a significant part of older adults' social contacts and

social connectedness (Toepoel, 2013). These social activities and regular contact with friends can lead to greater life satisfaction and well-being among older adults (Amati et al., 2018; Dupuis & Smale, 1995). Older adults' participation in religious activities is associated with longer life and better physical and mental health (Koenig, 2012; Lucchetti et al., 2011; Saffari et al., 2013; Zimmer et al., 2016). In addition, studies have shown that being active is positively associated with greater happiness and well-being (Menec, 2003; Winstead et al., 2014) and better cognitive functioning among older adults (Bourassa et al., 2017).

Regular physical activity, especially exercise, keeps the body healthy and energetic. In addition, higher physical activity levels can slow down the age-related decline in physical ability, especially among those aged 55 and above (Landi et al., 2018). Regular physical exercise contributes to better cognitive functioning and mental well-being, reducing stress, anxiety, and depression and improving sleep quality (Elmagd, 2016; Kadariya et al., 2019).

The Activity Theory of Aging posits that older adults who stay active and maintain social interactions are ageing more successfully than their inactive counterparts (Bengtson & Putney, 2009; Schulz, 2006). Active engagement enhances the quality of life and delays the ageing process. Furthermore, social relationships, consisting of family and friendship ties, promote social activities and provide access to social support (Cornwell et al., 2009). All these, in turn, positively impact health outcomes

(Uchino, 2004; Uchino et al., 1999) and lower the risk for morbidity and mortality (Holt-Lunstad, 2018; Reblin & Uchino, 2008). This theory provides a conceptual framework for examining older adults active and healthy ageing factors.

Using a national survey, the present study examines the association between active engagement (in terms of religious, social, economic, and physical activities), health status, and background characteristics among older Malaysians. The association between active engagement and health may be bi-directional. Given that the data used in this study is cross-sectional, the findings do not imply any causality of the variables. The study seeks to reconfirm past findings of higher activity levels among older males than older females (Boerma et al., 2016; Carmel, 2019; Verbrugge, 1985, 1989; Waldron, 1983). It also tested the hypothesis that active ageing is positively associated with health, as evidenced in the literature reviewed above.

METHODS

The data for this study was drawn from the 2014 Malaysian Population and Family Survey (MPFS) conducted by the National Population and Family Development Board, Malaysia. The DOSM assisted in sample selection based on enumeration blocks (EBs) for the 2010 population and housing census. The sample was selected using a two-stage stratified sampling design. In the first stage, 2,889 EBs were selected, and 23,112 living quarters (LQs) were selected in the second stage for the survey.

Trained interviewers conducted personal interviews between September 1, 2014, to January 31, 2015. The published survey report provides a detailed description of the methodology (National Population and Family Development Board, 2016).

This study utilised data from 4,039 older adults aged 60 years and above in 2014 MPFS. The survey elicited information on socio-demographic characteristics, migration, marriage, work, income sources, financial management, and health status of older adults. The variables in this study included socio-demographic characteristics and factors related to active and healthy ageing in Malaysia. Active engagement is represented by current work status and engagement in religious activities, *Rukun Tetangga* (neighbourhood association or organisation), non-governmental organisation (NGO)/community activities, and exercise.

Current work status is a dichotomous variable indicating whether one is working or otherwise. Measurements of engagement in religious activities, *Rukun Tetangga,* NGO / community activities and exercise were coded into four levels of frequency: 1=Daily; 2=Weekly; 3=Monthly or less often; and 4=Never. These variables were presented in percentage distribution in Figure 1.

The measurements of engagement were also recoded into dichotomous variables, 0=Never and 1=Otherwise (including daily, weekly, monthly, or less often), and analysed as a proportion (percentage engaged in specific activity in cross-tabulations; Table 4) and binary logistic regression (Table 5).

This study examined socio-demographic factors associated with participation in these activities, as opposed to never participating.

In addition, self-rated health was used to measure the health status of older adults. As this study tested the hypothesis that active ageing is positively associated with health, the self-rated health variable was coded into three levels: 1=Good; 2=Fair; and 3=Poor, to differentiate between the different levels of self-rated health (Tables 6 and 7). The socio-demographic variables in the analysis included gender, age, marital status, ethnicity, place of residence, and educational level. Measurements of engagement in religious activities, *Rukun Tetangga*, NGO/ community activities, and exercise were also included. Engagement measurements in four frequency levels were used to examine the effects of different frequency levels on self-rated health.

Self-rated health is a valid measure of health status and measures health in different socio-cultural research settings (Jylha, 2009; Teh et al., 2014). This single-item measure is inherently a multidimensional concept capturing dimensions of physical, functional, coping, and well-being, and can be a strong predictor of mortality (Cheng et al., 2002; DeSalvo et al., 2006; Jylha, 2009; Lee & Shinkai, 2003; Månsson & Råstam, 2001; Nishi et al., 2012; Simon et al., 2005; Su & Ferraro, 1997; Zajacova & Dowd, 2011).

All analyses were performed using SPSS version 26. Cross-tabulations with Chi-square tests were run to assess the significance of the bivariate association between the dependent variables and

independent variables. In addition, binary logistic and ordinal regressions were used to examine the factors associated with older adults active engagement and health status in the multivariate context. The cut-off level for statistical significance was set at $\alpha = .05$.

RESULTS

Respondents' Profiles

Table 1 shows the socio-demographic profiles of respondents by selected variables. Nearly two-thirds of the respondents were in their 60's, and most were still fit to continue working. About two-thirds of the older adults were married, and the rest were mainly widowed (28.4%). Due to the small proportion of never married, separated, and divorced, the marital status variable was regrouped into currently married and currently not married. The ethnic distribution corresponded closely with that of the population census. Slightly more than half of the respondents resided in urban areas. Nearly half of the older adults attained

Table 1
Respondents' profiles by gender

Variables	Both sexes		Male		Female	
	n	%	n	%	n	%
Total	4,039	100.0	1,825	100.0	2,214	100.0
Age group (years)						
60–64	1,575	39.0	687	37.6	888	40.1
65–69	1,121	27.8	536	29.4	585	26.4
70–74	703	17.4	331	18.1	372	16.8
75+	640	15.8	271	14.8	369	16.7
Marital status						
Never married	100	2.5	36	2.0	64	2.9
Married	2,713	67.2	1,616	88.5	1,097	49.5
Widowed	1,146	28.4	161	8.8	985	44.5
Divorced	65	1.6	9	0.5	56	2.5
Separated	15	0.4	3	0.2	12	0.5
Ethnic group						
Malay	2,614	64.7	1,154	63.2	1,460	65.9
Other Bumiputera	411	10.2	180	9.9	231	10.4
Chinese	732	18.1	373	20.4	359	16.2
Indian	282	7.0	118	6.5	164	7.4
Place of residence						
Urban	2,214	54.8	1,026	56.2	1,188	53.7
Rural	1,825	45.2	799	43.8	1,026	46.3
Educational level						
No formal education	829	20.5	157	8.6	672	30.4
Primary	1,995	49.4	938	51.4	1,057	47.7
Lower secondary	517	12.8	306	16.8	211	9.5
Upper secondary and above	698	17.3	424	23.2	274	12.4

primary education, and only about 17% had at least upper secondary education. A higher proportion of males attained at least upper secondary education than females (23.2% versus 12.4%).

Current Work Status

Table 2 shows the proportion of older adults currently working by selected variables. Overall, 23% of the older adults aged 60 and over were still working—13.7% among females and 34.0% among males.

Table 2

Percentage of older adults currently working by selected variables

Variables	Both sexes	Male	Female
Total	22.9	34.0	13.7
Age group (years)			
60–64	30.2	44.3	19.3
65–69	23.6	33.2	14.7
70–74	17.4	28.1	7.8
75+	10.0	17.0	4.9
Marital status			
Currently married	26.5	34.4	14.8
Currently not married	15.6	31.1	12.7
Ethnic group			
Malay	21.7	33.4	12.3
Other Bumiputera	33.8	42.8	26.8
Chinese	25.3	35.9	14.2
Indian	12.4	20.3	6.7
Place of residence			
Urban	18.1	25.6	11.6
Rural	28.7	44.8	16.2
Educational level			
No formal education	19.2	40.1	14.3
Primary	24.2	37.4	12.5
Lower secondary	28.8	34.6	20.4
Upper secondary and above	19.2	23.8	12.0

Among the males, the work rate declined from 44.3% among those aged 60-64 to 17.0% among those aged 75 and over. The corresponding figures for the females were 19.3% to 4.9%. Married individuals were likelier to continue working in old age than those not married. This differential may be explained by the older age structure of those not currently married (mainly widowed), as confirmed by the binary logistic regression results (Table 3). Across the ethnic groups, other Bumiputera males and females were more likely to continue working than others, while older Indians were least likely to work. Older adults in rural areas were more likely to be in the labour force than their urban counterparts, and the differential was more pronounced among males. The proportion currently working was inversely related to education for the males, but the pattern was somewhat erratic for the females. Older females with lower secondary education had a higher work rate than those from other educational categories.

The binary logistic regression (Table 3) shows that older females were 75% less likely to work than older males, even after all other variables were controlled in the model. The odds of working decreased sharply with age. Older adults who were not married were less likely to work than those who were married, but the relationship became insignificant after controlling other variables. This finding could be explained by the fact that the former (mainly the widowed) was older than the latter. Compared to the Malays,

Table 3
Binary logistic regression of current employment

Variables	Unadj. OR	95% CI	Adj. OR	95% CI
Gender	***		***	
Male (ref)	1		1	
Female	0.309***	(0.264, 0.360)	0.251***	(0.208, 0.302)
Age group (years)	***		***	
60–64 (ref)	1		1	
65–69	0.713***	(0.599, 0.850)	0.614***	(0.508, 0.741)
70–74	0.486***	(0.389, 0.608)	0.375***	(0.294, 0.477)
75+	0.257***	(0.195, 0.340)	0.192***	(0.142, 0.261)
Marital status	***			
Currently married (ref)	1		1	
Currently not married	0.514***	(0.433, 0.610)	1.055	(0.861, 1.291)
Ethnic group	***		***	
Malay (ref)	1		1	
Other Bumiputera	1.849***	(1.477, 2.315)	1.696***	(1.319, 2.182)
Chinese	1.224*	(1.011, 1.481)	1.537***	(1.242, 1.903)
Indian	0.513***	(0.356, 0.739)	0.626*	(0.424, 0.923)
Place of residence	***		***	
Urban (ref)	1		1	
Rural	1.821***	(1.570, 2.112)	1.835***	(1.541, 2.184)
Educational level	***		***	
No formal education (ref)	1		1	
Primary	1.346**	(1.101, 1.646)	0.828	(0.654, 1.048)
Lower secondary	1.706***	(1.319, 2.206)	0.835	(0.614, 1.136)
Upper secondary and above	1.001	(0.775, 1.293)	0.490***	(0.359, 0.670)
Constant	-		0.768	

Note. OR: odds ratio; CI: confidence interval; Wald test significance – ***$p < .001$, **$p < .01$, *$p < .05$

other Bumiputera and the Chinese were more likely to work, while the Indians were less likely to work. After adjusting for other variables, older adults in rural areas remained more likely to work than those in urban areas. However, the educational effect on the labour force participation of older adults changed from positive to negative when other variables in the model were accounted for.

Engagement in Social Activities and Exercise

Older adults were more likely to engage in religious activities than other activities. The males were generally more active than the females in religious and social activities and exercise. About 61% of the males and 41% of the females were involved in daily and weekly religious activities. Few older adults, especially women, were involved in

Rukun Tetangga (neighbourhood association or organisation) and NGO/community activities. About one in five older males and one in ten older females participated in NGO/community activities. As many as 84% of the older females and 71% of the older males reported not exercising (Figure 1).

Engagement in religious, social, and physical activities decreased sharply with age, especially among females (Table 4). The currently married older adults were more likely to be involved in these activities than their unmarried counterparts, partly because the latter (mainly widowed) was older than the former. Across the ethnic groups, a higher proportion of Malay men were involved in religious activities, while Indian women reported a

slightly higher percentage of involvement in religious activities than others. Malay men and women were relatively less likely to exercise, while a smaller proportion of the Chinese were involved in community activities and *Rukun Tetangga* than other ethnic groups. A much higher proportion of urban men and women were engaged in exercise than their rural counterparts. However, the reverse was true for the engagement in religious, *Rukun Tetangga*, and NGO/community activities. The proportion of older men and women engaged in physical and NGO/community activities increased with educational level. However, a positive association between education and engagement in religious activities was found only among older women. Binary logistic regression

	Male	Female	Male	Female	Male	Female	Male	Female
	Mosque/Religious body		Exercise		Rukun Tetangga		NGO/Community	
Daily	28.1%	10.6%	10.6%	5.5%	2.5%	1.1%	1.4%	0.7%
Weekly	32.5%	30.2%	9.2%	4.6%	5.6%	4.6%	3.0%	1.6%
Monthly or less often	21.5%	28.4%	9.7%	5.7%	25.2%	24.3%	14.2%	9.8%
Never	17.9%	30.7%	70.5%	84.2%	66.7%	69.9%	81.4%	87.9%
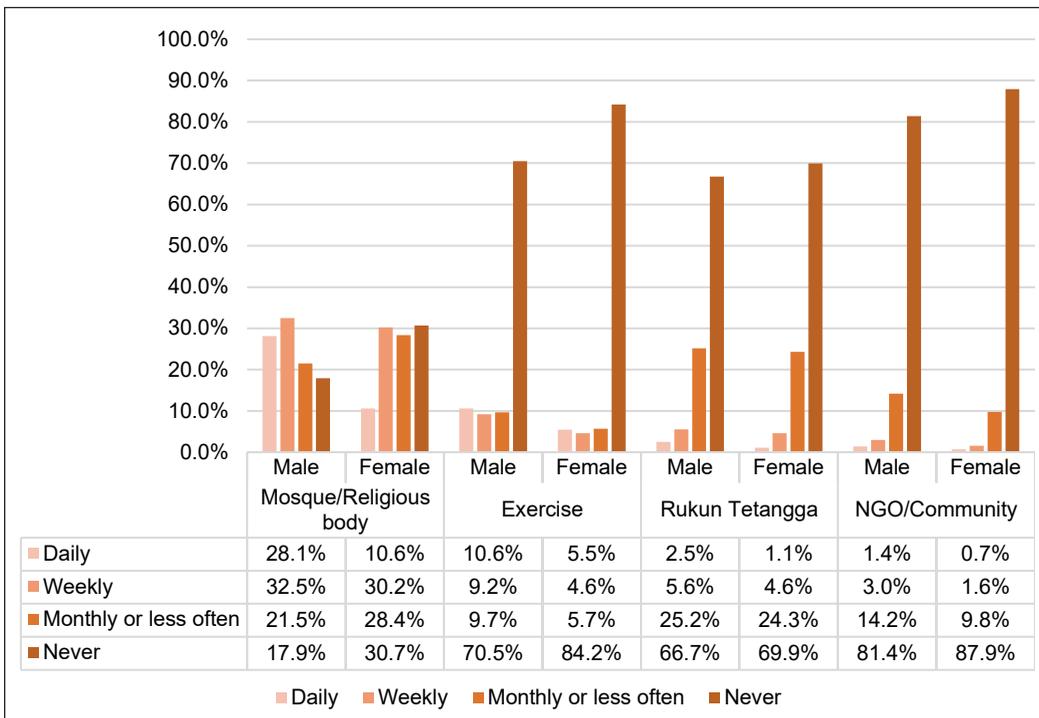
Figure 1. Engagement in religious, social, and physical activities by gender

Table 4

Percentage of older adults engaged in religious, social, and physical activities by selected variables

Variables	Mosque/religious body activities			Exercise			Rukun Tetangga			NGO/community activities		
	Overall	Male	Female	Overall	Male	Female	Overall	Male	Female	Overall	Male	Female
Total	75.0	82.1	69.3	22.0	29.5	15.8	31.5	33.3	30.1	15.1	18.6	12.1
Age group (years)												
60–64	78.5	83.9	74.3	24.9	34.2	17.7	35.4	35.9	35.0	17.9	22.5	14.3
65–69	77.3	84.3	70.9	24.0	31.3	17.4	32.4	35.2	29.8	17.1	20.6	13.9
70–74	70.8	77.6	64.8	19.2	26.1	13.2	27.1	27.3	26.9	10.8	13.9	8.1
75+	67.3	78.5	59.1	14.1	18.1	11.1	25.4	30.0	22.0	9.1	10.7	7.9
Marital status												
Currently married	78.6	82.4	73.0	24.9	30.2	17.1	32.6	33.4	31.6	16.8	19.3	13.3
Currently not married	67.8	79.4	65.6	15.9	23.4	14.4	29.3	32.5	28.6	11.4	13.9	10.9
Ethnic group												
Malay	79.3	89.7	71.0	16.6	23.8	10.9	36.2	37.3	35.4	16.4	20.4	13.3
Other Bumiputera	73.2	81.7	66.5	26.3	34.4	20.0	33.4	41.1	27.4	16.1	20.6	12.6
Chinese	61.1	60.3	61.9	34.5	38.3	30.5	16.9	18.6	15.1	9.1	10.5	7.6
Indian	74.7	76.9	73.2	32.7	49.6	20.7	22.8	28.2	18.9	16.1	24.1	10.4
Place of residence												
Urban	74.0	80.3	68.6	26.8	35.5	19.4	27.1	29.9	24.7	14.6	18.6	11.2
Rural	76.3	84.3	70.0	16.0	21.8	11.5	36.9	37.6	36.3	15.5	18.7	13.1
Educational level												
No formal education	65.1	75.0	62.8	13.6	20.6	11.9	28.3	39.4	25.8	10.2	14.2	9.2
Primary	75.8	83.3	69.1	17.3	21.7	13.4	33.3	33.9	32.7	12.9	15.1	11.0
Lower secondary	78.8	82.3	73.8	27.1	33.3	18.1	30.4	31.0	29.5	17.1	18.3	15.2
Upper secondary and above	81.9	81.8	82.1	41.3	46.9	32.5	31.1	31.1	31.0	25.4	28.3	20.8

Table 5
Binary logistic regression of engagement in religious, social and physical activities

Variables	Mosque/religious body activities		Exercise		Rukun Tetangga		NGO/community activities	
	Adj. OR	95% CI	Adj. OR	95% CI	Adj. OR	95% CI	Adj. OR	95% CI
Gender	***		***				***	
Male (ref)	1		1		1		1	
Female	0.556***	(0.467, 0.661)	0.518***	(0.433, 0.619)	0.858	(0.734, 1.002)	0.680***	(0.556, 0.830)
Age group (years)	**		***		***		***	
60–64 (ref)	1		1		1		1	
65–69	0.984	(0.813, 1.191)	0.972	(0.804, 1.175)	0.896	(0.758, 1.059)	1.032	(0.838, 1.270)
70–74	0.772*	(0.622, 0.957)	0.786*	(0.620, 0.997)	0.702***	(0.572, 0.863)	0.676**	(0.509, 0.896)
75+	0.713**	(0.568, 0.895)	0.593***	(0.450, 0.781)	0.644***	(0.515, 0.806)	0.586**	(0.426, 0.806)
Marital status	*							
Currently married (ref)	1		1		1		1	
Currently not married	0.822*	(0.692, 0.977)	0.982	(0.803, 1.200)	0.981	(0.831, 1.158)	0.937	(0.748, 1.174)
Ethnic group	***		***		***		***	
Malay (ref)	1		1		1		1	
Other Bumiputera	0.799	(0.620, 1.030)	2.257***	(1.733, 2.941)	0.883	(0.701, 1.112)	1.072	(0.795, 1.447)
Chinese	0.361***	(0.298, 0.437)	2.235***	(1.831, 2.727)	0.390***	(0.314, 0.484)	0.463***	(0.348, 0.615)
Indian	0.748	(0.554, 1.008)	2.167***	(1.625, 2.889)	0.575***	(0.427, 0.774)	0.957	(0.674, 1.358)
Place of residence			**		***			
Urban (ref)	1		1		1		1	
Rural	1.047	(0.888, 1.234)	0.7557**	(0.632, 0.907)	1.351***	(1.165, 1.566)	1.213	(0.996, 1.476)
Educational level	***		***				***	
No formal education (ref)	1		1		1		1	
Primary	1.311**	(1.076, 1.598)	1.102	(0.853, 1.423)	1.165	(0.957, 1.418)	1.106	(0.833, 1.468)
Lower secondary	1.558**	(1.165, 2.084)	1.484*	(1.081, 2.037)	1.096	(0.834, 1.440)	1.493*	(1.041, 2.140)
Upper secondary and above	1.925***	(1.454, 2.550)	2.845***	(2.120, 3.819)	1.183	(0.912, 1.533)	2.608***	(1.871, 3.636)
Constant	4.846***		0.257***		0.549***		0.186***	

Note. OR: odds ratio; CI: confidence interval; ***p< .001, **p< .01, *p< .05

was performed to assess the significant socio-demographic factors associated with engagement in social activities. Females were significantly less likely than males to participate in religious activities, community activities, and exercise (Table 5). Exercise and social engagement decreased with age, and the differential across age groups was more pronounced in the community than in religious activities. Married older adults were more likely than those not currently married to participate in religious activities. The Chinese were significantly less likely than the Malays to engage in religious activities, *Rukun Tetangga*, and community activities. However, the non-Malays were more than two times more likely to exercise than the Malays. Older adults residing in rural areas were less likely to exercise but were more likely than those living in urban areas to be engaged in *Rukun Tetangga* activities. This finding suggests that rural residents tended to be more likely than urban residents to interact with their neighbours. The better-educated older adults were more likely than those with lower education to participate in religious and community activities and exercise.

Self-Rated Health

The self-rated health measured the health status of the older adults in this study. As expected, the proportion of good health decreased with age (Table 6). However, a slightly higher proportion of the males reported having good health than the females (37.8% versus 31.7%). In addition, a slightly higher proportion of married older adults perceived themselves to have good health than those not currently married. Among the ethnic groups, the Chinese were more likely to report good health, while the Other Bumiputera had a higher proportion of poor health than others. The older adults in the urban areas were more likely to report good health than those in the rural areas. Good health was positively associated with education and work status. Older adults who exercised daily were more likely to be in good health than those who did not (more than half versus 31.4%). Participation in activities organised by the mosque/

Table 6
Percentage distribution of self-rated health by selected variables

Variables	Good health	Fair health	Poor health	Total	Chi-square test statistic	p-value
Total	34.5	52.3	13.3	100.0		
Gender					16.137	p< .001
Male	37.8	49.8	12.5	100.0		
Female	31.7	54.3	13.9	100.0		
Age group (years)					29.744	p< .001
60–64	37.9	51.4	10.7	100.0		
65–69	34.1	52.4	13.4	100.0		
70–74	31.8	53.3	15.0	100.0		
75+	29.6	52.9	17.5	100.0		

Table 6 *(continue)*

Variables	Good health	Fair health	Poor health	Total	Chi-square test statistic	p-value
Marital status					12.383	.002
Currently married	36.2	51.4	12.5	100.0		
Currently not married	31.0	54.1	15.0	100.0		
Ethnic group					58.906	p< .001
Malay	32.2	55.4	12.4	100.0		
Other Bumiputera	32.0	48.8	19.3	100.0		
Chinese	44.4	44.1	11.5	100.0		
Indian	33.1	49.5	17.4	100.0		
Place of residence					13.482	.001
Urban	36.9	50.7	12.4	100.0		
Rural	31.5	54.2	14.3	100.0		
Educational level					104.194	p< .001
No formal education	29.1	52.5	18.4	100.0		
Primary	30.6	55.3	14.1	100.0		
Lower secondary	41.2	48.5	10.3	100.0		
Upper secondary and above	46.8	46.0	7.2	100.0		
Current work status					28.199	p< .001
No	32.6	52.9	14.5	100.0		
Yes	40.6	50.1	9.3	100.0		
Mosque/religious body activities					58.659	p< .001
Daily	37.4	53.4	9.3	100.0		
Weekly	35.9	52.6	11.4	100.0		
Monthly or less often	35.4	52.8	11.8	100.0		
Never	29.5	50.5	20.0	100.0		
Exercise					88.460	p< .001
Daily	51.8	39.0	9.3	100.0		
Weekly	45.6	47.8	6.7	100.0		
Monthly or less often	38.2	55.1	6.6	100.0		
Never	31.4	53.7	14.9	100.0		
Rukun Tetangga					43.518	p< .001
Daily	57.7	38.0	4.2	100.0		
Weekly	36.9	51.2	11.8	100.0		
Monthly or less often	36.4	54.6	9.0	100.0		
Never	33.0	51.9	15.1	100.0		
NGO/community activities					41.751	p< .001
Daily	51.2	41.5	7.3	100.0		
Weekly	56.7	40.0	3.3	100.0		
Monthly or less often	36.0	55.8	8.2	100.0		
Never	33.5	52.3	14.3	100.0		

religious body, *Rukun Tetangga*, and NGO/community were positively associated with health status.

Ordinal regression analysis vindicates that older adults were more likely to be in fair health than in good health but were less likely to be in poor health than in good health (Table 7). Females, older, and non-married individuals were less likely to have good health than males, younger, and married individuals. However, the other variables in the model accounted for some of the effects of gender, ageing, and marital status on health. The Chinese were more likely to report having good health than the Malays. Place of residence was not significantly associated with health once other variables were held constant. Those with lower secondary or higher education were more likely to report being in good health than their lower educated counterparts, and the differentials remain significant after adjusting other variables. Labour force participation, regular exercise (at least weekly) and engagement in religious, *Rukun Tetangga* and NGO/community activities were significantly associated with good health, even after adjusting other variables in the model. Notably, participation in religious activities was significantly associated with good health, regardless of the frequency of participation. In contrast, the frequency of involvement in other social activities showed a more erratic association with good health. For instance, it was only significant for those who participated weekly in NGO/community activities but not for those who participated daily or monthly and less often.

Table 7
Ordinal regression of self-rated health

Variables	Unadj. Proportional OR	95% CI	Adj. Proportional OR	95% CI
Fair health	-	-	3.570***	(2.709, 4.706)
Poor health	-	-	0.256***	(0.194, 0.338)
Gender				
Male (ref)	1		1	
Female	0.795***	(0.706, 0.896)	1.060	(0.916, 1.227)
Age group (years)				
60–64 (ref)	1		1	
65–69	0.831*	(0.717, 0.963)	0.873	(0.750, 1.016)
70–74	0.742***	(0.625, 0.881)	0.872	(0.728, 1.046)
75+	0.648***	(0.542, 0.773)	0.834	(0.685, 1.015)
Marital status				
Currently married (ref)	1		1	
Currently not married	0.797***	(0.702, 0.905)	1.013	(0.875, 1.172)
Ethnic group				
Malay (ref)	1		1	
Other Bumiputera	0.830	(0.679, 1.014)	0.855	(0.691, 1.059)
Chinese	1.518***	(1.296, 1.778)	1.466***	(1.228, 1.751)

Table 7 *(continue)*

Variables	Unadj. Proportional OR	95% CI	Adj. Proportional OR	95% CI
Indian	0.905	(0.714, 1.146)	0.842	(0.657, 1.080)
Place of residence				
Urban (ref)	1		1	
Rural	0.804***	(0.713, 0.905)	0.950	(0.830, 1.087)
Educational level				
No formal education (ref)	1		1	
Primary	1.177*	(1.006, 1.377)	1.024	(0.861, 1.217)
Lower secondary	1.820***	(1.472, 2.251)	1.407**	(1.108, 1.787)
Upper secondary and above	2.347***	(1.929, 2.856)	1.728***	(1.371, 2.179)
Current work status				
No (ref)	1		1	
Yes	1.457***	(1.265, 1.679)	1.419***	(1.216, 1.655)
Mosque/religious body activities				
Never (ref)	1		1	
Daily	1.685***	(1.403, 2.024)	1.445***	(1.179, 1.770)
Weekly	1.532***	(1.304, 1.798)	1.419***	(1.197, 1.683)
Monthly or less often	1.494***	(1.263, 1.769)	1.306**	(1.097, 1.556)
Exercise				
Never (ref)	1		1	
Daily	2.255***	(1.798, 2.828)	1.754***	(1.380, 2.229)
Weekly	1.912***	(1.503, 2.431)	1.373*	(1.063, 1.772)
Monthly or less often	1.504***	(1.198, 1.888)	1.209	(0.950, 1.537)
Rukun Tetangga				
Never (ref)	1		1	
Daily	2.924***	(1.828, 4.679)	2.263**	(1.355, 3.779)
Weekly	1.231	(0.936, 1.618)	0.989	(0.734, 1.331)
Monthly or less often	1.288***	(1.120, 1.480)	1.249**	(1.069, 1.459)
NGO/community activities				
Never (ref)	1		1	
Daily	2.110*	(1.159, 3.842)	0.975	(0.504, 1.887)
Weekly	2.750***	(1.813, 4.170)	1.956**	(1.238, 3.091)
Monthly or less often	1.249*	(1.039, 1.502)	0.939	(0.765, 1.153)

Note. OR: odds ratio; CI: confidence interval; Wald test significance – ***$p < .001$, **$p < .01$, *$p < .05$

DISCUSSION

Self-rated health is a subjective opinion about one's general health status. However, it is a valid measure of health status and is often used as a health indicator in research on older adults in different socio-cultural settings (Cislaghi & Cislaghi, 2019; Jylha, 2009; Lin et al., 2020; Minami et al., 2015). Despite its subjective nature, this single-item measure is a good correlate of mortality

(DeSalvo et al., 2006; Fan & He, 2022; Lorem et al., 2020; Wuorela et al., 2020) and active engagement (Kaleta et al., 2008; Makizako et al., 2021; Sewdas et al., 2018). In addition, this self-perceived measure is a multidimensional concept that captures dimensions of physical, functional, coping, and well-being (Cheng et al., 2002; Cislaghi & Cislaghi, 2019; Lee & Shinkai, 2003; Lorem et al., 2020; Nishi et al., 2012; Simon et al., 2005; Zajacova & Dowd, 2011).

This study shows that active engagement in work, involvement in religious and social activities such as participation in *Rukun Tetangga* and NGO/community activities, and physical activities are positively associated with older adults' perceived health. The positive correlation between older adults' active engagement and health status corroborates with findings from several studies (Celidoni et al., 2017; Dave et al., 2008; Kaleta et al., 2008; Minami et al., 2015; Shiba et al., 2017). For example, in their cross-sectional analysis based on the sample of older Japanese persons, Minami et al. (2015) showed that working beyond 65 years was associated with better self-rated health and mental health. The longitudinal analysis of the same study also revealed that active engagement in work is protective against functional and mental health deterioration. It is likely that through employment, older adults have access to more social relationships in society and can remain independent longer for their upkeep. Being an active and contributing member of society in old age bodes well for an older adult's overall well-being and quality of life (Min & Cho, 2018).

Findings show differentials in older adults' work status by place of residence and educational level. These differentials can be attributed partly to the difference in employment status. In Malaysia, self-employment and part-time work are relatively more common among older workers (World Bank, 2020). Moreover, most older adults from rural areas and with lower educational levels are engaged in the traditional or agriculture sector. Workers from this sector are usually self-employed and are not subject to mandatory retirement. They can continue to work for as long as they are able and willing to do so. It has been reported that the agriculture sector in Malaysia employs a high share of workers aged between 55 and 64 years, and the workers are also more likely to work in rural areas (World Bank, 2020).

The labour force participation rate (LFPR) among older Malaysians is lower than in its neighbouring countries. The International Labour Organization (ILO, 2020) database shows that in 2019, the LFPR of older Malaysian males and females aged 65 and over was 39.9% and 12.0%, respectively, compared to 43.6% and 23.4% for Southeast Asia as a whole. The decreasing share in agricultural employment can partly explain the low LFPR among older Malaysians and the shift from informal to formal sector employment because the latter is subject to mandatory retirement age. Given the health benefits of work for older adults, efforts should be made to encourage and facilitate them to continue working past retirement age if they are healthy and willing to do so. Malaysia's

retirement age, at 60 years, is lower than that of many developed countries. With rising life expectancy, a male and female retiree at age 60 can expect to live 18.4 years and 21.2 years, respectively (DOSM, 2020). Therefore, the Government should consider policy options such as raising the retirement age, re-employment, and flexible wage and work arrangements to increase the LFPR of older adults. Besides, increasing the number of older workers would help to ameliorate the labour shortage and allow those with inadequate retirement funds to support themselves and their families. Also, there is evidence that the labour force participation of older adults can mitigate the negative impacts of population ageing on the economy (Bloom et al., 2010; Lai & Yip, 2022; Vogel et al., 2017). It can also create opportunities for a silver economy that serves the needs and demands of older adults (World Bank, 2020).

In the analysis of current employment, it is interesting to note that after controlling for other variables, the effects of education level have shifted from positive to negative. The shift in the direction is due to the inclusion of the age and gender variables in the logistic regression. Work participation rate and educational attainment are inversely related to age; hence, controlling for age has explained away the educational effect on employment. Furthermore, as shown by the characteristics of older adults in this study, older females with lower labour force participation than older males are more likely to have no formal education than older males. Hence, controlling for gender would also reduce the effect of education. Age and gender have also been found to have a moderating effect in other studies (Lisha et al., 2011; Murphy et al., 2007; Noone et al., 2018).

In reviewing past studies, Taylor (2014) concluded that few older adults achieved the level of physical exercise that accompanies health improvement. The present analysis shows that most older Malaysians do not exercise, which is consistent with the 2019 National Health and Morbidity Survey (NHMS; Institute for Public Health, 2020). The NHMS report states that a sedentary lifestyle is a leading cause of chronic diseases. Hence, policymakers must formulate evidence-based guidelines to increase physical activity for older adults, provide support mechanisms to encourage habitual physical activity behaviours, and launch educational campaigns to promote physical activity levels among older Malaysians.

Findings show that older Malaysians are more likely to engage in religious activities than other social activities. Furthermore, engagement in religious activities, no matter how frequent, is associated with good self-rated health. It corroborates several studies which support the association between religiousness and health (Koenig, 2012; Saffari et al., 2013; Zimmer et al., 2016). Previous studies have also indicated that, as religious attendance is associated with higher levels of social integration and social support, religiousness can moderate physical health conditions and depression through social support and coping mechanisms

(Holt-Lunstad, 2018; Lucchetti et al., 2011; Rote et al., 2013). Within the Malaysian context, it has also been reported that religiosity is positively associated with older Malaysians' quality of life (M. M. Tan et al., 2022). Hence, promoting more religious activities for older Malaysians would benefit their overall well-being.

Although this study indicates that participation in *Rukun Tetangga* and NGO/community services are associated with good self-rated health among older Malaysians, the participation rates are rather low. Few older Malaysians are engaged in these activities compared to religious ones, especially among older females. Therefore, more can be done to encourage more social activities and community participation tailored specifically for older Malaysians. A few community centres that have successfully provided a platform for inter-generational community participation can serve as models for other communities to replicate (P. C. Tan & Tey, 2005). The Government can promote community participation by recognising the best neighbourhood with awards and financial assistance.

CONCLUSION

In keeping with the theory and concepts of active ageing, this study shows that being active benefits health. However, because of the low participation rate in social and economic activities among older adults, various innovative programmes should be designed to encourage and facilitate active ageing. Furthermore, with the erosion of family support in physical and health care in old age, Malaysians must maintain an active lifestyle to remain independent and enjoy a good quality of life in the later stages. Given the close association between active engagement and health status, all stakeholders must promote active and healthy ageing to overcome the twin burden of healthcare and social protection of a rapidly ageing population. Promoting active and healthy ageing is in line with the goals of the National Policy for Older Persons to create opportunities for them to live independently and to enhance the potential of older adults so that they remain active and productive in national development.

Unlike longitudinal studies, the cross-sectional data used in this analysis cannot establish the causal effects of active engagement on health because the causation can run both ways. On the one hand, active engagement can lead to better health. However, on the other hand, poor health may deter older adults from participating in social and economic activities.

The present study is based on the data from the 2014 MPFS. Given the changes in the social and economic conditions over the last decade and the hardships caused by the COVID-19 pandemic, the findings from this analysis may not reflect the contemporary situation. An update of this analysis will be conducted to shed new insights into the older adults' active engagement and health status in Malaysia once the data from the 2020 population and housing census is made available.

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Factors Associated with Contraceptive Use in Malaysia and Pakistan

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ABSTRACT

Most developing countries launched the national family planning program in the 1960s/70s. However, some countries' contraceptive prevalence rate (CPR) remains low or stagnated. Despite having a similar religious belief, the level of contraceptive use differed between Malaysia and Pakistan. This study examines the factors associated with contraceptive use in Malaysia and Pakistan. This study used secondary data from the 2014 Malaysian Population and Family Survey and the 2017–2018 Pakistan Demographic and Health Survey. A total of 5,175 Malaysian and 14,502 Pakistani currently married women aged 15–49 were included in this study. The dependent variable is current contraceptive use. The independent variables include women's age, age at first marriage, place of residence, women's educational level, employment status, and the number of living children. Crosstabulations show that urban, better-educated, and working women in Pakistan reported higher modern CPR than their rural, lesser-educated, and non-working counterparts; however, the opposite was observed in Malaysia. Multinomial logistic regression analysis reveals that rural women were less likely to practice modern and traditional methods than non-use in Pakistan. In Pakistan, the odds of practising modern and traditional methods than non-use were higher among women who attained at least primary education, while working women were more likely to practice modern contraceptive methods than non-use and traditional methods. However, women's education and employment factors were insignificant in the multivariate context of the case of Malaysia. Enhancing women's socio-economic status and reaching out to rural, uneducated, and jobless women are essential to improving contraceptive use, especially in Pakistan.

Keywords: Contraceptive use, Malaysia, Pakistan, socio-economic factors, women

INTRODUCTION

Most developing countries launched the family planning program (FPP) in the 1960s/70s to control the rapid population growth and reduce the fertility rate. High fertility could bring adverse effects not only on maternal and child health but also on the economic growth of a country. According to Kantorová et al. (2020), among 1.11 billion women of reproductive age who needed family planning (FP), 270 million had an unmet need for modern contraception in 2019. These women wished to avoid pregnancy but refused to practice modern contraception due to the lack of access to contraceptives, poverty, social structure, and religious beliefs. Despite ongoing efforts to promote FPP, some developing countries' contraceptive prevalence rate (CPR) remains low or stagnated.

In Malaysia, the FP movement was initiated in 1938 by the government obstetrician (Tey, 2007a). The first Family Planning Association (FPA) was established in Kuala Lumpur in 1953. Before the launch of the national FP policy, FP services were provided by FPA in each of the states in Malaysia. Following the National Family Planning Program (NFPP) launch in 1966, the National Family Planning Board (NFPB) was set up to facilitate the implementation in phases. Since then, FP has been emphasised in the First Malaysia Plan and subsequent national development plans. Consequently, CPR in Malaysia increased drastically from 8.7% in 1967 to 33% in 1974 and to 51.4% in 1984 before reaching 52.2% in 2014 (World Bank, 2021). Nevertheless, CPR has stagnated at the 50% level for the past three decades, mainly due to the major shift in policy interest and expansion from FP to family development and reproductive health during the midterm review of the Fourth Malaysia Plan (1981-85) in 1984 (Tey, 2007a). Owing to the de-emphasis of FP in the new policy, a large proportion of contraceptive users (34% since 2004) opted for the less effective traditional methods.

In Pakistan, the Family Planning Association of Pakistan (FPAP) set off the FP movement in 1953 (Rukanuddin & Hardee-Cleaveland, 1992). Following this, FP services were introduced in the First Five-Year Plan (1955–1959) through the FPAP and other voluntary associations. High fertility and rapid population growth issues began to attract the attention of policymakers in formulating the Second Five-Year Plan (1960–1964). The Pakistani government has allocated adequate funds for FPP and, at the same time, received technical assistance from international organisations - Ford Foundation and the Population Council (Robinson, 2007). However, compared to other South Asian countries, the CPR increase in Pakistan was modest, from 5.5% in 1969 to 9.1% in 1985, and hovered at around 20% in the 1990s and 2000s before reaching 34% in 2019 (World Bank, 2021). The relatively low CPR in Pakistan can be attributed to the strong anti-FP sentiment among the conservative Islamic population. Besides, inappropriate medium to promote FP, failure to evaluate the program regularly, and exclusion from the participation of the non-governmental organisation in the program led to a slow

increase in CPR (Robinson, 2007). In addition, a sizeable proportion of Pakistani women were illiterate - 14.8% (World Bank, 2021), and the program has failed to deliver FP information to these women through suitable channels, causing a gradual increase in the prevalence of traditional contraceptive use. Hence, despite Pakistan being one of the first Asian nations to adopt FP policies in the 1950s, the endeavours to change attitudes towards contraception, raise contraceptive prevalence, and ultimately lower the fertility level are hardly noticeable.

Islam is the official religion in Malaysia and Pakistan. Despite the same religious belief, Malaysia and Pakistan are diverse nations in terms of ethnicity and development. Malaysia is a multi-ethnic country comprising three main ethnic groups: Malay, Chinese, and Indian (Department of Statistics Malaysia, 2020). On the other hand, Pakistan's population diversity is largely constrained by the boundaries of its four provinces: Punjabi, Balochistan, Sindh, and Khyber Pakhtunkhwa. The three main ethnic groups in Pakistan are Punjabi, Pashtun, and Sindhi, with numerous minority groups (Pakistan Bureau of Statistics, 2017). Malaysia is more developed than Pakistan despite gaining independence a decade later, as Malaysia did not experience the same political challenges as Pakistan.

Past studies on the determinants of contraceptive use were mainly regional-specific or country-specific. This study presents a comparative analysis by examining the factors associated with contraceptive use in Malaysia and Pakistan—the two developing countries sharing a similar religious belief and yet entirely different levels of contraceptive use. In line with Sustainable Development Goal 3 (SDG3), to achieve good health and well-being by 2030, it is hoped that this study could shed some light on the characteristics of women who experienced barriers to the utilisation of FP services, which will be useful in designing effective programs to enhance the uptake of FP.

LITERATURE REVIEW

Past studies revealed that contraceptive use was positively associated with women's social status, particularly their educational attainment (Ajmal et al., 2018; Islam et al., 2016; Majumder & Ram, 2015; Mandiwa et al., 2018; Osmani et al., 2015; Palamuleni, 2013; Rasooly et al., 2015; N. Singh & Shukla, 2017) and employment status (Hossain et al., 2018; Majumder & Ram, 2015; Mandiwa et al., 2018; Palamuleni, 2013; L. M. Singh et al., 2020). Education provides a platform for women to interact, exchanging the latest information on FP matters, resulting in higher contraceptive use among the better-educated (Nyauchi & Omedi, 2014). Braghi et al. (2013) and Almeen and Al-Ayoubi (2016) found that education could enhance women's knowledge and skills in contraceptive use and, at the same time, empower them to be the main contraceptive use decision-maker. Education also equips women with the latest knowledge and skills to meet the labour market requirements. Women with higher educational levels tend to

have higher employment rates and better career prospects (M. S. Ali & Jalal, 2018; Faridi et al., 2010; Yabiku & Schlabach, 2009). Also, working women are more empowered in contraceptive use decision-making and have greater control over financial resources to avail themselves of contraception (Casterline et al., 1997). Hence, it may be noted that working women are generally better educated, exposed to contraceptive information, and comprehended the importance of practising contraception. In Pakistan, Fikree et al. (2001) and Mahmood and Ringheim (1996) proposed that increasing women's education and greater economic status and opportunities promote contraceptive use.

Better-educated women are also more likely to delay marriage in developing countries (Amoo, 2017; Gangadharan & Maitra, 2003; Shahzad, 2017; Tey, 2007b). Educated women are more likely to prioritise their careers over marriage due to the higher opportunity cost of marriage and have a greater awareness of early marriage consequences, which in turn postpones their marriage. Islam (2018) discovered a positive association between the age at first marriage and the use of modern contraception. Specifically, the likelihood of using modern contraception increased with age at first marriage among young women under age 25.

Urbanisation brought higher contraceptive use in developing countries (Ajmal et al., 2018; Hossain et al., 2018; Islam, 2018; Islam et al., 2016; Mandiwa et al., 2018; Osmani et al., 2015; Palamuleni, 2013; Rasooly et al., 2015). The availability

and accessibility of FP services were given greater emphasis in urban areas. Women in rural areas typically have limited financial resources and access to contraceptive methods (Nyauchi & Omedi, 2014), explaining lower contraceptive use. However, Tey (2021) observed that urban-rural residence had little or no effect on contraceptive use in Malaysia, suggesting that family planning services in rural areas are as accessible as in urban areas.

Past studies showed that socio-demographic variables are positively associated with contraceptive use. These variables include age (Debebe et al., 2017; Mahato et al., 2020; Mandiwa et al., 2018; Osmani et al., 2015; L. M. Singh et al., 2020) and the number of living children (Ajmal et al., 2018; Islam, 2018; Islam et al., 2016; Lwelamira et al., 2012; Osmani et al., 2015; Rasooly et al., 2015). Women tend to achieve the desired number of children as age increases and are more likely to use contraception. Similarly, women with large family sizes will limit births through contraceptive use as they have attained the desired number of children (Metwally et al., 2015; Nyauchi & Omedi, 2014). A case study on Malaysia by Aznie et al. (2013) revealed that the practice of FP increased with the number of living children, especially after the first birth.

There has long been a contentious debate over FP and Islam in Muslim-majority countries. Muslim-majority countries have a relatively low contraceptive prevalence compared to the rest of the world. The Muslims presumed that FP services were used to suppress their population (Najimudeen,

2020). Moreover, the deference to God's will and the ensuing lack of intention to use contraceptives are often cited as Islamic ideologies to prevent contraceptive use (Agha, 2010). The perspectives of religious leaders may also play a role in the variation in contraceptive prevalence in Muslim-majority societies. According to prior research, most Pakistanis believe their religious leaders oppose contraception (M. Ali & Ushijima, 2005). Given the significance of religious leaders' opinions in Pakistani society, this is likely to impact people's attitudes towards FP policies and the use of FP (Nasir & Hinde, 2011).

The 2014 Malaysian Population and Family Survey showed that the CPR of Malays (all of whom are Muslims) was slightly lower than the Chinese and other indigenous groups - 50.6% versus 62.0% and 55.2% (Tey, 2020). There is a continuing faith among some rural Malays that FP is prohibited entirely in Islam (International Planned Parenthood Federation [IPPF], as cited by Center for Reproductive Rights & Asian-Pacific Resource and Research Centre for Women, 2005). However, considering that the urbanisation level in Malaysia has reached over 70% since 2010, the influence of religion on contraceptive use in Malaysia may not be as strong as in Pakistan.

DATA AND METHODOLOGY

Data Source

This study used secondary data from the 2014 Malaysian Population and Family Survey (MPFS) and the 2017–2018 Pakistan Demographic and Health Survey (PDHS).

The Fifth MPFS (MPFS-5) was conducted by the National Population and Family Development Board (NPFDB) in 2014 (Mahmud et al., 2016). The 2017–2018 PDHS was conducted between November 2017 and April 2018 by the National Institute of Population Studies under the Ministry of National Health Services, Regulations and Coordination (National Institute of Population Studies [Pakistan] & ICF, 2019). Both surveys covered a nationally representative sample and aimed to provide reliable national estimates for demographic and reproductive health statistics. A total of 5,175 Malaysian and 14,502 Pakistani currently married women aged 15–49 years were included in this study.

Study Variables

The dependent variable for this study is current contraceptive use. This categorical variable was measured at three levels: modern method, traditional method, and non-use. The CPR referred to the proportion of married women of reproductive ages who are currently using (or whose partners are using) a contraceptive method. The independent variables include women's age, age at first marriage, place of residence, women's educational level, current employment status, and the number of living children.

Data Analysis

All analyses were carried out using IBM SPSS Statistics version 25. Descriptive analyses were performed to show the distributions of contraceptive methods

and selected socio-economic variables. Crosstabulations and Chi-square tests were used to examine the relationship between contraceptive use and each of the independent variables. Multinomial logistic regression was performed to determine each country's net effect of selected independent variables on contraceptive use.

RESULTS

Table 1 shows the frequency and percentage distributions of married women aged 15–49 years by socio-economic characteristics in Malaysia and Pakistan. Most married women in Malaysia are aged 30 years or over, and the proportion is evenly distributed across the five-year age groups of 30 and

Table 1

Frequency and percentage distributions of married women aged 15–49 years by socio-economic characteristics

	Malaysia		Pakistan	
Socio-economic characteristics	n	%	n	%
Overall	5,175	100.0	14,502	100.0
Age (years)				
<25	367	7.1	2,912	20.1
25–29	740	14.3	3,077	21.2
30–34	997	19.3	2,774	19.1
35–39	968	18.7	2,614	18.0
40–44	1,021	19.7	1,696	11.7
45–49	1,082	20.9	1,429	9.9
Age at first marriage (years)				
<15	52	1.0	1,390	9.6
15–17	428	8.3	4,030	27.8
18–20	1,067	20.6	4,297	29.6
21–23	1,465	28.3	2,550	17.6
>=24	2,161	41.8	2,235	15.4
Place of residence				
Urban	3,263	63.1	6,972	48.1
Rural	1,912	36.9	7,530	51.9
Educational level				
No education	101	2.0	7,313	50.4
Primary	536	10.4	2,022	13.9
Secondary	3,232	62.5	3,023	20.8
Higher	1,306	25.2	2,144	14.8
Current employment status				
Not working	2,825	54.6	12,396	85.5
Working	2,350	45.4	2,106	14.5
Number of living children				
0	449	8.7	1,968	13.6
1–2	1,892	36.6	4,444	30.6
3–4	2,002	38.7	4,460	30.8
>=5	832	16.1	3,630	25.0

Note. Missing values are excluded from the calculations.

above. Meanwhile, the age structure of married women in Pakistan is relatively young, with over 60% younger than 35. Child marriage is prevalent in Pakistan, where 9.6% of the women married before the age of 15, and 27.8% married between 15 and 17. Meanwhile, delayed marriage is common in Malaysia, as nearly half (41.8%) of the women married after 23 years. More than half (63.1%) of the women are from urban areas in Malaysia, compared to only 48.1% in Pakistan. Almost all (98%) Malaysian women received an education, with 62.5% and 25.2% attaining secondary and tertiary education, respectively.

In contrast, half (50.4%) of Pakistani women never attended school. In addition, Pakistan has a higher percentage of unemployed women than Malaysia (85.5% versus 54.6%). As compared to Pakistan, Malaysia reported a higher percentage of married women with one to four children and a lower percentage with no children or with a large family size of at least five children at the time of the survey.

Table 2 presents the levels of CPR by contraceptive method type in Malaysia and Pakistan. Overall, the CPR in Malaysia is much higher than that in Pakistan. For example, Malaysia recorded a CPR of 52.9% for any method (sum of modern and traditional methods), 35.7% for modern method, and 17.2% for the traditional method, while the corresponding figures in Pakistan are 32.5%, 23.6%, and 8.9%, respectively.

Among the modern contraceptive methods, the pill is the most popular method in Malaysia (14.9%, or 28.2% of

the contraceptive users), while condoms and sterilisation are widely utilised in Pakistan (9.1% and 6.7%, respectively). Withdrawal is the most commonly used traditional method in Malaysia (9.6%) and Pakistan (7.7%).

Table 2
Percentage distribution of married women aged 15–49 years by contraceptive method type

	Malaysia	Pakistan
n	5,175	14,502
Modern method	**35.7**	**23.6**
Pill	14.9	2.0
IUD	2.4	2.2
Injection	5.5	3.0
Condom	5.1	9.1
Sterilisation	6.9	6.7
Others	0.9	0.6
Traditional method	**17.2**	**8.9**
Periodic abstinence	4.6	1.1
Withdrawal	9.6	7.7
Others	3.0	0.1
Not using	**47.1**	**67.5**

Table 3 shows the difference in contraceptive use by selected socio-economic variables in Malaysia and Pakistan. The bivariate analysis reveals that each selected socio-economic variable is significantly associated with contraceptive use. Across the age groups, married women aged 30–44 reported higher levels of modern contraceptive use in both countries, while Malaysian women aged 45–49 and Pakistani women aged below 25 have the lowest modern CPR. The traditional CPR is relatively lower among younger

Table 3
Percentage distributions of contraceptive use by socio-economic variables

Socio-economic Characteristics	Malaysia (n = 5,175)				Pakistan (n = 14,502)			
	Non-use	Modern	Traditional	Chi-square test statistic	Non-use	Modern	Traditional	Chi-square test statistic
	%	%	%		%	%	%	
Overall	47.1	35.7	17.2		67.5	23.6	8.9	
Age (years)				118.3***				691.5***
<25	57.2	32.4	10.4		84.3	11.2	4.4	
25–29	53.5	32.4	14.1		72.8	20.1	7.1	
30–34	46.1	36.4	17.5		60.9	28.0	11.1	
35–39	40.1	40.6	19.3		58.0	30.9	11.1	
40–44	38.4	42.6	19.0		55.7	32.3	12.1	
45–49	54.9	27.4	17.7		65.9	24.4	9.7	
Age at first marriage (years)				45.0***				23.4**
<15	42.3	50.0	7.7		67.5	25.1	7.4	
15–17	43.7	43.9	12.4		67.5	24.4	8.1	
18–20	46.4	38.5	15.1		66.8	24.1	9.1	
21–23	44.8	36.6	18.6		66.8	23.1	10.1	
>=24	49.9	31.7	18.4		69.5	20.9	9.6	
Place of residence				22.2***				221.5***
Urban	48.1	33.5	18.4		61.9	26.4	11.6	
Rural	45.5	39.5	15.0		72.6	21.0	6.3	
Educational level				33.9***				271.7***
No education	41.6	43.6	14.9		73.6	19.7	6.7	
Primary	45.5	40.5	14.0		63.4	26.8	9.8	
Secondary	46.3	37.1	16.7		61.5	27.4	11.1	
Higher	50.5	29.7	19.8		58.9	28.8	12.3	
Current employment status				24.4***				22.8***
Not working	45.0	38.7	16.4		68.2	22.9	8.9	
Working	49.8	32.1	18.1		63.4	27.6	8.9	
Number of living children				514.8***				1,597.9***
0	92.0	3.8	4.2		99.0	0.6	0.4	
1–2	51.5	31.8	16.7		75.8	16.8	7.4	
3–4	36.9	41.7	21.4		55.5	32.3	12.2	
>=5	37.6	47.4	15.0		54.9	33.8	11.3	

Note. Chi-square test significance: *** p < .001, ** p < .01

Malaysian and Pakistani women under 30 years. The modern contraceptive prevalence decreased with age at first marriage in both countries. However, the use of traditional methods increased with age at first marriage, especially in Malaysia. Rural women in Malaysia reported a higher level of modern contraceptive use than those residing in urban areas, but the reverse is observed in Pakistan. Meanwhile, urban women have a higher use rate of a traditional method than rural women, and the difference is more pronounced in Pakistan.

Surprisingly, modern contraceptive use is negatively associated with women's educational level in Malaysia, but the opposite is true in Pakistan. Traditional contraceptive use is positively associated with women's education in both countries. Modern CPR for working women is relatively higher than for non-working women in Pakistan, but the opposite is observed in Malaysia. On the contrary, the prevalence rate of the traditional method is higher among Malaysian working women than their non-working counterparts. Modern contraceptive use is positively associated with the number of living children, and the relationship is more notable in Pakistan. Across the number of living children's groups, the use of the traditional method is the highest among women who had three to four children in both countries.

Table 4 presents the multivariate analysis for the determinants of contraceptive use among married women aged 15–49 years, using multinomial logistic regression. Women's age is negatively associated with the likelihood of using a modern method

and traditional method rather than non-use and using a modern method rather than the traditional method in Malaysia. However, the likelihood of using a modern and traditional method over non-use increased with age at first marriage in Malaysia. In Pakistan, the likelihood of using a traditional method than non-use increased with age at first marriage, but a negative association is observed between age at first marriage and the likelihood of using a modern method than the traditional method. Concerning women living in urban areas, rural women in Pakistan are less likely to practise modern and traditional methods than non-use. Nevertheless, rural women are more likely to practise a modern method than a traditional one in both countries, and the effect is stronger in Pakistan.

In Pakistan, women who attained at least primary education have higher odds of using a modern and traditional method than non-use, especially those with higher education. Compared to non-working women, working women were more likely to practise a modern method than the non-use and traditional methods in Pakistan. It is worth noting that both women's education and employment factors are insignificant in the multivariate context of Malaysia. In both countries, the number of living children is positively associated with the likelihood of using a modern method and traditional method than non-use. Furthermore, a positive association is observed between the number of living children and the likelihood of using a modern method than the traditional method in Malaysia.

Table 4
Adjusted odds ratios (95% confidence intervals) from multinomial logistic regression analysis

Variables	Malaysia (n = 5,175)			Pakistan (n = 14,502)		
	Modern vs non-use	Traditional vs non-use	Modern vs traditional	Modern vs non-use	Traditional vs non-use	Modern vs traditional
Age	0.95*** (0.94,0.96)	0.98** (0.97,0.99)	0.97*** (0.96,0.98)	1.00 (0.99,1.01)	1.00 (0.99,1.01)	1.00 (0.99,1.01)
Age at first marriage	1.03** (1.01,1.05)	1.04*** (1.02,1.06)	0.99 (0.96,1.01)	0.99 (0.98,1.00)	1.02* (1.01,1.04)	0.97** (0.95,0.99)
Place of residence						
Urban (Ref)	1.00	1.00	1.00	1.00	1.00	1.00
Rural	1.08 (0.95,1.23)	0.85 (0.71,1.00)	1.28** (1.07,1.52)	0.76*** (0.70,0.83)	0.54*** (0.48,0.62)	1.41*** (1.22,1.61)
Educational level						
No education (Ref)	1.00	1.00	1.00	1.00	1.00	1.00
Primary	0.88 (0.54,1.43)	0.85 (0.44,1.65)	1.03 (0.54,1.96)	2.15*** (1.89,2.43)	2.11*** (1.75,2.54)	1.02 (0.83,1.24)
Secondary	0.90 (0.57,1.43)	1.04 (0.56,1.93)	0.87 (0.47,1.58)	2.72*** (2.43,3.06)	2.72*** (2.31,3.21)	1.00 (0.84,1.20)
Higher	0.78 (0.48,1.26)	1.18 (0.63,2.23)	0.66 (0.35,1.23)	3.45*** (3.01,3.97)	3.28*** (2.70,4.00)	1.05 (0.85,1.30)
Current employment status						
Not working (Ref)	1.00	1.00	1.00	1.00	1.00	1.00
Working	0.91 (0.79,1.04)	1.00 (0.85,1.18)	0.91 (0.76,1.08)	1.25*** (1.11,1.40)	1.04 (0.87,1.23)	1.20* (1.01,1.44)
Number of living children	1.52*** (1.45,1.60)	1.37*** (1.29,1.45)	1.11*** (1.05,1.18)	1.42*** (1.38,1.46)	1.40*** (1.35,1.46)	1.01 (0.97,1.05)

Note. Wald test significance: *** $p < .001$, ** $p < .01$, * $p < .05$

DISCUSSION

This study investigates the level of contraceptive use and its association with socio-economic factors among women of reproductive age in Malaysia and Pakistan. Evidence from this study reveals that contraceptive use was negatively associated with age in Malaysia. Older women may perceive themselves less likely to get pregnant and be involved in sexual activity, hence the lower contraceptive use. In addition, Malaysia's population policy focuses on family development, with less emphasis on modern contraceptive use. As a result, women are more inclined to adopt the cheaper and less effective traditional method, especially older women.

Women living in rural areas have lower odds of practising contraception than those living in urban areas in Pakistan, similar to Mahmood and Ringheim's (1996) finding. The lower level of contraceptive use is likely due to insufficient resources and a lack of access to FP services in rural areas (Nyauchi & Omedi, 2014; Zaidi & Hussain, 2015). However, this study reveals a higher likelihood of using a modern method than the traditional method in rural areas compared to urban areas in both countries after controlling for other variables. Urban women, especially those in Malaysia, might have better knowledge of the side effects of modern methods, such as contraceptive-induced menstrual bleeding, and hence, are more likely to opt for the natural birth control method. The higher usage of modern methods among rural Pakistani women could also be attributed to the vigorous participation of Lady Health Workers in providing modern contraceptives under the Lady Health Worker Program.

While almost all married women in both countries have heard of FP, modern CPR remains low, especially in Pakistan. Complete knowledge of contraceptives is essential in assisting women in making contraceptive decisions. Educational level is often used as a proxy for knowledge of FP (Zaidi & Hussain, 2015), which acts as a stimulus to contraceptive use. Highly educated women are less likely to face obstacles in accessing FP services than their lesser-educated counterparts in Pakistan, and this result confirms the previous finding by Fikree et al. (2001) and Mahmood and Ringheim (1996).

Education could expose women to the latest FP knowledge and information and provide them autonomy in obtaining FP services. However, in patriarchal societies such as Pakistan, women's mobility is restricted by purdah (the seclusion of women from public observation), which was found to be an obstacle to accessing contraception in Pakistan by Mumtaz and Salway (2005). Hence, it is not surprising to discover that half of the Pakistani married women were uneducated, which explains the low level of contraceptive use. Given the importance of women's education on contraceptive use, the Pakistani government must adopt policies that commit to universal education to improve modern CPR.

The findings of this study showed that working women are more likely to use a modern contraceptive method in Pakistan.

In addition, working women are generally more educated, aware of the importance of contraceptive use, and able to afford FP services. However, looking at the cultural background of Pakistan, the social norm suppresses women's participation in the workforce unless they receive support from their husbands or are required to maintain the household standard of living. This finding suggests that female employment could strengthen the autonomy of Pakistani women in the household and subsequently improve contraceptive use.

In Malaysia, bivariate analysis shows an interesting finding of lower modern contraceptive prevalence among better-educated and working women. Higher-educated women tend to delay marriage for career advancement, and given the higher age at marriage in Malaysia than in Pakistan, these women will continue to give birth to children and forgo contraception until their desired family size is achieved. Education and employment factors, however, become insignificant in the multivariate context, while the association between age at marriage and contraceptive use has become positive. It suggests that after controlling for other factors in the model, women who married later have greater autonomy and are more empowered to make contraceptive decisions. Besides, a separate logistic regression considering the ethnicity effect shows that concerning Chinese women, Malay and other Bumiputera, and Indian women are less likely to practise a modern contraceptive method than the non-use and traditional methods (Table 5). It suggests that ethnicity is more important in explaining contraceptive use in Malaysia than female education and employment. However, the ethnic variable is excluded from this cross-country study for standardisation purposes.

Religious belief is often reported as a hindrance to contraception, particularly in Muslim countries (Casterline et al., 2001; Mahmood & Ringheim, 1996; Mustafa et al., 2015). The misconception that birth control is forbidden in Islam should be corrected. The Holy Quran contains no texts that forbid FP. FP was never forbidden by Prophet Mohamed (Najimudeen, 2020). The Pakistani government should revitalise the Lady Health Worker Program — a 1994 programme that had succeeded in increasing modern contraceptive use among rural women. Lady Health Workers were deemed the most effective medium for dispelling religious beliefs and misconceptions about FP (Douthwaite & Ward, 2005). Under this program, primary health care services are supplied to the doorsteps of underserved households, particularly in rural areas. A wide range of maternal and child healthcare services was provided, including reproductive health education and FP. The program has increased CPR by more than twofold between 1990–1991 and 2000–2001 (Douthwaite & Ward, 2005). The government needs to continue expanding this program as the provision of doorstep services has proved to be the most cost-effective way of bringing FP services to Pakistani women who are restricted by social norms and religious beliefs.

Table 5

Adjusted odds ratios (95% confidence intervals) from multinomial logistic regression analysis for Malaysia (with ethnicity as one of the independent variables)

Variables	Malaysia (n = 5,175)		
	Modern vs non-use	Traditional vs non-use	Modern vs traditional
Age (years)	0.95*** (0.94,0.96)	0.98** (0.97,0.99)	0.97*** (0.95,0.98)
Age at first marriage (years)	1.02* (1.01,1.04)	1.04*** (1.02,1.06)	0.98 (0.96,1.01)
Place of residence			
Urban (Ref)	1.00	1.00	1.00
Rural	1.14 (1.00,1.31)	0.89 (0.75,1.06)	1.29** (1.08,1.54)
Educational level			
No education (Ref)	1.00	1.00	1.00
Primary	0.85 (0.52,1.38)	0.83 (0.43,1.60)	1.02 (0.53,1.95)
Secondary	0.87 (0.55,1.38)	1.02 (0.55,1.89)	0.85 (0.46,1.56)
Higher	0.77 (0.47,1.25)	1.18 (0.62,2.23)	0.65 (0.35,1.23)
Current employment status			
Not working (Ref)	1.00	1.00	1.00
Working	0.92 (0.80,1.05)	1.01 (0.85,1.19)	0.91 (0.77,1.08)
Number of living children	1.55*** (1.48,1.63)	1.38*** (1.30,1.47)	1.12*** (1.06,1.19)
Ethnicity			
Chinese (Ref)	1.00	1.00	1.00
Malay and other Bumiputera	0.45*** (0.36,0.56)	0.73* (0.55,0.96)	0.61*** (0.47,0.81)
Indian	0.35*** (0.25,0.49)	0.96 (0.66,1.38)	0.37*** (0.25,0.55)
Others	0.61 (0.26,1.43)	0.35 (0.08,1.63)	1.71 (0.37,7.90)

Note. Wald test significance: *** p < .001, ** p < .01, * p < .05

The stagnation of CPR since the 1980s in Malaysia suggests the need to revitalise the national FPP by strengthening the role and functions of NPFDB in promoting modern contraceptive use. A more effective strategy could be developed through collaboration with the Ministry of Health. FP information and services can be promoted and provided at the maternal community health clinics to reach out to those in need. It could also be emulated in the Pakistani context.

This study has several limitations that should be noted. First, while religion and ethnicity may be essential in explaining the differences in contraceptive use, these two variables are not available in the PDHS. Moreover, economic factors such as household income or wealth index may be prominent in explaining the contraceptive choice but were excluded from the analysis due to the different measures used in both surveys. The lack of data prevents an analysis of the net effect of these variables on contraceptive use. Despite these drawbacks, this study uncovered crucial aspects of contraceptive use. Given that nationally representative data were used in this study, the findings may fairly represent the reproductive behaviour of married women in the respective nations.

CONCLUSION

Socio-economic disparities explain much of the difference in contraceptive prevalence between Malaysia and Pakistan. Low levels of education and social stigma deter women from entering the workforce. Thus, enhancing women's socio-economic status and reaching out to rural, uneducated, and jobless women are essential towards improving contraceptive use, especially in Pakistan. The relevant authorities should strive to increase the availability and accessibility of FP services in low-resource settings to cater to the FP needs of these vulnerable groups. Legislators, religious authorities, non-governmental organisations, and local leaders should go hand in hand to break social and cultural barriers. The low literacy level among Pakistani women should be addressed through the government's commitment to universal education, which will improve contraceptive use. There is a need to relook into Malaysia's population policy to improve women's reproductive health and well-being.

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Cultural Tradition as a Local Context for Sustainable of Urban Identity in Gianyar City Case Study

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ABSTRACT

This study explores the role of cultural traditions in maintaining identity for the city's sustainability by looking at the relationship between cultural traditions, conservation, and urban design. Local culture, customs, and traditions are recognized as forming the character of space that gives identity. So cultural sustainability becomes a higher emphasis in sustainable development activities. Tradition can be understood and even creates a sense of place for local communities towards their environment in globalization if the principle of cultural essence is not threatened. Gianyar City, Bali, was chosen as a case study representing other cities with possibly similar characteristics. This area has the potential to fulfill a sustainable urban revitalization initiative. The study shows three urban form determinants, the dominant characteristics that project the attributes of fixedness and permanence: (1) Desa Adat, (2) *pempatan agung* (*catuspatha*), and (3) spatial division based on direction orientation (*mandala* and *luan teben*). It proves that tradition can bridge the change and development of community culture by ensuring that the basic beliefs of a group can be expressed and maintained in a residential environment.

Keywords: Conservation, cultural significance, cultural tradition, local context, urban identity

INTRODUCTION

Globalization has placed urban conservation as an important factor in urban planning and is necessary for sustainable development (Appendino, 2017; Staniforth, 2000); on the other hand, creating unavoidable contradictions between traditional and modern representations (Bandarin & van

Oers, 2012; Siregar, 2018). Recognition of the importance of historical and cultural representation as heritage makes it more modern, globalized, and more commercial than ever and creates actions that seem like copy-paste (Veldpaus, 2015). Likewise, in urban planning, standardization in the planning process creates uniformity in urban design documents (Samadhi, 2001). It shows that globalization puts pressure on historic cities.

Various policies on a regional scale were created as an effective control mechanism for globalization, but the lack of adaptability to the unique qualities of heritage sites makes any action taken inadequate for heritage preservation (Hmood, 2019). Urban conservation has a very broad scope, not limited to individual structures, but includes the city and the region as a whole so that the goals of sustainability and conservation often lead to conflicts (Bandarin & van Oers, 2012). At this point, along with the rapid globalization with changes in the physical, socio-cultural, and political-economic environments, questions arise about preserving local architecture, which is intended to build identity. Furthermore, heritage preservation is challenged to balance social and cultural issues with environmental and economic issues (Keitsch, 2019), ensuring historical cities' sustainability. Urban heritage is important to maintain, especially when socio-cultural values are also highly valued (Avrami, 2011; Osman, 2018) and have long been recognized as shaping the character of space that builds urban identity (Hauge,

2007; Norberg-Schulz, 1971; Trancik, 1986).

This study aims to demonstrate the role of cultural traditions in bridging heritage conservation with urban planning for sustainability. In this regard, this study investigates the relationship between cultural traditions, urban planning, and heritage protection through the example of the city of Gianyar, Bali. The area has the potential to meet social, cultural, historical, and economic needs based on the concept of sustainable urban conservation. Surveys and investigations reveal that the region's rich socio-cultural background and history can attract investment. Global penetration through tourism investment is recognized as the most obvious trigger of socio-cultural change and utilization of natural and human resources (I. N. Wijaya, 2004). For this reason, it is necessary to understand what is important as a form of spatial form, which can later be used as a city design strategy that can reflect identity. The concept of identity examines how our local environment, including cultural traditions as local wisdom, can affect our lives (Hauge, 2007). Historic city space is needed to form a local identity as an impressive area with traditional and social values that become a magnet for economic and creative activities. The research framework is shown in Figure 1.

METHOD

This study uses a pluralistic approach for qualitative research to explore diversity and complexity (Frost et al., 2010). There
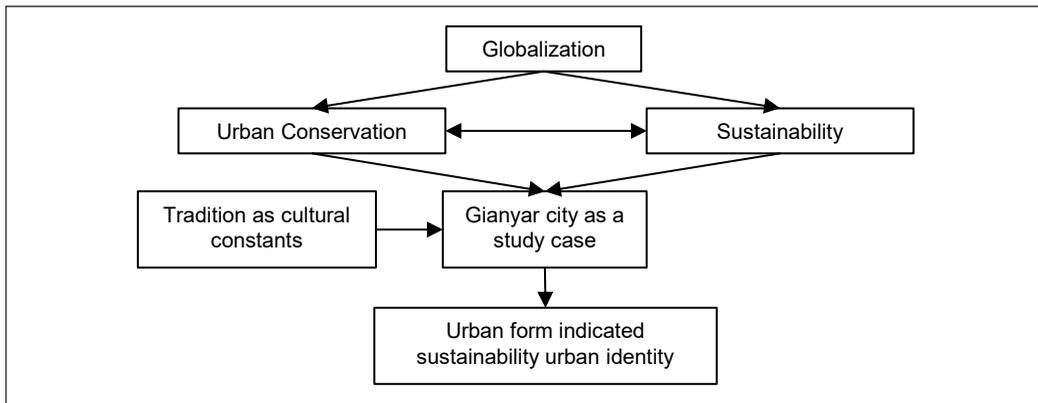
Figure 1. The research framework

are many types of pluralism, ranging from using various methods, data sources, theories, or researchers. This study refers to a pluralistic meta-study approach that provides links in various fields and diverse research disciplines (Nicola et al., 2014). It is a form of research that involves analyzing theories, methods, and qualitative research findings and synthesizing them into a new phenomenon (Paterson et al., 2001). Meta-study analysis is a study of research findings that involves critical examination and reinterpretation of the analysis and findings presented by the research, further identification of similarities and differences as interpreted in the research, which is then synthesized as a new interpretation. The study was conducted by identifying and searching relevant electronic databases: Web of Science, Science Direct, Scopus, and Google Scholar, using search terms such as "tradition," "cultural tradition," "urban conservation," "sustainability," "urban design," and "cultural significance." Each term is used twice, initially in the form of the term itself, then paired to reduce the number

and find conformity with the research context. In total, 73 relevant articles were identified as a result of the initial search, which was then used to extract values and current operative conceptions.

RESULT

Urban Conservation and Sustainability

Human civilization develops and maintains sustainability through integration with the surrounding environment and relies on natural preservation. Over time, the process of evolution and the ability of humans to adapt to their environment form unique characteristics that distinguish one place from another as an "identity." Preserving identity requires a deep understanding of how the urban factory starts its new life, with a sense of continuity from the past to the present (Salman, 2018). It is the essence of "sustainability."

The debate on sustainability began in 1987 when cultural considerations had long been neglected in sustainable development goals (Fithian & Powell, 2009). In its development, the formation of

a sustainable city as a renewable resource, economic attractiveness, a motive for social unity, and an element of identity and creativity is highly dependent on cultural heritage (Ragheb et al., 2022). It is evident in the recommendation of the United Nations Educational, Scientific and Cultural Organization (UNESCO, 2011) on historic city sites, which states that "the principle of sustainable development is to provide for the preservation of existing resources, active protection of the city's heritage, and its sustainable management as a *sine qua non* condition of development" (p.1). The role of cultural heritage is undeniable, so sustainability and conservation of cultural heritage complement each other. It is further emphasized in the sustainability paradigm (UNESCO, 2015), which states that sustainability is not only the integration of environmental, social, and economic issues and improving the quality of life but places culture as an important asset that has a broad meaning (Maaker & Pottgiesser, 2020).

In sustainability, conservation and urban transformation are recognized as a process that comes together. Conservation aims to provide maximum cultural meaning to future generations (Staniforth, 2000). Of course, this does not rule out changes to historical objects, but these objects still have an interpretation of the relationship between objects, values, and intergenerational value processes (Viñas, 2005). Interpretation can preserve the basic relationship with the past of a place by preserving and offering resources for present and future generations

to identify the historical point of view where they live or work (Loulanski, 2006)

Conservation is managing change by preserving heritage values while recognizing opportunities to express or strengthen these values for present and future generations to balance and integrate conservation and development (English Heritage, 2008; Telebian, 2005). This concept is considered the main reference in placing the boundaries of urban development in historical urban areas, which refers to the sustainability of the meaning of cultural heritage (Jokilehto, 2006). Each property can secure, maintain, and pass on its cultural meaning over time and is a key element in urban heritage conservation (Nezhad et al., 2016). Achieving an integrated harmony between conservation and sustainable urban development requires alignment, especially with socio-cultural considerations prioritized over economic and environmental issues.

Socio-Cultural Sustainability as Cultural Significance

Urbanization resulted in the increasing diversity of urban communities and changes in the built environment and associated memories (Kamei et al., 2021). On this side, heritage contributes to the sustainability of a society or social system to achieve prosperity by concentrating on cultural characteristics and social interactions (Elshater, 2015). As a result, conservation is becoming a significant part of urban planning and management. This contribution certainly highlights the ability to last long by adapting to local conditions (Avrami, 2011; Hocine

et al., 2017) so that cultural sustainability becomes a more important emphasis in sustainable development activities (Gamil & Abdul-Aziz, 2018).

Culture can refer to "the beliefs and practices of the people who are part of the urban factory" (Little & McGivern, 2014, p. 79). Protecting tangible and intangible cultural heritage is an important mechanism for transmitting cultural values and meanings (Viñas, 2005). It becomes a very important means of ensuring cultural sustainability, considering that something is said to be an "inheritance" because of the meaning attached to people, things, places, activities, and narratives, which are understood as "identity" (Fredheim & Khalaf, 2016; Malpas, 2006). Various perspectives on cultural meaning are influenced by international conventions, known as "global common sense" (Smith, 2006, p. 21), by identifying a heritage based on universal values. In this case, universal values have no locality, and there is no room to consider various forms of local wisdom, thus leading to the generalization of conservation policies across cultural pluralities (Fredheim & Khalaf, 2016).

Meliono (2011) shows the importance of local wisdom in the axiological aspect of knowledge, which consists of ethics, emotion, and spirituality. In the context of Indonesia, the locality is introduced in archipelago architecture (Pangarsa, 2006), which expresses local wisdom through its symbolism, such as building design (Riany et al., 2014; Setiprayanti & Prijotomo, 2010) and urban design (Pitana, 2002; Suryanto et al., 2015). Through this, several aspects,

such as social norms, nature preservation, and worship of God, are encoded in architectural works. By preserving the original meaning of traditional architecture, people can maintain knowledge about the harmony between humans, nature, and God (Herawati, 2012).

Both perspectives of cultural meaning reflect the complexity of contemporary cultural processes. Certain fundamental concepts of sustainability can assist in the sustainable maintenance of cultural heritage, including preserving cultural resources for present and future generations while supporting cultural diversity and changes. Of course, maintaining local knowledge that has an order of existence and value is needed to strike a balance in conservation and transformation, ensuring that our actions align with our environmental systems and do not conflict with the present and the future (McLennan, 2006).

Tradition as a Cultural Constant

Architecture as a cultural product can express the similarities of traditions in a culture and its differences with other cultures, which shows its uniqueness and actualizes its identity. Architecture manifests culture and traditions, reflecting common past experiences and the inheritance of cultural aspects, which can be seen as a resource for creating cultural identity (Hall, 1990; Japha & Japha, 1991). This identity expresses the similarities of traditions and culture among community members and differences with those who are not members (Brubaker & Cooper, 2000).

The concept of tradition was put forward by Shils (1981), a sociologist and social philosopher, who argues that the notion of 'tradition' refers to the 'filaments' of past practices or beliefs that are passed down. Furthermore, Shils stated that tradition is 'what is inherited' by parents, teachers, or authorities and learned and demonstrated again (or rethought) by agents through at least three successive "generations" (Jacobs, 2007, p. 140). Traditions are 'symbolic constructions' containing almost any content, such as physical artifacts, knowledge, stylistic artifacts, and ideologies, among others, as objectively identified entities (Samadhi, 2001). Tradition is related to behavior triggered by direct perceived interest, unique (mystical) experiences, beliefs, and political activities in social life. Tradition is manifested as "ritual" activities to reinforce tradition and carry out a more assertive repetition (Joshi, 2016).

Tradition is a non-static phenomenon that can adapt and transform in the transmission process between generations. The process of transmitting a tradition is described as the transfer of belief patterns in the form of a link or communication bridge in the interaction between generations, from the past to the present, to be carried forward into the future (Shils, 1981). It can be said that tradition is a cultural constant, built through time to some extent as the inheritance of cultural elements expressed and maintained in and through the built environment. Tradition changes in line with cultural changes, but if the principles of cultural essence persist, the identity of a place can still be understood by looking at the attachment of culture to tradition (Samadhi, 2001). In this context, tradition and culture reflect the communal historical experience and provide cultural codes, which can be seen as a resource for creating boundaries and identities (Hall, 1990; Japha & Japha, 1991).

Identity expresses a communal tradition and culture between members of a community and the differences between non-members (Brubaker & Cooper, 2000). Society expresses its identity through traditions, cultural activities, and architecture that are different from others. Thus, tradition is the inheritance of cultural elements which refers to the patterns and principles of manipulating space into the built environment (Oliver, 1989, 2006). The more the built environment reflects their culture, the more successful the pattern formed by tradition (Salama, 2015). Thus, traditions form patterns and generalities that ensure the fundamental beliefs of a group are expressed and maintained in and through the built environment and generate knowledge about the built environment, creating identity and even a sense of place for local communities towards their environment.

Relevance of Traditional-Religious Concepts in Urban Spatial

Residential and urban environments in Bali are examples of understanding the relationship between cultural traditions as identity-forming entities. Architectural of Balinese Traditional (ATB) manifest

Balinese culture and traditions based on Hinduism. In practice has been adapted and developed according to the Balinese people's place, time, condition, and life (Figure 2). This adjustment has shaped the values, norms, views, and laws that were developed still based on the original religious teachings, called 'religious customs,' and subsequently passed down from generation to generation as "traditions" (Gomudha, 1999). It can be seen as a resource for creating cultural identity (Hall, 1990; Japha & Japha, 1991).

As a result of the relationship between cultural elements (ideas, physicality/artifact, activities) based on Hinduism creates values based on religion (Roth & Sedana, 2015). The relationship between ideas and activities gives birth to customs/*awig-awig,* which regulate and organize activities so that they run according to religious norms. The relationship between the form of ideas with physical/artifacts gave birth to the concept of the built environment, which was transformed into cultural works, including ATB. The relationship between physical activity and artifacts forms a residential pattern that manifests the Balinese people's efforts to maintain the harmony of life and livelihood.

In ATB, a space or component in it represents that the world (the universe) is divided into two opposite poles, the upper world (*swah loka*), which is related to the divine with the sacred direction, and the underworld (*bhur loka* or nether) with the divine direction. Between the two, there is a central room which is the center called *madyapada*/*mertyapada* as the place of life (Hobart et al., 2001). It is an embodiment of the concept of duality, which is based on the thought event of binary opposition, manifested in the pair's universal opposition, namely the *utama* (sacral), which is contrasted with *nista* (profane) (Suwena, 2003). This classification system underlies the mindset, feelings, behavior, or actions of the Balinese and is also reflected in the orientation of the direction in Bali.

In Balinese knowledge, the main and disgraceful values are related to the orientation towards two axes: the earth's natural axis (mountain-sea) and the religious axis (sunrise and sunset directions (Munandar, 2005; Suwena, 2003). First, the earth's natural axis is manifested in a pair of *kaja* orientations, referring to the location of Mount Agung (the highest mountain in
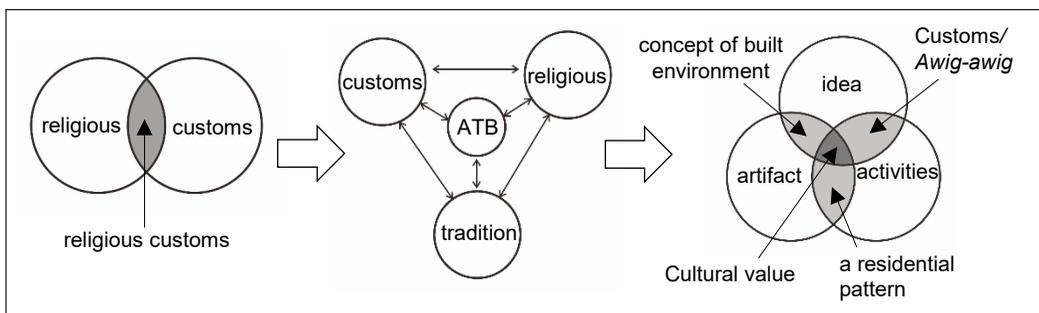

Figure 2. The relationship between cultural elements architectural of Balinese tradition in Gomudha (1999)

Bali), in contrast to *kelod* direction, referring to the location of the sea. The mountain is believed to be the residence of *Sang Hyang Ciwa*, another name for God, so it is seen as *utama* direction. The sea, as the estuary of all things, is the estuary of all useless things, so that it is believed to be a melting pot of all impurities, is seen as *nista* direction. Second, the religious axis is manifested in pairs of orientations; *kangin* direction refers to the direction of the sunrise as opposed to *kauh* direction refers to the sunset direction. The sun is believed to be *Sang Hyang Surya*, another name for the God who gives life. So, the direction of the *kangin* is of greater value than the direction of the *kauh*.

The concept of duality positions humans and nature as a single unit consisting of the same elements called the *Panca Maha Butha*, which composes physical and non-physical components. The concept of duality is based on the rules of Hindu cosmology, which are used in designing the spatial patterns of cities in Bali (Munandar, 2005). The principle of cosmology is the balance between the universe (macrocosm) and everything in it, including humans (microcosm). In addition, the duality concept also explains the concept of meeting space (east-west and north-south) and time (top-down/scaling-up), which is understood as a *mandala*. The meeting of the *mandala* has a center which is believed to be the axis of the balance of the universe that binds the elements around it (Atmaja, 2003).

The existence of this center is a Balinese mindset that tends to maintain balance in life (Eiseman, 1991), which is believed to

be the religious role of the Balinese people to maintain a harmonious relationship with God, fellow living beings and protect the environment which is a representation of God's power, which is a manifestation of God's power, embodied in the concept of *Tri Hita Karana* (Ashrama et al., 2007; Hobart et al., 2001). It is their effort to achieve religious goals in the form of *Moksartham Jagadhita ya ca it Dharma,* meaning that religion (*dharma*) aims to achieve spiritual happiness and physical well-being or physical and mental happiness (*moksa*). This philosophy inspires concepts related to the physical universe to living things, such as the *tri loka* concept (the upper realm for God/*swah loka*, the middle realm for living creatures/*bhwah loka*, and the underworld/ *bhur loka*), as well as the *tri angga* concept (*utama-madya-nista* or head-body-foot) (Hobart et al., 2001). The description of the formulation of the conception can be seen in Figure 3.

The implementation of this harmonization is realized in a more limited space scale, and its existence can be felt. It is manifested in the territorial scale of Bali, Desa Adat/Indigenous Villages, *Paumahan* (residential), and Bale to the architectural/Bale component (Table 1). In the architecture and design of settlements, this conception can be seen in housing complexes and Desa Adat settlements in the form of spatial zoning and the classification of elements (Samadhi, 2001). ATB broadly consists of three groups/typologies: the architecture of the holy place/*parhyangan*, residence/*pawongan*, and public facility
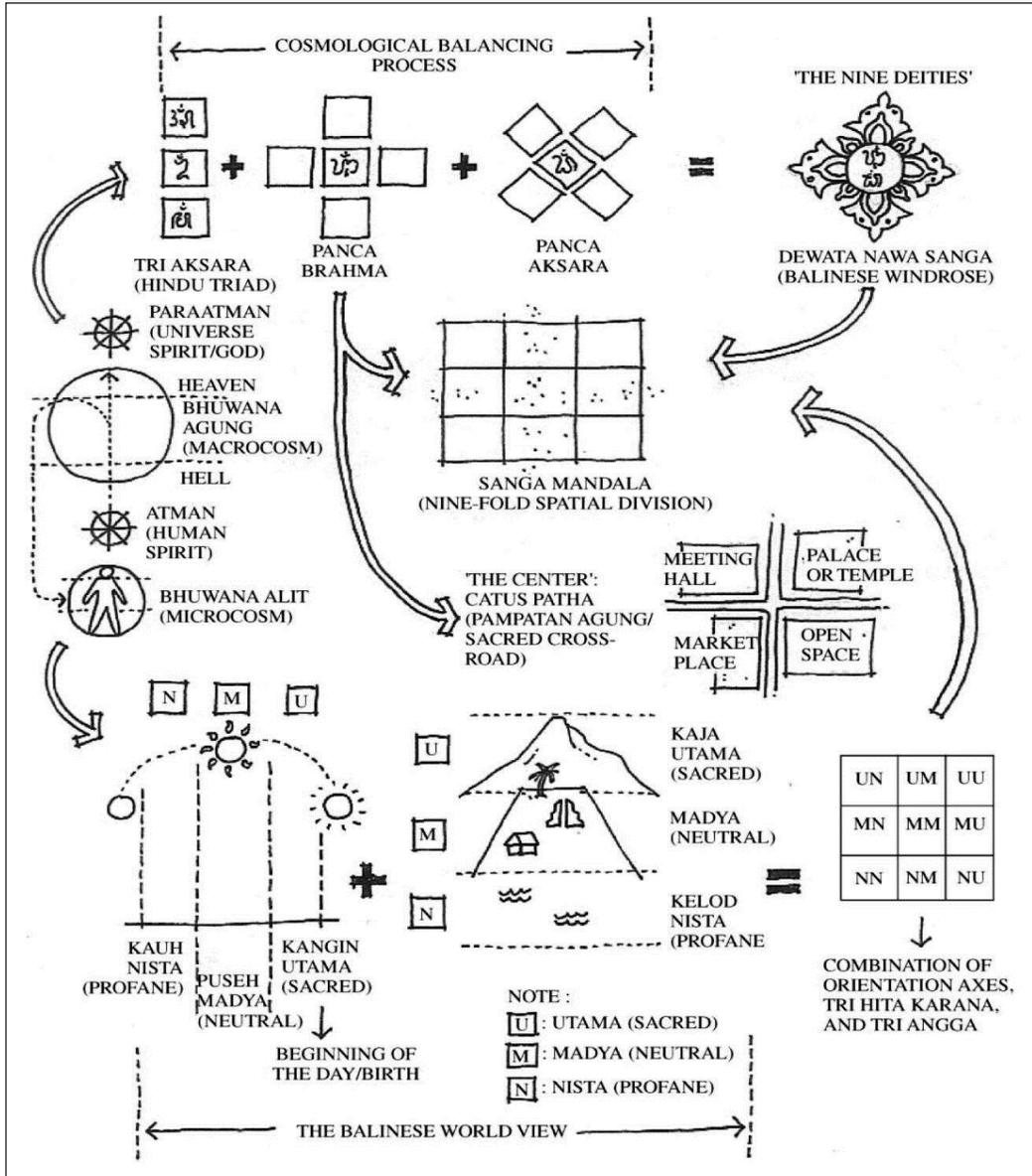
Figure 3. Balinese traditional-religious space conception by Samadhi (2001)

buildings/*palemahan* (K. A. P. Wijaya & Wiranegara, 2020).

In cosmological principles, the term city is built from the Desa Adat model (Widiastuti, 2002) as a symbolically independent unit of space (Samadhi, 2001). The Desa Adat as a cohesive spatial and cosmological unit is strengthened by the fact that the village community serves the same temple (called *pemaksan*) and develops local values and knowledge systems to be formulated in *awig-awig* (customary law), which regulates the socio-cultural life of the community. It is in line

Table 1
Implementation of harmonization in the level of the cosmos in Gomudha (1999)

Value	Microcosm		Macrocosm				
	Human body		Universe	Village	Temple	Settlement	Building Structure
Utama *Luan* Upstream	Head	**H** **A** **R** **M** **O** **N** **Y**	*Swah loka* Mountain *Kaja / kangin*	Parhyangan	*Jeroan* (inner space)	*Sanggah Merajan*	Roof
Madya Middle	Body		*Bwah loka* Plain Middle	Pawongan	*Jaba tengah* (middle space)	*Bale* House	Frame
Nista *Teben* Downstream	Foot		*Bhur loka* Sea *Kelod / kauh*	Palemahan	*Jaba sisi* (outer space)	*Tebe* (a garden in the backyard)	Building base

with Egenter's (1996) statement that Desa Adat becomes autonomous culture with all the characteristics of a higher culture, harmonious philosophy, local ontology, value systems, aesthetics, social hierarchies, and others. Therefore, the Desa Adat is the only unit of Balinese settlement based on the traditional-religious spatial conception. It is what makes cities in Bali still able to reflect their identity, considering that existing cultural traditions can still be felt.

DISCUSSION

Gianyar as a Case Study

Gianyar is one of nine cities in Bali which is located 25 km to the east of Denpasar (Figure 4), representing a homogeneous residential neighborhood and city in Bali because it is based on Hinduism. The selection of Gianyar as a case study was based on several considerations. First, Gianyar is one of two other big cities in Indonesia, Semarang and Denpasar, which are members of the Organization of World Heritage Cities (OWHC). It makes Gianyar

a city on par with 280 other heritage cities with very high cultural uniqueness (Oebaidillah, 2017). Second, Gianyar has a high cultural heritage potential as indicated by the presence of archaeological remains, especially in the Sungai Petani, Pakerisan, and Wos watersheds, indicating that the area has become the center of community religious activities and rituals (Badra, 1997).

Third, Gianyar has a long history as the root of Balinese culture. Prehistoric and historical remains often found show Gianyar as the beginning of Balinese civilization. Even in the colonial period, through the ethical politics of *baliseering* (Balinization), it became the starting point for the introduction of *gegianyaran* style architecture as a physical representation of Balinese architecture (Picard, 1996). The Indonesian government continued this cultural agenda, which encouraged the transformation of Balinese architecture by making the *gegianyaran* style a reference for realizing the identity of Balinese architecture in the early 20th century (Achmadi, 2007).
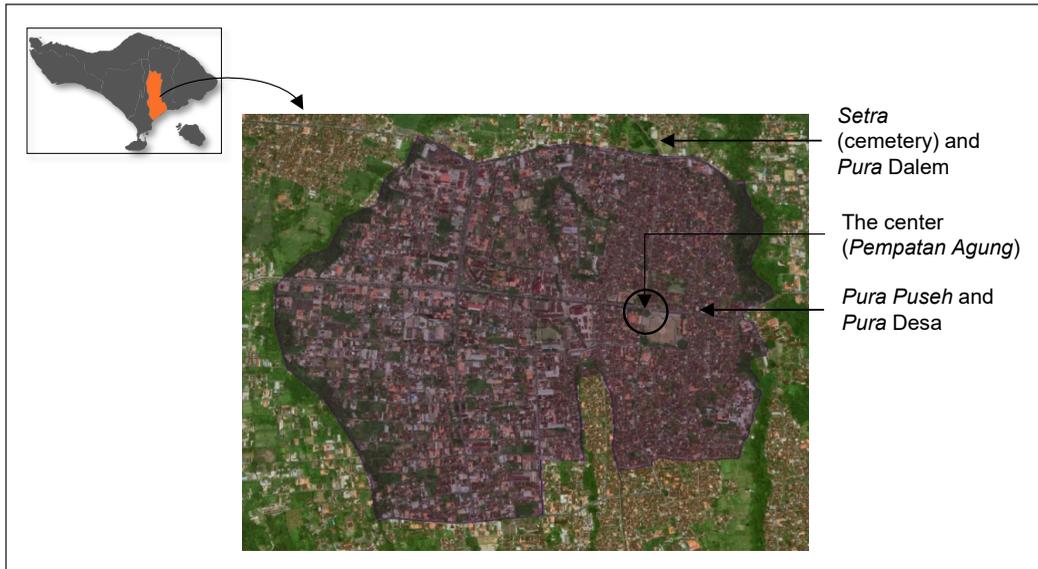
Figure 4. Gianyar city, Bali (source: Google Earth, 2021)

It is implemented in various architectural works, becoming a chosen architectural example for Balinese architecture and spreading throughout Bali (Putra, 2012; Putra et al., 2013).

Fourth, as a tourist destination in Bali and the largest foreign exchange earner after Badung, it cannot be denied that Gianyar is a tourism investment destination recognized as a trigger for social, cultural, economic, and environmental change. However, over 99% of the Gianyar people are Balinese and Hindus. So, it can be concluded that the city of Gianyar is culturally homogeneous.

Cultural Traditions as an Urban Form of Gianyar City

Based on the results of interviews, five groups of cultural constants were formulated that determine the structure of the city: (1) cosmological relations, (2) cosmological physical representations, (3) cosmological space organization, (4) cosmological space management, and (5) cosmological meanings and symbols, produce culturally appropriate urban areas (Samadhi, 2001). Balinese tradition is a tradition of myths and symbols. Organizing the configuration of the elements of the cosmic region develops into a symbol system that expresses beliefs that are abstracted and translated into organizational principles. The spatial organization is in the form of cosmic diagrams embodied in the spatial organization of the *sanga mandala*, the way of life embodied in the organization of central elements and rituals, and the center of the universe embodied in the *pempatan agung* (*catuspatha*/crossroad) (Atmaja, 2003; Samadhi, 2001). Thus, the five groups of cultural constants are synthesized with meanings and symbols to produce some determinants of the urban form.

First, the cosmological relationship in human relations with the environment

is combined with symbols and meanings, making the Desa Adat cosmological unit and its elements one of the determinants. These elements are the *parhyangan* (the network of *Kahyangan Tiga* temples: Pura Puseh, Pura Desa, and Pura Dalem), *pawongan* (the inhabitants), and *palemahan* (region), as the embodiment of the concept of *Tri Hita Karana*. Second, the physical representation of cosmology in the form of a central concept combined with symbols and meanings makes *pempatan agung* (the center of settlement) and its elements the determinant. These elements include *puri* (palace), *pempatan agung*, and *alun-alun* (field). Third, the organization and management of cosmic space, which is manifested in spatial planning, are combined with symbols and meanings, making the principle of the division of cosmological space (*sanga mandala*) and the conception of *rwa binneda*/binary opposition (*luan-teben/utama-nista*), as the determinants. These three are the dominant characteristics that project the attributes of "fixedness" and "permanency."

Bali captures space through Hindu cosmology, transmitted in Desa Adat's spatial. In this approach, the term city is understood as the center of power, which refers to the Desa Adat's center, which appears as the most powerful (capital gate) among others (Widiastuti, 2002; Wiryomartono, 1995). Desa Adat has two cultural elements that determine the urban form. First, the *Kahyangan Tiga* temple network (Pura Puseh, Pura Desa, dan Pura Dalem) is a cosmic boundary and functional

area of Desa Adat. The placement of the three temples is transmitted into the spatial hierarchy of Desa Adat: (1) Pura Puseh is placed in the most sacred area (*kaja* or *kangin*), (2) Pura Desa is in the middle of the settlement (*pempatan agung*), and (3) *setra* (cemetery) and the temple of death (Pura Dalem) are in the most remote area (*kelod* or *kauh*). Pura Puseh and Pura Dalem represent the holiest and most profane areas in the region, so no area should be built outside this Desa Adat boundary mark. The second cultural element is the spatial dichotomy of *luan-teben* or upstream-downstream, which refers to land use and function locations according to the sacred-profane continuum.

The city of Gianyar has all three elements of the *Kahyangan Tiga* temple network as a religious indicator of Desa Adat. In their spatial arrangement, Pura Puseh and Pura Desa are placed to the east of the village center, while Pura Dalem and Setra are to the north of the village. In this case, Setra and Pura Dalem become customary unitary areas with the Desa Adat Beng and the boundary of the two villages. Its existence also cannot be separated from the history of Gianyar, which started in Beng Village. Apart from placing Pura Dalem and Setra outside the value system of *luan-teben*, a network of temples clarifies the implementation of harmonization between levels of the cosmos on a spatial scale as an embodiment of the *Tri Hita Karana* philosophy. Desa Adat has a role in ensuring that the harmonization of the macrocosm and microcosm is maintained for the achievement of the prosperity of

the universe and to provide a framework in the form of rituals (Samadhi, 2001). Based on this, it can be said that the Desa Adat is the only cosmic area suitable to act as an urban design area. Desa Adat has areas with definite boundaries, socio-economic networks, and populations as features needed for planning and urban design activities.

The central concept of the Balinese mindset is the "point of view of direction and purpose" (Atmaja, 2003, p. 23), so it is always marked as space. The center does not always mean the geometric center of an area but the existential center. Determination of the center is based on relative position, which is based on the presence of a room or building, or area that becomes the center point, then other spaces are arranged to move away from the midpoint (Rapoport, 1989). This midpoint area is considered the axis of the universe, which marks the process of creation (Lundquist, 1993).

Three of the central elements in Gianyar are recognized as recurring elements of the city's cultural landscape, thus becoming a cultural heritage. The existence of the three in the spatial context can determine the shape of other cities. First, *pempatan agung* plays a role in the Balinese cosmoreligious belief system and is a place for ritual processions. The second element is the puri (palace), namely Puri Agung Gianyar, which is an object of historic preservation and a means to maintain the continuity of culture and place. Its physical appearance determines the shape and mass of the surrounding buildings, such as the height of

the building, the mass of the building, the decline of the building, the distance between buildings, and others. The last element is the *alun-alun* (field) as an open space that will determine the solid-void composition of the overall urban design.

The last cultural constant that determines the urban form is the *sanga mandala* which divides the Desa Adat area into nine spaces with different cultural-religious attributes. The division of space based on the *sanga mandala* is a consequence created from the confluence of the religious axis and the natural axis of the earth, forming the concept of the most sacred area (the *utamaning utama* space) and the most profane area (the *nistaning nista* space). Based on these principles, land use, and function within the Desa Adat area are determined. The results of the interviews formulate land use designation and function location planning in Gianyar city, which describes the ideal cultural situation of each urban environment by traditional-religious principles (Figure 5).

The description explains that the cultural landscape of the city of Gianyar is an element of tradition formation that has become a cultural constant. In other words, tradition successfully matches the built environment to the community's cultural needs and carries as much cultural meaning as possible. The Gianyar case study shows that cultural continuity can be seen from the ability of the built environment to preserve its cultural intimacy so that people are still able to understand or create their existential space. Although in practice,

		The most sacred zone		
mandala of utama /sacred value	**Utamaning nista space:** hospital, drug store	**Utamaning madya space:** government office, education facilities, housing, military office, police station		**Utamaning utama space:** temple, puri
mandala of middle / neutral value	**Madyaning nista space:** shop/commercial facilities, park	**Madyaning madya space:** housing, park, shop/ commercial facilities		**Madyaning utama space:** *Pempatan agung*
mandala of nista / profane value	**Nistaning nista space:** *setra* (cemetery), garbage dump	**Nistaning madya space:** Public transportation terminal, housing, shop/ commercial facilities		**Nistaning utama space:** marketplace, alun-alun
The most profane				

Figure 5. Land use in Gianyar city according to *sanga mandala* (Source: the field survey in Gianyar, 2000-2021)

sometimes it is found that the cultural landscape deviation from one area to another can be explained as the application of the relevant local customary-religious regulations. In this case, the dictum *desa-kala-patra* (place-time-situation/condition) regulated by Desa Adat law applies and becomes a differentiator for the cultural landscape of each Desa Adat. However, whatever the elements, their culture's level of determination and importance builds their power as meaning givers.

CONCLUSION

The background of the cultural homogeneity of the island of Bali and the similarity between the urban landscape and Balinese settlements make the cultural constant of the city of Gianyar the same as other cities and settlements in Bali. Apart from natural and manufactured functional features, cultural constants are the determinants of city structure or provide elements of urban form. They are three-dimensional objects or abstract conceptions whose dominance can give a certain form of physical development. The elements that give the urban form of Gianyar are natural, functional, and cultural, especially cosmology.

In urban design, the dominant characteristic is projecting permanent and non-permanent attributes. These elements provide functional forms such as the structure of roads, parks, and open spaces derived from elements related to culture. The city's identity in Bali is strongly influenced by cultural traditions originating from the concept of cosmology. Previous texts have identified and explained that cultural traditions can strengthen a city's identity, which is the basis for designing cities in Bali, especially concerning sustainable urban conservation. Cultural changes due to globalization cannot be avoided. However, one way that can be taken to maintain the continuity of identity is to rationalize the

concepts of traditional Balinese architecture as a cultural habit with the universalism of the meaning of tradition.

Understanding cultural traditions are full of important value in city preservation. When the community can feel the city's identity since its presence despite changes, then by itself, the principle of integrity as continuity of cultural meaning is fulfilled. In this study, the existing concepts are used to build culturally appropriate places, namely cities in Bali, that project the right cultural identity. The example of Gianyar city answers that tradition can bridge the change and development of community culture by ensuring the basic beliefs of a group can be expressed and maintained in a residential environment. It also shows that the area's identity is maintained where the residential environment has shown a pattern formed from a tradition. However, it should be realized that urban heritage cannot be seen only in one aspect. It does not rule out the possibility of further research on the concept of localization in shaping identity in urban transformation.

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A Comparative Analysis of Lower Secondary Chemistry Textbook Components: A Study Involving the Chinese Communities of China and Malaysia

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ABSTRACT

Chemistry textbooks serve as the primary reference for teachers and students during teaching and learning. The textbook details the learning content and knowledge covered within a particular subject. Chemistry is more effective in raising awareness of people's behavior and its impact on the surrounding environment, so it receives more research attention. This study investigates the chemistry content covered in Malaysian Independent Chinese Secondary School and lower secondary science textbooks published by Chinese People's Education Press. The comparative method, which includes description, interpretation, juxtaposition, and comparison, was employed in this study. The authors compared lower secondary science textbooks used in most regions of China and Malaysian Chinese schools. Results showed some similarities in the chemistry contents; for instance, they are arranged from fundamental concepts to a broader perspective. However, differences were found in the sequence in which the chemistry concepts and their application to Nature were introduced in both textbook versions used in this study. It was discovered that the organization of chemistry textbooks used in most regions of China was more scientific than the book used in Malaysia. It was relatively basic in comparison and only presented the concepts required for secondary school subjects. The findings of this study suggest that it might be appropriate for 21st-century chemistry concepts to be

integrated into the curriculum to address the need for education in environmental and sustainability issues from the perspective of education in chemistry.

Keywords: Chemistry Education, China, comparative study, lower secondary, Malaysia, textbook analysis

INTRODUCTION

The plural society in Malaysia denotes the multi-linguistic nature of its people, which has resulted in several types of schools in the country (Hoque et al., 2020; Sharma & Al-Sinawai, 2019). There is "Sekolah Kebangsaan," which primarily uses bahasa Melayu as the medium of daily instruction; vernacular schools, which use respective mother tongues (namely Mandarin Chinese and Tamil) as the medium of instruction, and Malaysian Independent Chinese Secondary Schools (MICSS), which use Mandarin and simplified Chinese in teaching and daily communication. The existence of MICSS itself has been a long and arduous struggle between Malaysian Chinese communities and the Malaysian government (Siah et al., 2015) to preserve and transmit the culture of their mother tongue in Malaysia.

It was due to the solidarity and continued resistance of the Malaysian Chinese in meeting wave after wave of government modular educational policies that have preserved Chinese primary schools, secondary schools, and colleges, where Mandarin and simplified Chinese were the primary medium of teaching instruction, and this has made Malaysia the sole country outside of China with a comprehensive

Chinese education system (Peng, 2019). Malaysia has also been recognized as a model of overseas Chinese education, with the existence of MICSS being viewed as crucial as a cultural bastion for the Malaysian Chinese for the completion of their 12-year foundation education program in their mother tongue. It has therefore received the attention of many researchers, which is the primary reason for conducting this research.

Nowadays, in line with the global economic and technological development trend, MICSS emphasizes enhancing students' learning in mathematics and science while simultaneously transmitting their mother tongue culture. Within the integrated lower secondary sciences, chemistry is considered essential and compulsory, due to its close connection to people's daily life, such as food, clothing, transportation, hygiene, drugs, and personal health (Middlecamp, 2019; Set et al., 2015). Similar to Physics and Biology, Chemistry also raises awareness of people's behavior and its impact on the surrounding environment to strive towards the creation of a more friendly and healthy living environment (Bodlalo et al., 2013; Kubiatko et al., 2017). Therefore, regardless of the region, school chemistry plays a critical role in further training students to become professional chemists, educating them to become competent citizens and building a scientifically healthy lifestyle in the future (Jegstad & Sinnes, 2015; Wei, 2019; Yunus & Ali, 2013). Furthermore, as a bridge between primary science and upper

secondary chemistry, lower secondary chemistry is responsible for providing students with a strong foundation in chemistry to support their further studies (Okunuga & Ajeyalemi, 2018). For the reasons mentioned above, lower secondary chemistry was selected from the various compulsory courses for secondary school students as the focus of this study.

Among the factors that may influence student learning outcomes, it can be argued that textbook content is the first to attract criticism when the results do not meet initial expectations (Vojíř & Rusek, 2021). However, it is accepted that different structures and educational orientation transfer different views of chemistry into their textbooks (Chen et al., 2019; Eilks & Chen, 2019; Wei et al., 2019), so rather than the unified curriculum standards themselves, it seems to be the corresponding textbooks and their content that may contribute to students' negative attitudes towards chemistry (Rusek & Vojíř, 2019; Yunus & Ali, 2013), which may also directly reduce students' learning outcomes in the subject. In addition, for teachers, the content of the textbooks may directly affect their choice of teaching methods (Lepik et al., 2015), their design of teaching procedures (Rusek & Vojíř, 2019; Wei et al., 2019), and the assessment of their students' learning outcomes (Bakken, 2019). Furthermore, the analysis of textbooks is considered to be critical, as textbooks may inform teachers' teaching and provide direction for students' pre-reading and post-course review (Rusek & Vojíř, 2019), which is why this study

decided to compare the lower secondary school chemistry component in science textbooks.

One point that needs to be mentioned is that chemistry is studied in Chinese lower secondary schools from Grade 9 and is taught independently from physics and biology in separate textbooks, unlike at MICSS, where physics, chemistry, and biology are taught in unison, and this is referred to as Unified Science. Chemistry in the MICSS educational system is only a component of Science and is taught in Grade 8 or Form 2 (for the majority) and Grade 9 or Form 3 (for a small minority). Therefore, this study utilizes the theory of comparative analysis defined by Bereday (1967) to identify the similarities, differences, strengths, and weaknesses of the 9th-Grade chemistry textbook, as published by the Chinese People's Education Press (PEP), and the chemistry sections used by MICSS lower secondary, published by United Chinese School Committees' Association of Malaysia (Dong Zong), and draws on the lower secondary science textbook published by Zhejiang Education Publishing Group, to learn from each other through macroscopic comparison and analysis.

METHODS

This study was a qualitative, non-experimental comparative study that aimed to compare the PEP edition chemistry textbook with the chemistry section of the MICSS science textbook from a macro perspective so that the two textbook versions could be enhanced to improve their users'

chemistry learning outcomes, especially those of the lower secondary students in MICSS. Documentation was applied as the primary data collection method, and Bereday's (1967) comparative method with four steps: description, interpretation, juxtaposition, and comparison (Adick, 2018) was also employed to achieve the research purpose.

The following actions were completed within each stage based on the research purpose. In the descriptive phase, the available data that met the requirements and purpose of the study was systematically listed to prepare for the interpretive phase that followed. In the interpretation phase, all the data was analyzed and interpreted based on the research purpose to present the primary content of the lower secondary school science textbooks (Chemistry sections) used by MICSS and the version employed by most regions in the People's Republic of China (abbreviated as China). In the juxtaposition phase, the conclusions obtained from the first two phases were examined to fulfill the research purpose and then compared directly and simultaneously, which comprised the final phase, the comparison phase.

With regard to the final documents, only the two sets of textbooks were selected from several textbook versions as the sample for the study to achieve the research purpose. These were Grade 9 PEP chemistry textbooks and the lower secondary level science textbooks used by MICSS. This sample selection was based on convenience (Merriam, 2009), which meant that the final sample selected for this study was more accessible than others. The choice of comparing MICSS science and PEP chemistry textbooks was primarily made to explore the rationale for the Dong Zong curriculum team not preparing science textbooks for lower secondary level MICSS students in line with the PEP chemistry textbook version, even though the PEP edition chemistry textbooks were used in most regions of China.

RESULTS

This section presents the results related to the four steps: description, interpretation, juxtaposition, and comparison. In the first step, the authors describe the final documents based on the information they obtained from various sources. To have a deep understanding of the content of the textbooks, the authors examined the primary content of each textbook version separately in the interpretation step (the second step). In the third step, the information obtained from the first two steps was juxtaposed, and a framework was provided to pave the way for a comparison of the similarities and differences between the two textbook versions.

Description

At this stage, combined with the research purpose, all the relevant documents were collected and presented in tables to facilitate further analysis at a later stage.

More specifically, in China, in many regions, chemistry is taught in Grade 9 and is split with physics (arranged for Grade 8

and Grade 9 students) and biology (arranged for Grade 7 and Grade 8 students). Although there are integrated science editions, they are not widely adopted compared to other separately published chemistry textbooks.

As presented in Table 1, different textbook versions for Grade 9 lower secondary school chemistry have been produced by various publishers according to their regional development requirements; among them, the PEP Edition produced by Chinese People's Education Press (PEP) is used in most regions of China, and it is, therefore, this version that was selected as the sample for this study. The analysis of contents for the PEP Chemistry textbook is presented in Table 2. Based on the analysis, the chemistry contents are further divided into two volumes with 12 chapters (7 chapters for volume 1 and 5 for volume 2).

However, it is interesting to note that the MICSS lower secondary school uniformly uses a comprehensive science textbook prepared by the Curriculum Department of the MICSS Working Committee, based on the science textbooks published by Zhejiang Educational Publishing House. Table 3 lists the chemistry sections in this set of science textbooks, together with the corresponding grade. There are 9 chapters covered in Grade 8 and 6 chapters for Grade 9, respectively. The chemistry concepts only start to introduce to MISCC students in the second year of lower secondary study.

Interpretation

At this stage, all the information obtained from PEP and MICSS textbook was interpreted in detail. The textbook's content was further divided into smaller segments to allow for easier analysis. When analyzing and interpreting the content, it should be viewed from the macroscopic level to gain a broader view of how the contents of the chemistry textbooks were organized. It provides a more general impression of what is covered in the lower secondary level chemistry course.

By systematically listing the contents of the two different versions of textbooks that

Table 1

Information on chemistry (science) textbooks published in China

Version	Subject for Grade 9	Press
PEP Edition	Chemistry (Two volumes)	Beijing: People's Education Press
Hujiao Edition	Chemistry (Two Volumes)	Shanghai: Shanghai Educational Publishing House
Lujiao Edition	Chemistry (Two Volumes & one volume)	Jinan: Shandong Education Press
Renai Edition	Chemistry (Two Volumes)	Beijing: Science and technology of China press
Keyue Edition (Yuejiao Edition)	Chemistry (Two Volumes)	Guangzhou: Guangdong Educational Publishing House & Beijing: Science Publishing
Beijing Edition	Chemistry (Two Volumes)	Beijing: Beijing Publishing Group
Kepu Edition	Chemistry (Two Volumes)	Shanghai: Popular Science Press
Zhejiao Edition	Science (Two Volumes)	Hangzhou: Zhejiang Educational Publishing House
Huashida Edition	Science (Two Volumes)	Shanghai: East China Normal University Press

Table 2
Contents of the PEP edition Chemistry textbook

Volume	Chapter	Title	Topics
One	1	Enter the World of Chemistry	1.1 Changes and Properties of Matter 1.2 Chemistry is an experiment-based science 1.3 Enter the chemistry laboratory
	2	The Air Around Us	2.1 Air 2.2 Oxygen 2.3 Oxygen production Experiment 1: Production and Properties of Oxygen
	3	The Mystery of the Composition of Matter	3.1 Molecules & Atoms 3.2 The Composition of Atoms 3.3 Chemical Elements 3.4 Ions
	4	Water in Nature	4.1 Caring for Water Resources 4.2 Water Purification 4.3 Composition of Water 4.4 Chemical Formula and Valence
	5	Chemical Equations	5.1 Law of Conservation of Mass 5.2 How to Write Chemical Equations correctly 5.3 Simple Calculations using Chemical Equations
	6	Carbon and Carbon Oxides	6.1 Diamond, Graphite, and C60 6.2 Research on Carbon Dioxide Production 6.3 Carbon Dioxide and Carbon Monoxide Experiment 2: Lab Preparation and Properties of Carbon Dioxide
	7	Fuels and their Utilization	7.1 Combustion and Fire Fighting 7.2 Rational Utilization and Development of Fuels Experiment 3: Conditions of Combustion
Two	8	Metals and Metallic Materials	8.1 Metallic Materials 8.2 Chemical Properties of Metals 8.3 Use and Conservation of Metal resources Experiment 4: Physical Properties and some Chemical Properties of Metals
	9	Solutions	9.1 Formation of Solutions 9.2 Solubility 9.3 Concentration of a Solution Experiment 5: Preparation of a Solution of Sodium Chloride with a Certain mass Fraction of Solute
	10	Acids and Bases	10.1 Common Acids and Bases 10.2 Neutralization Reactions of Acids and Bases Experiment 6: Chemical Properties of Acids and Bases Experiment 7: Test of Acidity and Alkalinity of Solutions
	11	Salt and Fertilizers	11.1 Common Salt in Life 11.2 Chemical Fertilizers Experiment 8: Removal of Insoluble Impurities from Crude Salt
	12	Chemistry & Life	12.1 Important Nutrients for Humans 12.2 Chemical Elements and Human Health 12.3 Organic Synthetic Materials

Source: http://www.dzkbw.com/books/rjb/chuzhong-huaxue/

Table 3
Information on the science textbooks in MICSS

Grade	Volume	Chapter	Title	Topics
8 (Form 2)	1	1	Water in Life	1.1 The Importance of Water 1.2 Common Properties of Water 1.3 Water Cycle on Earth 1.4 Composition of Water Molecules 1.5 Water for our Living
		3	Solubility of Water	3.1 Dispersion of Substances in Water 3.2 Dissolution and Dissolution of Substances 3.3 Concentration of Solution 3.4 Crystallization of Substances in Water
		5	Atmospheric Pollution and Protection	5.1 Earth's Coat——Atmosphere 5.2 Air Pollution 5.3 Prevention and Control of Atmospheric Pollution
	2	1	Model of Particles	1.1 Atomic Doctrine and Structure of Atoms 1.2 Ions
		2	Elements and Elemental Symbols	2.1 Elements and their Distribution 2.2 Elemental Symbols 2.3 Periodic Table of Elements 2.4 Active Elements in Fertilizers
		3	Composition and Chemical Formula of Substances	3.1 Classification of Substances 3.2 Separation of Mixture 3.3 Chemical Formulas 3.4 Valence 3.5 The Quantity Represented by the Element Symbol 3.6 Organics
		4	Air	4.1 Composition of Air 4.2 Nitrogen 4.3 Rare Gases
		5	Oxygen and Carbon Dioxide	5.1 Properties of Oxygen 5.2 Oxidation 5.3 Oxygen Production and Use 5.4 Properties of Carbon Dioxide 5.5 Production and Use of Carbon Dioxide 5.6 Combustion and Fire Extinguishing
		6	Chemical Reactions and the Law of Conservation of Mass	6.1 Law of Conservation of Mass 6.2 Chemical Equations 6.3 Heat-Absorbing and Exothermic Reactions
9 (Form 3)	1	1	Acid and Hydrogen	1.1 Change of Substance 1.2 Exploring the Properties of Acids 1.3 Several Common Types of Acids 1.4 Properties and Uses of Hydrogen 1.5 Hydrogen Production
		2	Salts and Bases	2.1 Exploring the Properties of Bases 2.2 Several Common Bases 2.3 Neutralization Reaction 2.4 Common Salt

Table 3 *(continue)*

Grade	Volume	Chapter	Title	Topics
		3	Metals and Non-Metals	3.1 Physical Properties of Metals and Non-Metals 3.2 Reaction of Metals and Non-Metals 3.3 Reactive Order of Metals 3.4 Corrosion and Rust Prevention of Metals 3.5 Basic types of Chemical Reactions
		4	Development and Utilization of the Earth's Mineral Resources	4.1 Forms of Mineral Presence 4.2 Identification of Minerals 4.3 Properties and Applications of Silicon Compounds 4.4 Properties and Uses of Calcium Compounds 4.5 Utilization of Mineral Resources
	2	9	Sustainable Use of Earth's Resources	9.1 Human use of Substances 9.2 The Various Resources on Earth 9.3 Water Resources 9.4 Purification of Drinking Water 9.5 Wastewater and its Treatment 9.6 Biological Resources
		10	Sustainable Use of Energy	10.1 Energy 10.2 Renewable and Non-renewable Energy 10.3 Energy Saving

Source: http://smchpd.synology.me/my/

met the requirements and purpose of the study, the authors summarized their design ideas, which were presented in Figure 1. The PEP chemistry textbooks have been arranged using an inductive approach, beginning with examining and learning from a specific to a more general arrangement. For instance, the PEP curriculum starts with an introduction to the air, the composition of matter, and chemical equations. Then it moves towards a broader perspective, with topics such as acids and bases, salt fertilizers, and chemistry and life. In such an approach, students are exposed to the fundamental concepts of chemistry, such as understanding particles (atoms, molecules, and ions), and then progress toward the interaction between particles and the writing of chemical equations. Chemistry concepts then examine how they may be applied to different areas, such as industry, health, and daily life applications. Through this, students are expected to learn and apply chemistry concepts to various areas. Similarly, the curriculum in MICSS has also been arranged in almost the same pattern as the PEP curriculum.

The MICSS chemistry components also commence with the more fundamental chemistry concepts, such as the model of particles, elements, and their symbols. The chemistry sections later proceed to a more general application component, for instance, the development, and utilization of earth minerals, sustainable use of earth's resources, and sustainable energy.
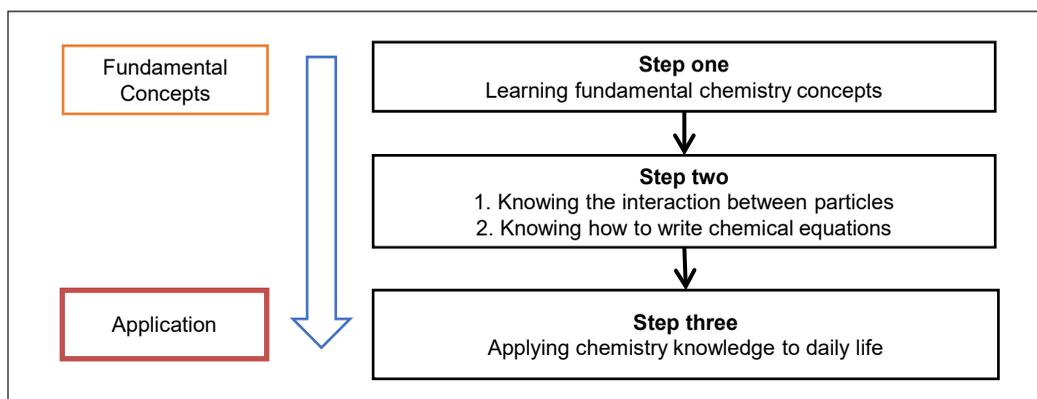
Figure 1. The design of PEP and MICSS textbooks

The chemistry concepts in MICSS are arranged so that students are introduced to the fundamental concepts that serve as the foundation to help them understand the basic concepts of chemistry. It later progresses to a broader spectrum, where students need to relate the fundamental concepts learned in the earlier topics and apply them to different aspects of life, in addition to daily life application. Such an inductive approach in the MICSS chemistry curriculum provides a platform for students to understand fundamentally and master chemistry knowledge and further enlarge the scope of chemistry in various fields that directly connect with the chemistry concepts previously learned. It not only provides the students with opportunities to understand chemistry concepts but also raises their awareness that chemistry is an essential component of their lives.

Juxtaposition and Comparison

At this stage, two chemistry curriculums were compared to determine their similarities and differences in the content studied. Since both curricula use Mandarin Chinese as the medium of instruction, it was believed that this comparison could provide insightful information on how different Chinese communities constructed their lower secondary level science curriculum, particularly for chemistry. Based on the analysis of the learning contents, a small number of chapters appear to be similar for both chemistry textbooks. Table 4 presents similar topics included in both the PEP and MICSS curriculums.

Although the chemistry contents in both textbooks are similar, the sequence of introducing the various chemistry concepts is different. For instance, the topic "Air" is introduced at the beginning of Volume I in the PEP Grade 9 chemistry textbook; however, the introduction of the topic of "Air" is only included in Volume II of the MICSS Form 2 (Grade 8) textbook. Such differences in the content arrangement can be found throughout the PEP and MICSS curriculums. Based on the analysis of the textbooks, it was found that content also varies within similar topics. For example,

Table 4
Similar topics in the PEP textbook and MICSS textbook

PEP	MICSS
The air around us	Air Oxygen and carbon dioxide
The mystery of the composition of matter	Model of particles
Water in Nature	Water in life Solubility of water
Chemical equations	Composition and chemical formula of substances Chemical reactions and the law of conversion of mass
Carbon and carbon dioxide	Oxygen and carbon dioxide
Acid and bases, Salt fertilizer	Acid and hydrogen, Salt and bases
Metal and metallic materials	Metals and non-metals

in the PEP textbook, "Carbon and Carbon Dioxide" is integrated into a similar topic, where elements such as diamond, graphite, C60, the production of carbon dioxide gas, and the concepts of carbon dioxide and carbon monoxide are covered. However, in the MICSS textbook, the concept of "Carbon Dioxide" is included together with "Oxygen," and "the concept of Carbon" is entirely excluded from the curriculum. Similar trends are found in several other topics: acids and bases, salts, and metal and non-metal, to name a few.

During analysis, some chemistry content contained within the two textbooks was found to be entirely different, primarily related to content on applying chemistry concepts to Nature. When investigating PEP textbooks, it was discovered that topics such as (I) Enter the world of chemistry, (II) Fuels and their utilization, (III) Solutions, and (IV) Chemistry and Life were covered in the PEP curriculum, but not in the MICSS curriculum. In the MICSS textbook, "Entering the World of Chemistry" is not taught explicitly, which seems to be

mainly due to the nature of the curriculum arrangement. In MICSS, chemistry concepts are integrated and introduced into all study grades for lower secondary students. In other words, the introductory concepts have already been covered in the introduction of science in Form 1 (Grade 7). The PEP curriculum emphasizes the interaction between humans and chemistry, for instance, nutrients for humans, chemical elements and human health, and organic synthetic materials. These concepts are closely related to daily human life and difficult to separate. The symbiotic relationship between chemistry and humans has long existed, with humans relying heavily on chemistry to improve their lifestyles in modern society. Meanwhile, upon investigating the MICSS textbook, the focus was on chemistry concepts related to Nature, the environment, and sustainability. The topics included in the MICSS curriculum are (1) Atmospheric Pollution and Protection, (2) Development and Utilization of the Earth's Mineral Resources, (3) Sustainable Use of Earth's Resources, and (4) Sustainable Use

of Energy. Although the MICSS curriculum focuses primarily on the interaction of chemistry and Nature, upon closer examination of the content introduced in the textbook, the main underlying concepts still focus on the interaction between humans and chemistry.

DISCUSSION

A chemistry textbook is an official document for school use and is considered an essential resource for students and teachers (Chiappetta & Fillman, 2007; Österlund et al., 2010). It aids teachers in preparing their classroom instruction and acts as a reference, which meets curriculum standards, for students studying chemistry. As a result, it can be said that the textbook may be students' primary source of chemistry knowledge and acts as a guide in their acquisition of chemistry knowledge.

Chemistry is a subject that contains numerous abstract concepts that require students to gain mastery in three different stages. In the first stage, students are expected to understand that chemical phenomena can be observed and symbolized in their daily lives at the macro-level of learning. In the second stage, students are required to understand what is actually in everyday life but is too small to be seen at the submicroscopic level of learning. In the third stage, students are urged to recognize that regardless of whether things can be observed, they all possess their symbols and that memorizing symbols is also important for enhancing their chemical learning efficacy (Treagust et al., 2003). Therefore,

it is suggested that students first understand the concepts at the macroscopic level and further enhance their understanding of them through microscopic and symbolic explanations found within textbooks during the learning process (Chen et al., 2019). With regard to this, it was discovered that both textbooks in this study comprehensively address the macroscopic, microscopic, and symbolic representation, which are often emphasized in the teaching and learning of chemistry (Johnstone, 1991). More specifically, because the concept learning arrangement from microscopic to macroscopic often causes students to struggle with conceptualizing chemistry concepts and their application, it is critical for chemistry textbooks, particularly lower secondary level chemistry textbooks, to arrange their contents from fundamental concepts to more abstract ones.

This study agrees with the conclusions reached by Rusek and Vojíř (2019) and Vojíř and Rusek (2021), which maintain that textbook content needs to be organized in accordance with the notion of moving from the concrete to the abstract, which may not only alleviate the difficulty students encounter in comprehending chemistry concepts, but may also pique students' interest in continuing their chemistry learning journey in their upper-secondary level education. It seems that regardless of whether the chemistry textbook used is published by PEP or used by MICSS, the content arrangement of the chemistry textbook does serve to support the development of chemistry knowledge

mastery, interest, and motivation to learn chemistry at lower secondary level students; however, the PEP chemistry textbook version is more clearly organized than the MICSS textbook.

Textbooks often reflect a country's dominant ideology (The Chinese emphasis on notions of collectivism and cooperation), identity, and areas requiring particular attention (Environmental Protection, Healthy Living). On that note, chemistry education, specifically chemistry textbooks, may differ between countries, cultures, geographical areas, and instructional language (Mahaffy, 2011). This phenomenon may be reflected through the introduction of specific chemistry content in textbooks, and this is one of the reasons that the Dong Zong curriculum team regards the science textbook published by Zhejiang Education Publishing Group as their reference for designing science textbooks for lower secondary school students in MICSSs. Furthermore, the decontextualization of chemistry content is common in most textbooks, and this situation has also been highlighted by Sjostrom and Talanquer (2014). The introduction of topics, such as fuels and their utilization, chemistry, and life, atmospheric pollution and protection, development and utilization of the earth's mineral resources, sustainable use of earth's resources, and sustainable use of energy, is introduced in the curriculum. Such topics may assist students in linking what is happening in their community to the chemistry concepts they have learned.

It may not only enhance students' conceptual understanding but also raise their awareness of real-world issues and how they, as students, may become involved. Chen et al. (2019) also mention that the overall discipline structure is fundamental in outlining chemistry textbook content. This study consistently concluded that the content of a textbook should be arranged in such a way that it primarily focuses on the fundamental, theoretical, and abstract concepts that represent the macroscopic, microscopic, and symbolic levels. Such a conventional arrangement has tended to make chemistry study highly abstract, dry, and factually based. Consequently, students may have difficulty relating the chemistry concepts learned from their textbooks to real-life situations, regardless of whether they use the PEP version or the textbooks supplied by MICSS.

The study of chemistry involves understanding natural phenomena occurring in Nature, and students need to be able to form connections to explain these phenomena scientifically. However, this study determined that the apparent lack of relevance to students of the PEP chemistry textbook and the textbook version employed at MICSS could potentially lead to low levels of creativity among students in terms of their application of scientific concepts to the solution of problems they encounter in daily life. This finding is consistent with Eilks and Hofstein (2013), who also state that scientific learning should start from a context familiar and closely connected to the learners' previous experience or areas of personal interest to them and that this may result in improved academic performance in science. Therefore, a textbook's

contextualization of concepts and examples is critical. It may help motivate students to pursue knowledge, as they are more likely to view it as relevant and applicable to their lives. Although the contextual concepts are essential and have been introduced in both textbooks, further inclusion is required, as compared to the other conventional concepts within the textbooks, these features only minimally.

The application of chemistry concepts to daily life and industrial activity has been the cause of much debate, particularly when it is linked to the environment and human health. Overuse of chemicals, improper disposal of used industrial chemical waste, unclean and toxic drinking water, and the usage of herbicides and pesticides are controversial issues within the scope of chemistry. These environmental and sustainability issues significantly impact human life, flora, fauna, and Nature in general. The results of these issues include long-term negative effects, such as serious health issues and the destruction of the planet's resources. These are likely to continue unless major action is undertaken to address them. However, there is little content related to these issues in either of these two chemistry textbooks, and the existing content is only at the level of "what," namely, to help students understand what pollutes the environment, leaving little room for students to think about "why" and "how."

Thus, it is high time to integrate education on sustainability within the chemistry curriculum in the textbooks rather than merely presenting chemistry concepts.

For instance, some of the 21st-century chemistry concepts, such as green chemistry, green technology, Nanochemistry, and socio-scientific issues, could be introduced into the curriculum to encourage students to think creatively and to make judgments and decisions based on the chemistry knowledge and scientific facts they learn from the curriculum. 21st-century chemistry concepts not only combine chemistry and society but may also promote higher-order thinking in learners and foster the development of global citizenship. It is apparent that content on sustainability and environmental issues is still inadequate in the two chemistry textbook versions selected for this study. Integrating content related to sustainability and environmental issues into secondary-level chemistry textbooks should be a priority to enhance the learning experience of secondary-level students.

CONCLUSION

In this study, the authors intended to study the content of chemistry textbooks (Particularly what students may learn from them) from two different Chinese communities that use the same language of instruction. Although there was little research related to chemistry textbook comparison (Chen et al., 2019; Eilks & Chen, 2019), the focus was on upper-secondary-level chemistry. In other words, the study did not include comparative examinations of chemistry textbooks from the standpoint of lower secondary science structural design. As a result, the findings of this study may provide some insight and reference for future scholars interested in

understanding chemistry textbook content material based on two different cultures, specifically the two different Chinese communities of China and Malaysia.

Although both samples of this study were Asian with similar cultures and employed the same language of instruction, clear differences were still discovered. The main purpose of this study was not to assess the quality of the textbooks or to identify which of the textbooks most effectively presented chemistry knowledge to lower secondary school students. The aim was to exemplify how chemistry content is presented in different national contexts and determine the most important and relevant concepts students need to learn. It was the position of the authors that there was no "right" or "wrong" when determining which concepts to include in chemistry textbooks, providing that the content could meet the nation's requirements in terms of student learning outcomes, knowledge construction, and human capital development.

The analysis and comparison of chemistry textbooks in this study were limited to two Chinese communities and only included lower secondary school levels at a certain grade level (Grade 9 in China; Form 2 and 3 in MICSS). Furthermore, the data obtained in this study only addressed a single aspect of the textbook, i.e., how the chemistry curriculum was arranged within the textbook. Hence, how the textbook was used in the teaching and learning process did not fall within the scope of this study. Further research is needed to determine how textbooks are used by chemistry teachers in the teaching of chemistry concepts to lower

secondary-level students. Topical analysis of certain chemistry concepts might be relevant to determine how certain concepts are taught from the perspective of different countries. It also creates opportunities for further study into how lower secondary chemistry textbooks have evolved and developed over time to cater to various countries' needs for advancement in science and technology. Thus, analyzing the textbook currently used in both countries has provided a timely overview of how the chemistry curriculum is currently organized. It also points to the need for regular review of textbook content after the new curriculum is reformed and implemented.

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Trustworthiness Statement

The data were collected by documentation and analyzed by the comparative method defined by Bereday (1967), and all the data were obtained from the official website designated by the in-service chemistry teacher. The results of this paper were double-checked by the two authors and confirmed by the in-service chemistry teachers (member checking).

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SOCIAL SCIENCES & HUMANITIES

Rasch Analysis for Standards-Setting Appraisal of Competency Level-Based Performance on the Part of Instructors in Higher Education

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ABSTRACT

This research aimed to examine higher education instructors' performance assessment in determining the cut-off point by setting criteria on the Wright map from big data. It is followed by designing performance assessment standards and assessing their quality. A total of 603 instructors from a Thai public university were selected as participants. The researchers employed a design-based research method encompassing four phases: analyzing the results of the performance assessment, formulating the standards-setting appraisal, applying trial and quality inspection, and improving the standards-setting appraisal approach. Data were analyzed using the Rasch model and the Maximum Likelihood Estimation method. The results of the determination of the cut-off point in terms of assessing instructors' performance indicated that there are four cut-off points in ascending order, specifically, -11.67, -2.68, 4.59, and 9.76. The standards-setting appraisal showed that the assessment criteria consisted of five score ranges converted from estimation competency parameters into the scale and raw scores, respectively. Even though the standards-setting appraisal was determined, the researchers found that the transition point with regard to determination will be accurate and consistent in terms of those instructors

who are at a moderate to high competency level and not suitable for evaluating those at a low competency level. The standards-setting appraisal approach is relevant for use as a criterion for recruiting and selecting higher education instructors. It can also support the development of sustainable human capital. It implies that instructors must possess high core competencies to match the high demand for quality teaching.

Keywords: Core competencies, higher education instructors, performance assessment, standards-setting appraisal

INTRODUCTION

Higher education instructors represent a specialized group of employees and the intellectual elite of a nation because they are a model of erudition and permanent progress that can be used for the benefit of society as a whole (Blašková et al., 2014; Nongna et al., 2021). It is supported by Tan et al. (2019), who highlighted the challenge currently faced by higher education institutions with regard to improving instructors' teaching and other relevant core competencies to enhance student's learning process. Therefore, the competency level-based performance of this group means that they have to accept many responsibilities that they will find very demanding in terms of their mental conditions and personal core competencies (Lohman, 2021). Turturean (2013) identified the core competencies of higher education instructors as a combination of knowledge, skills, attitudes, and behavior required for effective performance in the academic context. Following this line of reasoning,

determining the desirable profile of a higher education instructor means that we must attempt to identify the designed requirements, characteristics, attributes, and elements that contribute to his or her knowledge, skills, and experience with which to assist his or her students. These should be the core competencies model or used to identify a standard (Aliasghar et al., 2017). Each higher education instructor should follow this core competencies model in terms of behaviors and performance with regard to his or her work (Blašková & Blaško, 2012).

Selvi (2010) listed nine core competencies as they apply to a higher education instructor: field competencies, research competencies, curriculum competencies, lifelong learning competencies, socio-cultural competencies, emotional competencies, communication competencies, information and communication technologies competencies, and environmental competencies. Field competencies are strictly related to the content knowledge of their teaching expertise. Research competencies encompass the competencies with regard to research methods and techniques, as well as designing and conducting research. Curriculum competencies include curriculum development competencies and curriculum implementation competencies. Lifelong learning competencies comprise the abilities with learning to learn and instructors' responsibilities for their professional development. Socio-cultural competencies relate to knowledge about the socio-cultural background of students and instructors, local, national, and international

values, democracy and human rights issues, team and collaborative work with others, and social studies that promote learning. Emotional competencies refer to instructors' and students' values, morals, beliefs, attitudes, anxieties, motivation, and empathy. Communication competencies comprise communication models, interactions among instructors, students, the social environment, and learning topics. Information and communication technologies (ICT) competencies are based on tools and technical equipment for approaching, searching, and transferring knowledge. Environmental competencies mean competencies in terms of ecological and environmental safety.

Prasetio et al. (2017) studied the relationship between higher education instructors' professional competency and the impact on student's academic performance. According to Prasetio et al., higher education instructors should have a wide and deep knowledge of the courses they teach and possess the practical experience to make their lessons attractive. Therefore, higher education instructors are expected to provide high-quality education to support their students in obtaining jobs in an increasingly competitive environment when they graduate. It is seen as a key indicator of job performance. Following this line of reasoning, instructors' core competencies are important factors that can contribute to improving the cognitive abilities and mental attitudes of higher education graduates. However, their research showed no significant relationship between instructors' core competencies and students' academic performance in the School of Economics and Business at Telkom University. Although instructors' core competencies do not directly impact students' academic achievement, their core competencies and positive behavior will certainly encourage new insights and capabilities on the part of their students (Prasetio et al., 2017).

The teaching workload of higher education institutions is not limited to their regular teaching activities, such as giving lectures, preparing lesson plans, evaluating scripts, and attending training programs and conferences. In addition, they have to be involved in non-academic activities such as proctoring, coordinating various higher education institution activities, and taking on various administrative posts (Hosain, 2016; Islam et al., 2019). Moreover, higher education instructors' work performance is based on their dedication to the job, success in research and development, student achievement, and active communication involving international collaboration and networking (Le, 2021; Odero & Makori, 2018). As such, we cannot overlook the potential effect of a standards-setting appraisal on the effectiveness of the strategic decision-making process with regard to instructors' performance. Kurtulmus et al. (2016) stated that one of the significant elements of effective decision-making is to be evidence-based on multiple components of the standard-setting appraisal.

According to many past researchers (Laei et al., 2014; Le, 2021), performance

appraisal consists of a system of measuring and assessing the effectiveness of an instructor's characteristics, behaviors, career gains, and level of interest in determining their current performance level. Moreover, higher education institutions must keep track of various performance indicators on the part of their instructors due to the high awareness of the need for quality audits for personal improvement and stakeholder satisfaction (Aliasghar et al., 2017; Alkhafaji, 2013). Gómez and Valdés (2019) found that instructors' performance is assessed by higher education institutions to favor teacher learning over the practice to improve it. Therefore, the analysis and establishment of standards-setting appraisal are important, leading to the need to create a proposal for the professional development of instructors and improvement in education quality (Aliasghar et al., 2017; Gómez & Valdés, 2019; Islam et al., 2019; Prasetio et al., 2017).

Tan et al. (2019) investigated how higher education students in Malaysia evaluated their instructors based on non-instructional factors, namely physical attractiveness and psychological factors, which could affect students' perceptions regarding their instructors' performance. Their results indicated that students' degree of confidence and level of acceptance are the mediators of the relationship between instructors' teaching competencies and their performance assessment. Aliasghar et al. (2017) and Altbach et al. (2009) emphasized the importance of standards-setting appraisal as common practice for higher education

institutions to recognize instructors' strengths and weaknesses. As a result, a standards-setting appraisal system should include classroom settings, instructors, and students' context of the syllabus, learning activities, learning outcomes, and any efforts to enhance teaching performance (Aliasghar et al., 2017; Altbach et al., 2009).

Gómez and Valdés (2019) critically reviewed the methods used to evaluate higher education instructors' job performance. They also reviewed the different appraisal models to find discrepancies between objectives and practices. Their result showed a poor relationship between the appraisal model and what was done. Their research into higher education institutions indicated that the focus of performance appraisal is improvement in practice. In addition, they found that most of the higher education institutions used questionnaires as an instrument to evaluate instructors' work performance. However, this appraisal method failed to evaluate instructors' teaching performance even though it is an accurate measurement in the best-case scenario. Therefore, they proposed a constructivist model that encourages the changes required through reflection. It, in turn, results from a review in the form of self-evaluation, hetero-evaluation, and co-evaluation.

Laei et al. (2014) used a close-ended questionnaire with 25 Likert scale items and an open-ended questionnaire as instruments to investigate how to improve their performance and determine the competence that can be achieved from the

higher education instructors' perspective. A total of 114 full-time instructors from Kermanshah Azad University participated in the research. The results revealed that most instructors believed that the currently used job assessment method did not work properly to improve the instructors' level of education and research competencies at a 0.99% confidence level. Most instructors preferred the method of reporting scores relating to assessment as the most appropriate form of feedback for improving instruction quality. Even though their results indicated that the success level of the current method for assessing instructors' performance and identifying the consistency level of the instructors' performance with instructional standards was weak, with a 0.99% confidence level, the current plan was found successful in identifying instructors' performance in terms of professional, ethical standards.

Curzi et al. (2019) surveyed 865 employees to identify specific characteristics of performance appraisal that were more likely to be perceived as promoting individual innovation at work. These researchers utilized the process-based approach to human resource management proposed by Bowen and Ostroff (2004). They employed logit analysis to assess the correlation between data on performance appraisal systems and data on the effectiveness of performance appraisal as a promoter of innovative work behavior. Their research showed that formal performance appraisal is more likely to reduce the perception that performance appraisal promotes individual innovation and creativity at work than informal feedback. Moreover, they also found that a performance appraisal focused on the achievement of pre-set quantitative outcomes is more likely to positively affect innovative work behavior than a performance appraisal focused on pre-defined skills that employees exhibited while performing their work. They concluded that performance assessment should focus on the new competencies that the employees develop because the competency-based appraisal approach has a perceived positive impact and is even stronger than the result-oriented appraisal.

Lohman (2021) reviewed the recent literature that expresses the prominent arguments in research into student assessment of teaching. It is followed by a peer review of teaching and outlining essential performance appraisal and management principles. Those principles are then utilized to analyze representative faculty assessment policies and procedures and illuminate the weaknesses of traditional and recently amended teaching assessment approaches. Lohman's synthesis of past research revealed that behavioral assessment as part of standards-setting appraisal needs a well-constructed rating instrument. It implies that reliable and valid instruments are vital to assess the behavioral competencies of instructors (Caruth & Humphreys, 2008) but that it is particularly important to acknowledge the difficulty of measuring teaching performance and this difficulty is potentially reducing the emphasis on teaching in standards-setting appraisal approaches (Cardoso et al., 2015).

In general, instructor performance assessment in this research university comprises two major components, namely, 70% work achievement and 30% behavioral assessment (Khon Kaen University, 2015, Nongna et al., 2021). Instructor performance assessment mainly focuses on the operational competencies encompassing service mind, expertise, achievement motivation, teamwork, and integrity, as indicated in the guidelines published by the Thailand Civil Service Commission in 2011 (Office of the Higher Education Commission, 2018). Despite decades-old texts offering descriptions of, and guidance on, instructors' performance evaluation, well-established standards-setting appraisal measurement models have yet to be outlined systematically in higher education institutions to address concerns about instructors' core competencies. It requires a measurement model to reveal the full potential of human resources and to act as a tool to achieve a consistent evaluation of quality teaching (Lohman, 2021). Therefore, the researchers aimed to formulate and assess the quality of a standards-setting appraisal measurement model to address the gap and clarify how the measurement model can be utilized as a sound performance appraisal measurement model.

MATERIALS AND METHODS

Research Procedure

A design research method encompassing four phases was employed to develop and refine a standards-setting appraisal measurement model to advance the existing theory that can support and lead to a deepened understanding of competency level-based performance evaluation (Reeves, 2006; Vongvanich, 2020). It is because design-based research is often associated with conducting research in technology-enhanced assessing contexts and has been used in the broader field of research in education (Vongvanich, 2020).

Firstly, the researchers began investigating higher education instructors' performance assessment results from big data. Secondly, they used the performance assessment from the first phase to formulate the standards-setting appraisal of competency level-based performance for instructors in higher education institutions. Thirdly, the researchers tried out the formulated standards-setting appraisal of competency level-based performance for quality inspection. Finally, they reflected, revised, and improved the formulated standards-setting appraisal of competency level-based performance for instructors in the higher education institution. Figure 1 elucidates the research procedure.

Research Participants

The main data source was derived from a total of 603 instructors' performance assessment results from three clusters of educational programs, namely, science and technology, health sciences, and humanities and social sciences of a public university in Khon Kaen province, Thailand. In addition, key assessors' views were considered while researchers were formulating the standards-
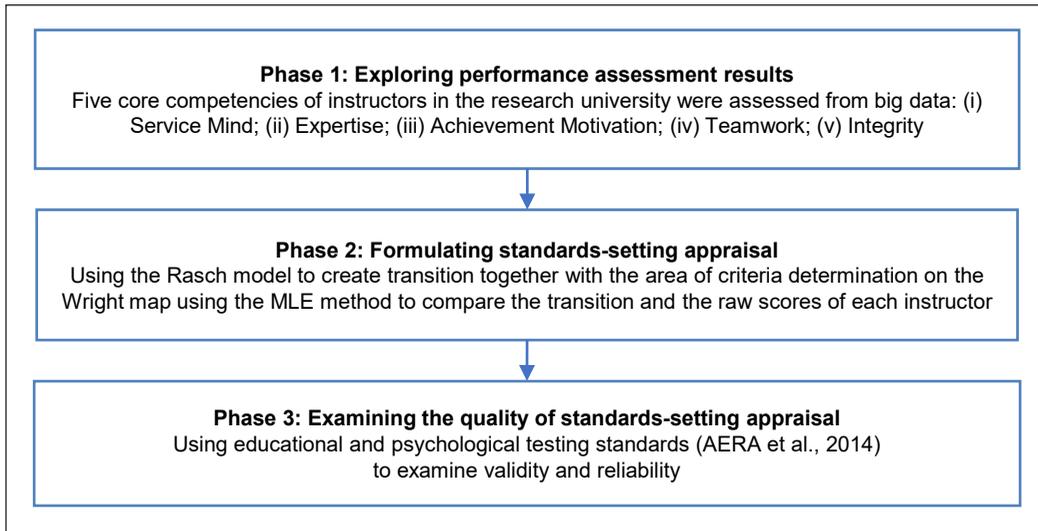
Figure 1. Research procedure

setting appraisal of competency level-based performance for instructors. They were the dean or associate dean from each cluster of educational programs, the director of human resources, and the research university's vice president for Education and Academic Services.

Research Tool

The researchers adopted an official performance appraisal form for civil servants in public higher education institutions from the Office of the Civil Service Commission (2009). The research tool is comprised of five core competencies being evaluated,

namely good service (Service Mind: SERV), accumulated expertise in a professional career (Expertise-EXP), achievement and motivation (ACH), teamwork (TW), and adhering to righteousness and ethics (Integrity-ING). These five core competencies are categorized into five competency levels in descending order and used as a rubric with descriptions. Table 1 shows an example of the Expertise-EXP performance assessment rubric. At the same time, Figure 2 illustrates the five core competencies included in the formulated standards-setting appraisal for higher education instructors' measurement model.
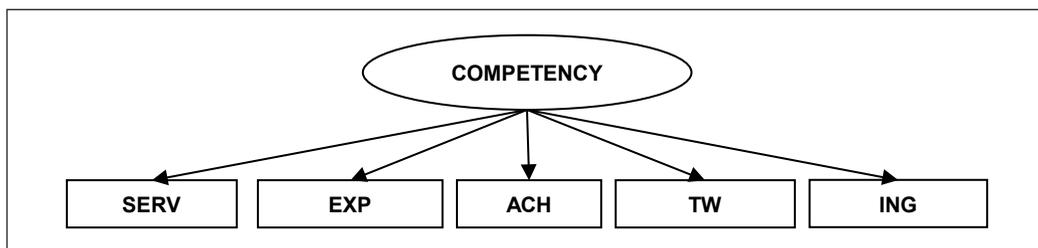

Figure 2. The formulated standards-setting appraisal for higher education instructor measurement model

Table 1
Example of the expertise-EXP performance assessment rubric

Core competency	Accumulated expertise in a professional career (Expertise–EXP)			
Competency definition	Accumulating knowledge and abilities through continuous learning, conducting research, and self-development until applying the learned knowledge and expertise to perform job tasks.			
Competency descriptions				
Level 0: Does not perform at all or unclearly displayed				
Level 1	Level 2	Level 3	Level 4	Level 5
Show interest and pursue new knowledge in their professional or related fields. 1.1 Interested in new knowledge. 1.2 Improve their knowledge and abilities. 1.3 Update new knowledge from various sources.	Demonstrate competency level 1 in their professional or related fields. 2.1 Well-versed in new knowledge that can affect their performance. 2.2 Aware of the cutting-edge technology trends and continuously related to their job tasks.	Demonstrate competency level 2 in their professional or related fields. 3.1 Ability to apply new knowledge. 3.2 Can solve problems by adopting their new knowledge to their job tasks.	Demonstrate competency level 3 deeply in their professional or related fields. 4.1 Have expertise in interdisciplinary subject matter and can apply knowledge in various applications. 4.2 Can apply their integrated knowledge to create a vision for future operations.	Demonstrate competency level 4 by giving support and emphasizing expertise. 5.1 Promoting expertise development through the organization of resources, tools, and equipment. 5.2 Administering new knowledge to perform job tasks continuously.
Criteria for performance evaluation (pass not less than 3 assessment criteria)				
CL1.1: Can perform job tasks without analyzing data and have been performed before.	CL2.1: Pass the assessment criteria of Level 1 and possess the three related behaviors.	CL3.1: Pass the assessment criteria of Level 2 and possess the three related behaviors.	CL4.1: Pass the assessment criteria of Level 3 and possess the three related behaviors.	CL5.1: Pass the assessment criteria of Level 4 and possess the three related behaviors.
CL1.2: Study for knowledge according to supervisor's order.	CL2.2: Follow the related knowledge and be responsible for improvements.	CL3.2: Participate in knowledge development to solve the team's problems.	CL4.2: Use expertise and experience for personnel development.	CL5.2: Promote competence and expertise development at various levels.
CL1.3: Focus on related knowledge but unable to apply the learned knowledge.	CL2.3: Use the related knowledge and apply it in their job tasks.	CL3.3: Presenting new projects beneficial to the job tasks and department.	CL4.3: The research results or innovations are useful for improving the work system.	CL5.3: Promote and support expertise development for personnel within the organization.
CL1.4: Can apply related knowledge to explain their job tasks.	CL2.4: Can apply related knowledge and methods of others to improve their job tasks.	CL3.4: Can apply related knowledge in preparing research for work development.	CL4.4: Being representative to overview the performance of the department.	CL5.4: Performing the knowledge and expertise and being an example of good practice to the department.

Table 1 *(continue)*

Criteria for performance evaluation (pass not less than 3 assessment criteria)				
CL1.5: Applying the new knowledge as recommended by the supervisor.	CL2.5: Self-development to become proficient in their professional career.	CL3.5: Present the research results and for them to be used by their supervisor to make decisions.	CL4.5: Being representative to present in internal and national seminars.	CL5.5: Performing knowledge development and developing guidelines for good performance within the department.

Data Collection and Data Analysis

The researchers utilized the instructors' performance assessment results from the big data with more than two scores using the Partial Credit Model to collect data for the initial phase. The Partial Credit Model is a way of comparing and calibrating items. In applying Rasch's model to instructor performance assessment, every item has an imagined location on the measured variable (Masters, 2005). The quality of the instructor performance assessment results was analyzed using the Rasch model analysis ACER Conquest 2.0 program (Wu et al., 2007). When test data conform to the Rasch model, the relative difficulties of two items can be estimated by using any group of people without regard to their abilities or other characteristics. Making multiple pairwise comparisons of this kind makes it possible to estimate the relative locations of several items on the measurement variable (Masters, 2005). In short, Rasch analysis is an approximation characterized as a logistic function by only considering the ability (θ) and the difficulty value.

On the other hand, Maximum Likelihood Estimation (MLE) was used in this research because it is a method for estimating the parameters of a probability distribution by maximizing a likelihood function so that under the presumed statistical model, the examined data is the most possible. According to Rossi (2018), the point in the parameter space that maximizes the likelihood function is called the MLE. The logic of maximum likelihood is instinctive and adaptable, and the method has become a dominant means of statistical inference (Ward & Ahlquist, 2018). Therefore, the main principle of MLE is that the examined data are generated by randomization through selection from the population with a distribution based on one specific parameter value. As a result, the researchers could maximize the likelihood of being able to select such samples randomly.

The researchers validated the quality of the formulated standards-setting appraisal measurement model by considering its validity and reliability. The quality of the measurement model was tested using educational and psychological testing standards (American Educational Research Association [AERA] et al., 2014). The first evidence of validity is that the test content coverage must be comprehensively included with regard to all the core competencies

of higher education instructors and the levels of such competency. In addition, the researchers continued to examine the reliability of the measurement model using the Expected-A-Posteriori and Separation Reliability (EAP/PV) which is a measurement of the consistency of the Rasch analysis and is equal to Cronbach's alpha in terms of precision. The method of analysis was for this research because the researchers intended to examine not only the validity and suitability of the standards-setting appraisal measurement model in terms of whether it met the acceptable criteria according to the testing standards but also to identify the evidence for the validity and reliability of the model. Finally, the threshold values were used to estimate the quality of the model.

RESULTS AND DISCUSSION

Results of Determination of the Cut-Off Point in Assessing Instructors' Competency Level

The average performance threshold of each core competency was used to formulate a standards-setting appraisal measurement model. The researchers formulated the assessment standards by calculating the transition and considering the criteria area on the Wright map for each core competency, which was determined by the average threshold at the same level for the five core competencies. Table 2 demonstrates the results of calculating the transition in each core competency to determine the effectiveness of the standards-setting appraisal measurement model.

The results of the determination of the cut-off point in assessing the core competencies of instructors' performance assessment from the big data revealed that the transition in performance assessment could be divided using four cut-off points to create five levels in ascending order, specifically -11.67, -2.68, 4.59, and 9.76. Figure 3 shows the use of the Wright map to determine the transition point by setting the criteria area so that researchers can compare instructors and items, to understand better how appropriately the performance assessment approach measured the core competencies (Lunz, 2010). It leads to formulating the standards-setting appraisal in the second phase.

Table 2

Results of determination of the cut-off point in assessing core competencies of instructors

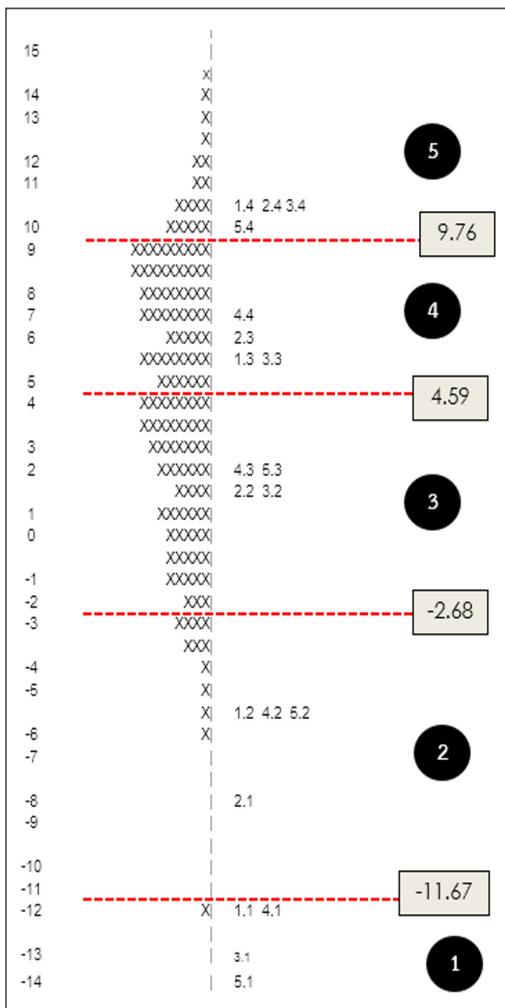| Core competency	Threshold			
	1	2	3	4
Service Mind	-11.71	-5.33	5.90	10.65
Expertise	-7.98	1.54	6.17	10.75
Achievement Motivation	-13.34	1.55	5.91	10.41
Teamwork	-11.47	-5.54	2.51	7.29
Integrity	-13.87	-5.60	2.48	9.68
Mean of thresholds for standards-setting	-11.67	-2.68	4.59	9.76

Figure 3. Determining the transition point by setting area criteria on the Wright map

When the researchers considered the transition point, it was found that the descending order of the average threshold was reasonable. It is important to note that the nature of the transition can be determined by considering the average threshold for each competency level over a wide range. Typically, in the latent trait (θ) parameter estimation, the normal range is -3 to +3 (Baker & Kim, 2017). Conceptually,

some researchers have set the range θ from -4 to +4 (Embretson & Reise, 2000; Junpeng et al., 2020). However, in this research, the distribution range θ went from -0.85 to 13.24 with a threshold of -13.87 to 10.75, as shown in Table 2. When a comparison is made between thresholds at Level 1, the five core competencies assessment items are in the very low range of -13.89 to -7.58. Therefore, when calculating the transition using the mean of the five thresholds, the threshold value is -13.89 to -7.58. Nevertheless, it was found that there was a low point of -11.67 on the left-hand side of the Wright map. It was found that there was no instructor with parameters lower than -11.67, which reflected the transition points in Level 1. The result showed no instructors at that level because the actual θ value started at -0.85. It can be concluded that instructors' competency levels can be assessed in real-world contexts should the transition be greater than or equal to -0.85.

Furthermore, the results of the assessment criteria indicated that there are five levels of instructors' performance. Therefore, instructors with the lowest competency level will be terminated if they do not improve their performance. It is because instructors in the research university are required to improve their job performance in accordance with the criteria set by the government of Thailand. In other words, instructors are considered an asset for higher education and a driving force of the learning process, as well as key elements in determining the success of higher education (Anwar et al., 2017).

Results of Determination of Instructors' Performance Assessment Standards

The researchers continued to design the standards-setting appraisal approach for instructors' performance based on the assessment criteria results from the first phase. Hence, the researchers identified five score ranges converted from estimation competency parameters into the scale and raw scores. The results showed that instructors with the lowest competency level need to improve their performance urgently, given that they revealed a performance level lower than -11.67 or with a scale score lower than -66.70. Subsequently, the researchers used this range to compare with the raw score from 0 to 1 point. Likewise, if the instructor has a score of θ higher than 9.760 or has a scale score higher than 147.60, the instructor is considered to possess the highest competency level. In other words, the raw scores range from 18 to 20 points. It can be concluded that the highest competency level is the best practice and a role model for other instructors. Table 3 details the determination of instructors' performance assessment standards.

The above results show that five intervals correspond to the scale and raw score range while the researchers formulated the standards-setting appraisal measurement model. As a result, the formulated model successfully indicates the real context of 603 instructors from three clusters of educational programs. It provides an overview of the instructors' competence in the research of higher education institutions (Figure 4). The overall results revealed that most instructors

Table 3

Results of determination of performance assessment standards

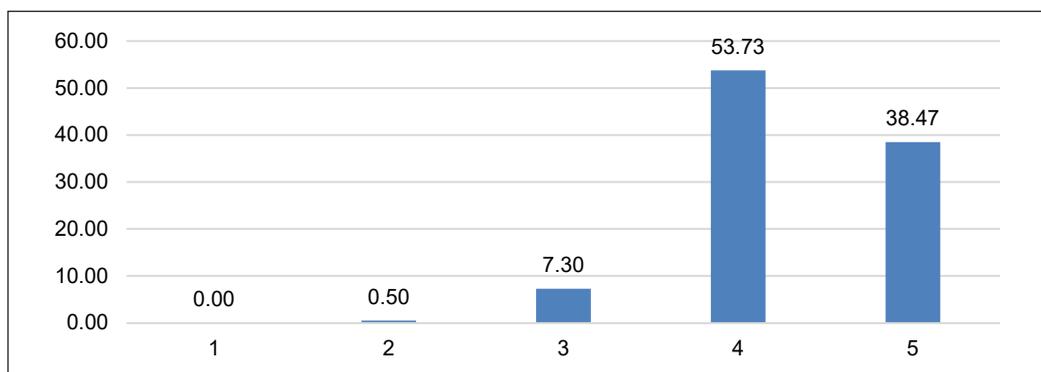| Competency level	Transition θ	θ range	Scale scores	Raw scores
5	9.76	>9.76	>147.60	18-20
4	4.59	4.59<θ≤9.76	95.90 – 147.60	13-17
3	-2.68	-2.68<θ≤4.59	23.20 – 95.80	8-12
2	-11.67	-11.67<θ≤-2.68	-66.70 – 23.10	2-7
1		<-11.67	<-66.70	0-1

Figure 4. Overall results of 603 instructors' performance assessment

(53.73%) are at Level 4. It is followed by 38.47% of instructors who are at Level 5. Only 7.80% of the 603 instructors have a competence level at Level 3 or lower.

Figure 5 to Figure 7 elucidate the situation specifically in terms of the three clusters, namely, science and technology, health sciences, and humanities and social sciences. The results indicate that instructors from the science and technology cluster possess more outstanding competency levels compared to the other two clusters.

Figure 5 shows that most instructors from science and technology (74.36%) are at Level 5 (Figure 5), while the majority of instructors from humanities and social sciences (64.36%) and health sciences (53.78%) are at Level 4 (Figures 6 and 7). It reflects the current trend in higher education whereby academics in science and technology have made significant contributions. For example, science has given an immense body of knowledge, while technology has made education easier
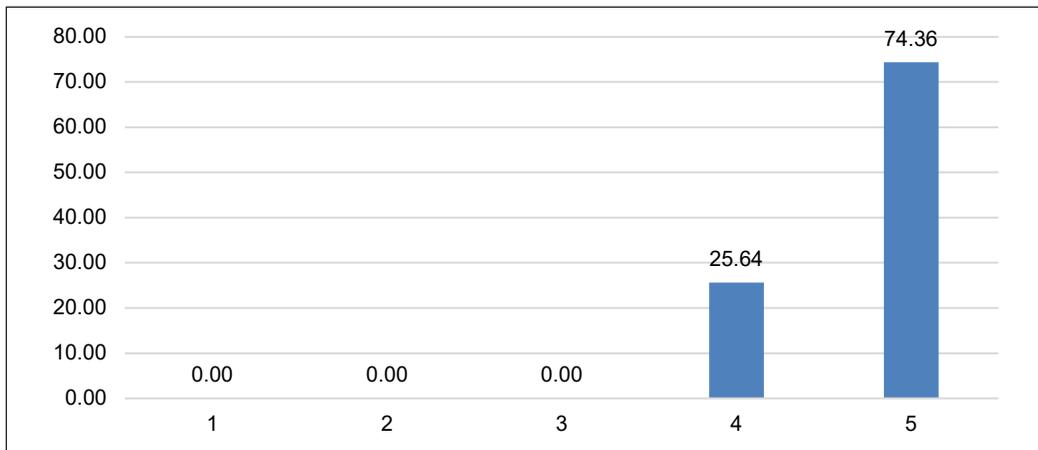

Figure 5. Performance assessment results of instructors from the Science and Technology cluster
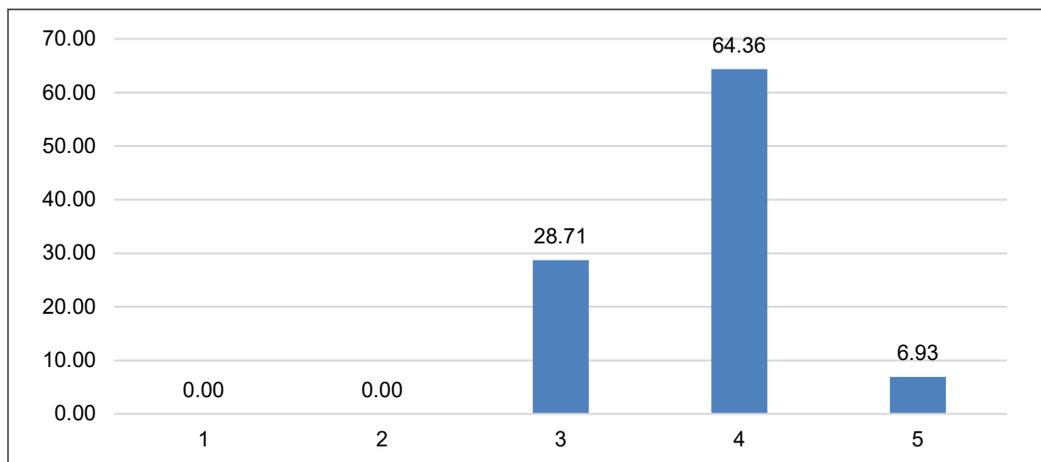

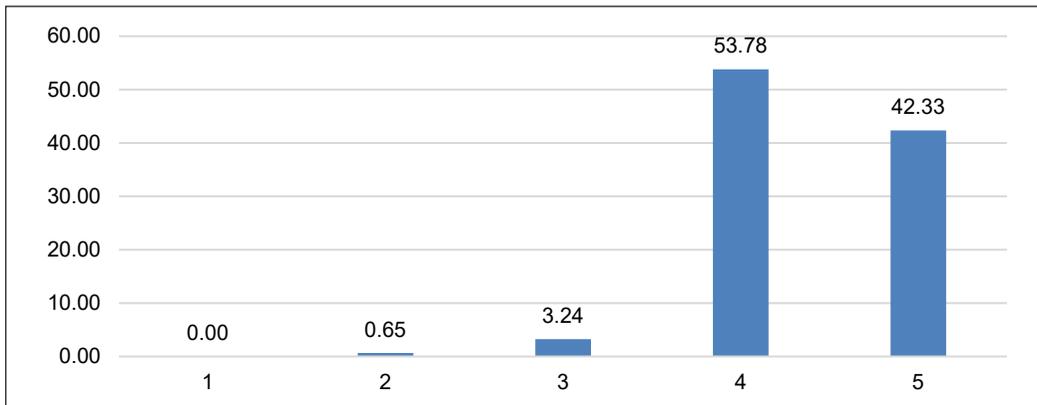*Figure 6*. Performance assessment results of instructors from the Humanities and Social Sciences cluster

Figure 7. Performance assessment results of instructors from the Health Sciences cluster

through smart classes, multimedia devices, e-libraries, and e-books.

Results of Quality Inspection of Standards-Setting Appraisal Measurement Model

Results of Validity Evidence. The internal structural validity of the standards-setting appraisal measurement model was determined using a Wright map with a cascaded manner of scoring according to the milestone grading guidelines, from lowest to highest level (Likelihood Ratio Chi-Squared, $G^2 = 4295.31$, Akaike Information Criterion, AIC = 4337.31, Bayesian Information Criterion, BIC = 4489.27). In addition, the standards-setting appraisal measurement model is accurate and consistent in assessing instructors who possess moderate and high competency levels because all items of the measurement model have covered all the necessary competency levels. Moreover, the researchers considered whether the transition should be collapsed in terms of the assessment standards at Levels 1 and 2 or whether the position of the transition

point should be modified by adjusting the assessment level from five to four levels.

The internal structural integrity check results showed that the standards-setting appraisal measurement model is not suitable for annual assessment for salary advancement or academic position promotion. Rather, it is more suitable for use as a criterion for evaluating individual work performance. As a result, this measurement model can be used for actual assessment after actions such as collapsing Levels 1 and 2, modifying the expected value, and defining the key indicators of the expected performance level.

The final validity evidence was found when there were significant correlations between the formulated assessment standards and the external criteria by using the actual assessment work achievement in the real context through their supervisors. Table 4 shows significant correlations between the Wright map score and the actual assessments because the r values ranged from 0.21 to 0.55 at a significant level of 0.01. It implies that most instructors' core

Table 4

Results of correlation between formulated standards assessment and actual assessment

Clusters	Correlations between Wright map scores and work achievement scores by their supervisors
Humanities and Social Sciences	0.55**
Science and Technology	0.47**
Health Sciences	0.21**
Overall	0.27**

competencies are in the same direction as the standards-setting appraisal measurement model. This result suggests that Level 1 and Level 2 can be collapsed into one, thus having four competency levels.

Results of Reliability Evidence. The researchers began by using the standard deviation graph SEM (standard error of measurement) to assess the reliability of the standards-setting appraisal measurement model. The results showed that the standards-

setting appraisal measurement model has the same characteristics as those obtained from the actual assessments, as illustrated in Figure 8.

The results suggest that the standards-setting appraisal measurement model is more appropriate for instructors with moderate to high competency levels than those with low ones. It is because the lowest competency level of instructors showed the highest error in terms of SEM value. Table 5 demonstrates that the mean score at a high
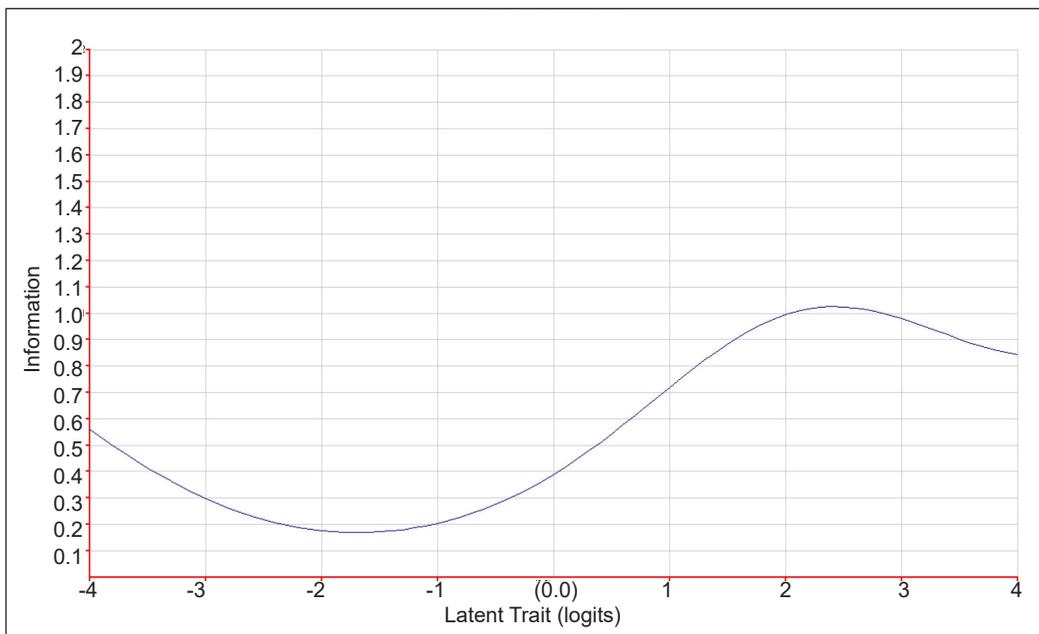

Figure 8. Test information function to reflect the consistency of standards-setting appraisal measurement model

competency level is 4.75, with a θ value of -0.85 to 13.24. It implies that instructors have a wide range of competencies and tend to perform well. Moreover, the SEM value indicated that the errors in estimating instructors' competency levels were between 0.24 and 1.75, considered a small discrepancy when the measurement model was applied to instructors with moderate to high competency levels. On the other hand, the SEM value was high, or there was a lack of consistency in the estimation when instructors possess a low level of competence. It can be concluded that the standards-setting appraisal measurement model is accurate and consistent with those instructors who possess moderate to high competency levels. Table 5 shows the details of the SEM results.

Table 5
Results of basic values of SEM

Basic statistical value	θ	SEM
Mean score	4.57	1.16
Standard deviation	4.15	0.26
Maximum	13.24	1.75
Minimum	-0.85	0.24

The EAP/PV and separate reliability values were found to be 0.94 and 0.99, respectively, indicating that it is of high quality and can be used to classify the competency levels of performance assessment separately. Finally, researchers examined the suitability of each item of the measurement model using the INFIT MNSQ value. According to Adam and Khoo (1996) and Wilson et al. (2006), the INFIT MNSQ value should be between 0.75 and 1.33.

The researchers obtained the INFIT MNSQ value of the measurement model and found it in the range of 0.84 to 1.06. Consequently, it can be concluded that each item in the standards-setting appraisal measurement model is suitable.

CONCLUSION

The main aim of this research is to formulate and assess the quality of a standards-setting appraisal measurement model in terms of validity and reliability developed to evaluate the instructors' work performance in a public university in Thailand. As we know, the general aims of the standard-setting appraisal measurement model are to assess the core competencies of instructors, given that these are regarded as being crucial to the performance management process (Aliasghar et al., 2017; Le, 2021; Tan et al., 2019). Therefore, this model will provide a sound performance evaluation tool because it has undergone a comprehensive and scientific research procedure to address instructors' five core competencies identified by setting criteria on a Wright map from big data. To this end, the results of calculating the transition in each core competency to determine the standards-setting appraisal measurement model indicated that instructors' competency levels had been assessed in a real-world context. The results are in parallel with those of past researchers' (Blašková & Blaško, 2012; Islam et al., 2019; Le, 2021; Prasetio et al., 2017; Turturean, 2013).

Moreover, this model can contribute significantly to the educational measurement

and evaluation field because it has raised the opportunity to address significant concerns by drawing on the basic principles of performance appraisal and management, thus establishing itself in the human resources literature, as emphasized by Lohman (2021). It corresponds to Molefe's (2010) ideas that the priorities with regard to some core competencies, such as 'subject mastery' and 'research' were perceived as significantly more important than 'change management' and 'project management' in their standard-setting appraisal measurement model of the five best higher education institutions in South Africa, the United States of America, the United Kingdom, Australia, and Nigeria.

The initial results with regard to the determination of the cut-off point in assessing core competencies of instructors from the big data revealed that the transition in performance assessment could be divided into four cut-off points relating to five levels in ascending order, specifically -11.67, -2.68, 4.59, and 9.76, as derived from the Wright map. The use of the Wright map to determine the transition points by setting criteria areas has been supported by Lunz (2010), which helps to compare instructors and items. Following this reasoning, the researchers confirmed that performance assessment could be measured by investigating the core competencies while instructors carry out their job tasks. Moreover, the initial results also show that, in this study, there were no instructors whose performance evaluation was below -0.85 in the actual context. Hence, the initial results seem to fulfill the criteria set by the Thai government, as those

instructors who cannot perform to this level have to be terminated. It implies that higher education instructors are valuable assets and an essential driving force when upgrading the quality of teaching in higher education institutions, as emphasized by Anwar et al. (2017) and Islam et al. (2019).

In the second phase, the researchers formulated the standards-setting appraisal measurement model after identifying the score ranges converted from estimation competency parameters into the scale and raw scores. It was followed by trying out the standards-setting appraisal measurement model in the third phase. The results of the third phase indicated that most instructors from the research university are at Level 4 (53.73%) and Level 5 (38.47%). It implies that 92.20% of the 603 instructors surveyed are assessed as being highly competent. However, the science and technology cluster instructors are more highly competent than the instructors in the other two clusters. Even though instructors from humanities (64.36%) and social sciences and health sciences (53.78%) demonstrate having lower competency levels, the instructors' core competencies and positive behavior still enhance student learning in terms of new insights and capabilities (Prasetio et al., 2017).

In the final phase of this research, the developed standards-setting appraisal measurement model has undergone a thorough quality inspection in terms of its validity and reliability. The researchers provided three pieces of evidence regarding the validity: (2) internal structural validity,

(2) an internal structural integrity check, and (3) correlations between the formulated assessment standards and actual assessment in the real context. The results in terms of internal structural validity were determined using a Wright map (G^2 = 4295.31; AIC = 4337.31; BIC = 4489.27). In addition, the results imply that this measurement model can be used for actual assessment after conducting the following actions: collapsing Levels 1 and 2, modifying the expected value, and defining the key indicators of the expected performance level. The final validity evidence was the significant correlations between the Wright map score and actual assessment (0.21<r<0.55), which indicates a 0.01 significant level. It implies that most instructors' core competencies are in the same direction as the standards-setting appraisal measurement model. Last but not least, the SEM was used to assess the reliability of the standards-setting appraisal measurement model and showed that it has the same characteristics as those obtained from the actual assessment of work achievement. In conclusion, the standards-setting appraisal measurement model can provide rich and accurate information regarding instructors with moderate to high competency levels in their work performance (Curzi et al., 2019; Gómez & Valdés, 2019).

ACKNOWLEDGMENT

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Vaxx-Confident and Vaxx-Hesitant Agents: Factors Affecting COVID-19 Vaccination Willingness Among Young Adults in Klang Valley, Malaysia

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ABSTRACT

In February 2021, the government of Malaysia started the rollout of COVID-19 vaccination with the frontlines, such as healthcare personnel, essential services, and defense and security personnel. This effort was followed by the second phase of vaccination between April to August 2021 with senior citizens and high-risk groups, followed by the third phase from May 2021 to February 2022 with individuals aged 18 and above. Though this plan has been widely publicized and seemed to be carried out as planned, not much is known about the reaction of young adults getting vaccinated. As such, the current research was conducted to examine the (1) willingness of Malaysian young adults to get vaccinated, (2) contributing factors, and (3) hindrance factors towards vaccination among young adults. A self-administered online survey method was employed in this study, with 306 Malaysian young adults living in Klang Valley as research samples. The findings indicated that 74.5% of the respondents were willing to get vaccinated and that most of them, regardless of their vaccination willingness, emphasized the salient role that reliable and trusted information plays in shaping their inclinations. Based on their reported willingness, the respondents were categorized into two categories: vaxx-confident and vaxx-hesitant agents. The agents of socialization that were analyzed and discussed were news and media, family members, government, and opinion leaders. The two-way socialization processes that promote and hinder their COVID-19 vaccination were further discussed and highlighted.

Keywords: Agents of socialization, contributing factors, COVID-19, Malaysia, vaccination willingness

INTRODUCTION

The world has been battling Coronavirus Disease 2019 (COVID-19) for two years since its outbreak in Wuhan, China, in December 2019. The highly transmissible disease has threatened the world's healthcare system and presented extraordinary challenges to the government globally. As of the 5th of August 2022, more than 597 million confirmed cases and more than 600 million deaths worldwide.[1] In the fight against the unexpected pandemic, governments globally have imposed movement restrictions on their citizens to contain the spread of the virus. Other measures include the practice of social distancing, wearing face masks, and washing hands frequently. As there is no infallible cure, the current trend is to vaccinate world citizens and achieve herd immunity. In December 2020, countries such as the United States and the United Kingdom led the trend by vaccinating their citizens against COVID-19 ("COVID-19 Vaccine", 2020; "COVID-19: First vaccine", 2020).

On the 31st of December 2020, World Health Organization (WHO, 2020) listed the Comirnaty COVID-19 mRNA vaccine for emergency use. It was the first validation issued by WHO since the outbreak of COVID-19, which officially supports the vaccination rollout. On the 1st of June 2021, the China-invented Sinovac-CoronaVac COVID-19 vaccine was listed in the WHO emergency use listing (EUL). The vaccines listed in EUL currently include Pfizer/ BioNTech, Astrazeneca-SK Bio, Serum Institute of India, AstraZeneca EU, Janssen, Moderna, and Sinopharm vaccine (WHO, 2021).

Subsequently, in the first quarter of 2021, many countries worldwide have implemented phased distribution plans by prioritizing the frontliners such as doctors, nurses, healthcare workers, and those at higher risk of complications, for instance, the elderly. Malaysia kicked off its three-phase COVID-19 vaccination program on the 24th of February 2021 for citizens and non-citizens. By the 6th of June 2021, it was reported that 2,081,718,731 vaccine doses had been administered worldwide, and 3.42 million doses were given in Malaysia, with 1,127,336 individuals in the country having completed two doses of the COVID-19 vaccine. It indicates that a total of 3.5% of its population is fully vaccinated (Bernama, 2021; Johns Hopkins Coronavirus Resource Center, 2022).

COVID-19 Vaccination and Vaccine Hesitancy

Definition and Past Research. Despite the efforts done by the government to educate and socialize members of its citizens, one of the main challenges during the vaccination rollout is the issue of refusal or hesitancy. The opposition to vaccination can be traced back to the 1800s against smallpox vaccination and diphtheria, tetanus, pertussis (DTP) immunization, measles, mumps, and rubella (MMR). The concerns stem from fear of the unknown effects and effectiveness, skepticism, and

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[1] WHO Coronavirus (COVID-19) Dashboard, https://covid19.who.int/

distrust towards the government officials, worry about the vaccine source, which may not be in line with religious beliefs as well as the violation of human rights, especially when vaccination was made mandatory by the government (College of Physicians of Philadelphia, 2022).

Individuals who opposed vaccination have been labeled as anti-vaxxers. Scholars believe that anti-vaxxers are "someone who believes vaccines do not work, are not safe or refuse vaccines for themselves and their children if applicable" (Benoit & Mauldin, 2021, p. 2). The pressures imposed by social institutions and mandatory moves by the government arguably give rise to anti-vaxxers and anti-vaccination social movements (Durbach, 2000). Some scholars use anti-vaccination and vaccine hesitancy interchangeably or distinguish them by their differing intensity or mere terminology change (Roberts et al., 2022).

Kumar et al. (2016) pointed out that vaccine hesitancy is a new term replacing the old terms such as 'vaccine resistance' or 'vaccine opposition' and defined vaccine hesitancy as reluctant to be vaccinated. According to these researchers, vaccine hesitancy is caused by a lack of confidence in the vaccine's safety which is also related to the reliability and competency of the health system. Other factors include the quality of vaccination services and their conveniences, such as physical availability, geographical accessibility, affordability, and the patient's willingness to pay.

However, the current authors argue that anti-vaccination should be clearly distinguished from vaccine hesitancy. Drawing from the report of the Strategic Advisory Group of Experts (SAGE, 2014) on Immunization as well as The European Center of Disease Prevention and Control (n.d.), vaccine hesitancy refers to "delay in acceptance or refusal of vaccines despite availability of vaccine services" (para. 2). Vaccine hesitancy is complex as it depends on the context, which varies across time, place, and type of vaccine. A few determinants of vaccine hesitancy include contextual influences, individual and group influences, and vaccine/vaccination-specific issues that may arise from socio-culture, environmental, health system/institutional, economic, or political factors. These include the influences of communication and media, influential leaders, anti- or pro-vaccination lobbies, religion/culture/socioeconomic, and politics. Individual and group influences refer to the influences of significant others and socializing environments such as family, peers, and/or community members. Another determinant of hesitancy relates to vaccine/vaccination-specific issues directly related to the vaccine or vaccination itself. For instance, epidemiological and scientific evidence on the vaccine's benefit, the introduction of a new vaccine, reliability and/or source of vaccine supply, and/or vaccination equipment (SAGE, 2014). Thus, unlike the anti-vaxxers, vaccine-hesitant individuals may eventually get vaccinated due to favorable exposure and influences of their significant others, social-religious-political context, and mass media.

Numerous studies have been conducted on vaccine hesitancy in different countries. For instance, de Figueiredo and Larson (2021) investigated the global trend and found that vaccine uptake is linked to individuals' religious beliefs, and the minority religious group tended to have lower probabilities of uptake. Similar findings were also found by Ergur (2020) in Turkey. The common reason for his sample was their religious and traditional beliefs towards the vaccine, and their philosophical convictions and concerns about the safety of the vaccines influenced their vaccine willingness. They highlighted the need for more precise guidance and vaccine information to increase vaccination uptakes. There is also evidence of the role of social media on willingness towards vaccination. A recent study found that popular content on the topic of vaccination on social media was related to anti-vaccination messages, and vaxx-hesitant tend to spend longer on social media (Herr, 2021).

Besides religion and social media, political inclinations, ethnicity, gender, and occupation have also affected willingness to vaccinate. Studies in countries such as the United States showed that 1 out of 4 Americans are still unwilling to be vaccinated (Soucheray, 2021), and over 31% of individuals, especially ethnic minorities and women with conservative political leaning, had no intention of getting vaccinated. Another survey conducted by USA TODAY on 276 hospital networks and public hospitals in the United States discovered that some of its medical staff were not willing to be vaccinated, and this affected President Joe Biden's goal to vaccinate 70% of its adult population by the 4th of July 2021 (Heath, 2021; "States turning down COVID-19", 2021). In the case of Asian and Southeast Asian countries such as India, Indonesia, and the Philippines ("Countering vaccine hesitancy", 2021), the reasons for hesitancy or refusal mainly relate to the lack of trust or confidence towards the vaccine, such as safety issues, unknown side-effects, lack of knowledge about the effectiveness of the vaccine as well as social-cultural factors such as personal belief and religion as well as political leaning and the spread of false news (Che Awang, 2021; Heath, 2021; JoJack, 2021; Pertiwi, 2021; Yiğit et al., 2021). These contributing factors have affected governments' efforts to manage the COVID-19 pandemic, and Malaysia is no exception.

In Malaysia, statistics released up to the 28th of March by Statista.com recorded a high percentage of individuals willing to be vaccinated (83%). However, the number dropped to 77% by the 10th of May 2021 ("Share of people willing", 2021). In March 2021, the Deputy Health Minister of Malaysia, Dr. Noor Azlie Gazali, announced that the government was tracking down frontliners registered for the National COVID-19 Immunization Program but refused or failed to turn up for vaccination. Locality and culture may have contributed to hesitancy as there was an overrepresentation of individuals from certain states who failed to turn up, i.e., Kelantan (Idris, 2021). Another study

found that one-third of individuals living in *Projek Perumahan Rakyat* flats (translated as the people's housing project) remain unwilling to be vaccinated despite the free COVID-19 vaccines. The reasons cited were vaccine safety and the risk of side effects (United Nations Children's Fund Malaysia & United Nations Population Fund [UNICEF & UNFPA], 2021). Besides culture and socioeconomic status, vaccine hesitancy is also evident based on age group. A study by Syed Alwi et al. (2021) concluded that the overall acceptance of COVID-19 vaccination is high (83.3%) among Malaysians. However, the hesitancy rate is high among the elderly aged 60 years and above (63.4%). Reasons given by the respondents include their concerns about side effects and safety, lack of information about the vaccines and their effectiveness, and religious and cultural factors related to the vaccine. The study also indicated that diabetic and hypercholesterolemia patients are among those who were more hesitant to accept the COVID-19 vaccine than others. As such, there is a need to investigate further vaccine hesitancy, particularly among the young adults (18-30 years old) that contributed 69.37% of the total population (this figure includes those 31–65 years old) in Malaysia (Statista, n.d.).

Socialization and Vaccination. To manage vaccination hesitancy and ensure the vaccination rollout's success, initiatives to socialize individuals and acculturate them into vaccination culture were carried out. Socialization is the process where individuals learn through their interactions about society's norms, values, customs, and expected behavior (Britannica, n.d.). This process is imperative to ensure individuals can adjust and function well in society as a collective unit and is done by agents of socialization such as parents, peers, government, workplace, religious institutions, and media.

In the case to prevent the spread of COVID-19 and vaccination, the government of Malaysia has been socializing its citizens by leveraging media platforms (especially social media) such as the ministry's official portals, MySejahtera application, the official National Security Council's (Majlis Keselamatan Negara) telegram, and news portal. Through these platforms, the government provided daily updates on COVID-19 statistics, explained the vaccination process, shared the do's and don'ts during the movement control order, and even validated fake news surrounding COVID-19, among others. To socialize more effectively, the information provided via these channels is also delivered in all four main languages in Malaysia and presented in various formats such as text, video, and infographics. The government not only shared relevant factual information but also included campaign messages such as posters on choosing the proper diet, *hukum* of COVID-19 testing during Ramadhan, and ways to keep individuals healthy during home confinement. Other initiatives include encouraging individuals above 18 years of age to get vaccinated, encouraging significant others

to get vaccinated, and reminding them of necessary standard operating procedures during festive seasons were also shared to further promote vaccination in Malaysia via infographics (Ministry of Health Malaysia, 2021).

These efforts are applauded by many as the messages were perceived as necessary socialization to achieve the herd immunity target by the government. However, has this effort been successful? Are members of the nation ready to be vaccinated? Do the messages address the concerns that the different segments of society need to get their buy-in? The success of this effort can be measured by the internalization of the narrative by the government and the willingness to get vaccinated the members of the population. Failing and re-strategizing the effort is imperative and necessary.

With the current push of getting young adults in Malaysia (18 and above) and the intersectionality of issues raised on one's willingness to get vaccinated, as mentioned above, this research focuses on uncovering the vaccine willingness among young adults residing in Klang Valley Malaysia. Thus, this paper aims to discuss the (1) willingness of Malaysian young adults to get vaccinated, (2) the contributing factors, and (3) the hindrance factors towards vaccination among young adults.

Conceptual Framework and Significant of the Study. The success of a vaccination program depends very much on the uptake of the population. It is important to consider the local factors or issues that affect vaccine hesitancy or refusal: demographic factors, sources of trusted information, and agents of socialization (Figure 1). The demographic factors analyzed include gender, ethnicity, and household income, while the sources of trusted information include WHO, Malaysian health professionals, foreign health professionals, government and politicians, family members, friends, and news (i.e., newspaper, TV) and social media. The agents of socialization included news and media, government, family members, and opinion leaders. These variables were identified and analyzed to help answer the research questions and test this study's null hypothesis; H_0: There is no significant contribution of the socialization agents (news and media, government, family members, and opinion leaders) toward the willingness of COVID-19 vaccination.
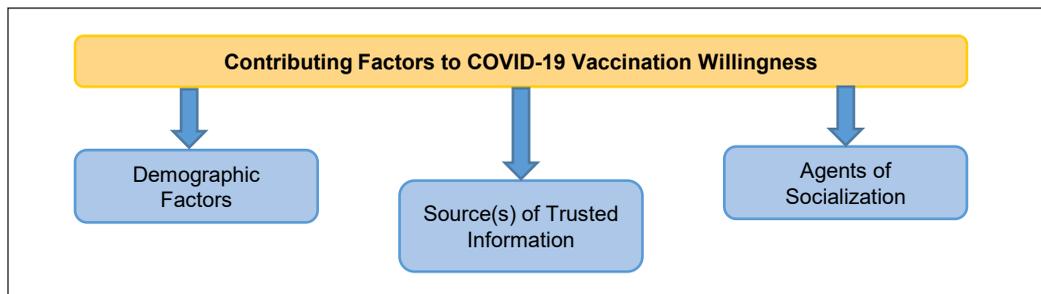

Figure 1. Conceptual framework

These research findings are an important contribution to the corpus of knowledge on COVID-19 vaccination as it provides a comprehensive approach to the willingness to vaccinate among youths. The government and policymakers will be able to refer to this study to manage the current pandemic holistically and systematically, especially among the youth.

METHODOLOGY

The research method used in this study is a self-administered online survey method, with a combination of closed-ended and open-ended questions adapted from the questions outlined in the Report of the Sage Working Group on Vaccine Hesitancy (SAGE, 2014). Statistics on COVID-19 reported by the Ministry of Health Malaysia have shown a consistent peak of cases in Selangor and its neighboring areas, wholly known as the Klang Valley. This area is one of the most industrialized and populated areas with high COVID-19 spreading tendencies. Therefore, getting the population of Klang Valley vaccinated has been on the national agenda and is viewed as imperative to manage the spread of the disease and protect the citizens.

According to the Department of Statistics Malaysia (2021), 30% of the Klang Valley population comprises young adults aged 18 to 30, making it the highest percentage among all other age groups. The research sample is 306 young adults, aged between 18 to 30 years old, currently residing in the Klang Valley, Malaysia. The sampling estimation was based on the sample size calculator by Roasoft, with a 95% confidence interval. Data was collected using Google Forms, and the survey link was shared through social media and snowballed through researchers' students, school alumni, and professional networks.

The survey was divided into three main sections: Section A consists of demographic questions; Section B includes basic information on vaccination and their willingness for vaccination; and Section C explores the role of socialization agents in their willingness for vaccination. Socio-cultural factors and socialization agents included news and media, opinion leaders, culture and religion, government and policies, and family members. A pre-test was conducted with 30 respondents to test the instrument and research procedures.

The quantitative data was divided by the willingness of the respondents to be vaccinated: Group 1 represents willing individuals, and Group 2 represents unwilling individuals. The effects of socialization agents on willingness were measured using the linear regression analysis for all Likert-scaled data. Univariate logistic regression was used to access the odd ratios (OR) for the dichotomous data, with a 95% confidence interval (CI). Socialization agents were thus considered as the independent variable, and willingness was the outcome of interest. Consequently, the OR value < 1 indicated less association between the effect of socialization agents on willingness for vaccination, while an OR value > 1 indicated otherwise. All statistical analyses were performed using the Statistical Package for

the Social Science (SPSS) software version 25, while the data collected based on open-ended questions were analyzed using QSR International NVivo 12 software.

RESULTS

The closed-ended questions were analyzed based on their willingness to be vaccinated, and the results were summarized in Table 1. Of 306 respondents, 228 (74.5%) were willing to take the COVID-19 vaccine, while 78 (25.5%) participants were not willing to be vaccinated. 56.4% of the respondents willing to be vaccinated were Malays (n=128), while 49.4% from the unwilling group were Chinese (n=39). Almost half of the unwilling group were from the Bottom 40 group (B40), earning less than RM4849 per month.

Qualitative data were analyzed and highlighted below to support the data above. General responses to their willingness to be vaccinated include the highlights of achieving herd immunity and their hope to 'return to normalcy.' Some also highlighted the importance of ensuring the safety of society and their confidence that this is the only way forward based on their research on vaccination. Quoting some of them:

The best and only option we have right now is to get vaccinated; the faster we reach herd immunity, the faster we get back to some 'normalcy' again. (Malay, Female, 24 years old)

The vaccine is vital in achieving herd immunity which would, in turn,

Table 1
Demographic factors to the willingness for COVID-19 vaccination

	Willing N (%) 228 (74.5)	Unwilling N (%) 78 (25.5)	Total N (%) 306 (100)
Gender			
Male	65 (28.6)	23 (29.1)	88 (28.8)
Female	162 (71.4)	56 (70.9)	218 (71.2)
Ethnicity			
Malay	128 (56.4)	23 (29.1)	151 (49.3)
Chinese	68 (30)	39 (49.4)	107 (35)
Indian	21 (9.3)	11 (13.9)	32 (10.5)
Others	10 (4.4)	6 (7.6)	16 (5.2)
Household Income			
<RM2500	48 (21.1)	19 (24.1)	67 (21.9)
RM2500 – 4849	54 (23.8)	21 (26.6)	75 (24.5)
RM4850 – 10959	49 (21.6)	12 (15.2)	61 (19.9)
RM10960 – 15039	17 (7.5)	1 (1.3)	18 (5.9)
>RM15039	28 (12.3)	2 (2.5)	30 (9.8)
Don't Know	31 (12.7)	24 (30.4)	55 (18)

be able to protect everyone in the community. (Kenyah, Female, 21 years old)

I have conducted my readings and befriended several medical professionals throughout this pandemic and talked about the virus and the vaccines, and I have ascertained that the risks of contracting/suffering from severe symptoms/dying from COVID-19 heavily outweigh the risks of the adverse effects from the vaccines. (Malay, Male, 21 years old)

In contrast, as evident in Table 2, those unwilling to get vaccinated claimed that they are hesitant as the vaccine has not been fully proven safe for consumption, lacks details on its effects, and has questionable ingredients. They also believe that they have the right to remain hesitant and make their own decision. They said:

It is my own choice, and nobody can tell me otherwise. (Chinese, Female, 30 years old)

Well, for the safety of everyone, I would still consider taking the vaccine and doing my part in fighting against covid-19, but once the vaccine is proven 100% safe. (Malay, Female, 19 years old)

Because there are not enough details about the effect that can happen after we get vaccinated. (Malay, Female, 23 years old)

Both groups claimed that they mainly relied on information from the WHO and Malaysian health professionals (willing [n=191] and unwilling [n=52]). Though this is more salient among willing people, both groups of respondents are more reliant on these sources than social media (willing n=35, unwilling n=17) or friends (willing, n=20, unwilling, n=9).

Table 3 summarizes the role of agents of socialization in COVID-19 vaccination. In terms of the influence of news and media, substantial differences were seen in Q5, Q6, and Q7. In Q5, respondents who believed in stories of individuals claiming to lose a family member due to

Table 2
Sources of trusted information

Source of trusted info	Willing	Not Willing	Total
WHO	191 (84.5)	52 (65.8)	243 (79.7)
Malaysian health professional	171 (75.5)	43 (54.4)	214 (70.2)
Foreign health professional	76 (33.6)	23 (29.1)	99 (32.5)
Government and politicians	28 (12.4)	10 (12.7)	38 (12.5)
Family members	30 (13.3)	19 (24.1)	49 (16.1)
Friends	20 (8.8)	9 (11.4)	29 (9.5)
News (i.e., newspaper, tv)	87 (38.5)	34 (43)	121 (39.7)
Social media	35 (15.5)	17 (21.5)	52 (17)

Table 3
Agents of socialization contribute to the willingness for COVID-19 vaccination

Agents of Socialization	Willing N (%)	Not Willing N (%)	R²	Sig
News and Media				
Q2 Reconsider the decision for vaccination based on the media report	SD 25 (11)	SD 3 (3.8)	.530	.001**
	D 38 (16.7)	D 6 (7.6)		
	N 69 (30.4)	N 40 (50.6)		
	A 61 (26.9)	A 22 (27.8)		
	SA 34 (15)	SA 8 (10.1)		
	M = 3.18	M = 3.32		
	sd = 1.2	sd = 0.9		
Q5 Believe in stories of individuals claiming to have lost a family member due to the COVID-19 vaccine.	SD 37 (16.3)	SD 2 (2.5)		
	D 59 (26)	D 4 (5.1)		
	N 68 (30)	N 33 (41.8)		
	A 35 (15.4)	A 26 (32.9)		
	SA 28 (12.3)	SA 14 (17.7)		
	M = 2.82	M = 3.5		
	sd = 1.2	sd = 0.9		
Q6 The reports on side effects and death cases due to COVID-19 vaccination affect the decision to be vaccinated.	SD 52 (22.9)	SD 2 (2.5)		
	D 57 (25.1)	D 2 (2.5)		
	N 59 (26)	N 30 (38)		
	A 46 (20.3)	A 26 (32.9)		
	SA 13 (5.7)	SA 19 (24.1)		
	M = 2.6	M = 3.7		
	sd = 1.2	sd = 0.9		
Q7 The news on new variants of COVID-19 influenced my decision to be vaccinated.	SD 22 (9.7)	SD 5 (6.3)		
	D 29 (12.8)	D 5 (6.3)		
	N 53 (23.3)	N 34 (43)		
	A 53 (23.3)	A 27 (24.2)		
	SA 70 (30.8)	SA 8 (10.1)		
	M = 3.53	M = 3.3		
	sd = 1.3	sd = 0.9		
Government				
Q15 Malaysian government is making decisions based on my best interest with respect to what vaccines are provided	SD 5 (2.2)	SD 4 (5.1)	.457	.009**
	D 24 (10.6)	D 8 (10.1)		
	N 96 (42.3)	N 52 (68.5)		
	A 65 (28.6)	A 12 (15.2)		
	SA 37 (16.3)	SA 3 (3.8)		
	M = 3.46	M = 3.03		
	sd = 0.9	sd = 0.7		
Q16 Government has purchased the highest quality of vaccines available in the market	SD 4 (1.8)	SD 8 (10.1)		
	D 21 (9.3)	D 15 (19)		
	N 101 (44.5)	N 46 (58.2)		
	A 69 (30.4)	A 7 (8.9)		

Table 3 *(continue)*

Agents of Socialization	Willing N (%)	Not Willing N (%)	R²	Sig
	SA 32 (14.1)	SA 3 (3.8)		
	M = 3.45	M = 2.77		
	sd = 0.9	sd = 0.8		
Q17 The national vaccination program has been carried out efficiently	SD 36 (15.9)	SD 6 (7.6)		
	D 57 (25.1)	D 14 (17.7)		
	N 77 (33.9)	N 40 (50.6)		
	A 39 (17.2)	A 15 (19)		
	SA 18 (7.9)	SA 4 (5.1)		
	M = 2.7	M = 2.96		
	sd = 1.15	sd = 0.9		
Q18 My decision on vaccination is mostly based on the influence of the government's assurance	SD 27 (11.9)	SD 5 (6.3)		
	D 46 (20.3)	D 12 (15.2)		
	N 76 (33.5)	N 32 (40.5)		
	A 48 (21.1)	A 24 (30.4)		
	SA 30 (13.2)	SA 6 (7.6)		
	M = 3.04	M = 3.17		
	sd = 0.19	sd = 0.9		
Family Members			.480	.001**
Q21 Decision on vaccination is mostly based on the influence of my family members	SD 4 (19.4)	SD 7 (8.9)		
	D 49 (21.6)	D 11 (13.9)		
	N 71 (31.3)	N 26 (32.9)		
	A 47 (20.7)	A 23 (29.1)		
	SA 16 (7)	SA 12 (15.2)		
	M = 2.74	M = 3.28		
	sd = 1.19	sd = 1.15		
Q22 Important to get support or consent from the family members before making the decision to vaccination	SD 45 (19.8)	SD 4 (5.1)		
	D 26 (11.5)	D 4 (5.1)		
	N 68 (30)	N 28 (35.4)		
	A 55 (24.2)	A 20 (25.3)		
	SA 33 (14.5)	SA 23 (29.1)		
	M = 3.02	M = 3.6		
	sd = 1.31	sd = 1.1		

Agents of Socialization	Willing N (%)	Not Willing N (%)	OR	CI	Sig
Opinion Leaders			.494	.37 - .67	.001**
Q8 Agree with group leaders who refuse Vaccination.	Y 29 (12.8)	Y 38 (48.1)			
	N 198 (87.2)	N 41 (51.9)			
Q9 Celebrity advocation against vaccination influences the decision to be vaccinated	Y 14 (6.2)	Y 16 (20.3)			
	N 213 (93.8)	N 63 (79.7)			
Q11 Religious leaders' advocation against vaccination influences the decision to be vaccinated	Y 24 (19.6)	Y 11 (13.9)			
	N 80 (35.2)	N 28 (35.4)			
	NA 123 (54.2)	NA 40 (50.6)			

the COVID-19 vaccine were most likely to be unwilling to take the vaccine (willing M=2.82 SD=1.2, unwilling M=3.5 SD=0.9). In Q6, respondents who believed in the reports on the side effects and death cases due to the COVID-19 vaccination were unwilling to take the vaccine (willing M=2.6 SD=1.2, unwilling M=3.7 SD=0.9). On the other hand, responses for Q7 showed that the news on the new variants of COVID-19 influenced the willing group to get vaccinated compared to the unwilling group (willing M=3.53 SD=1.3, unwilling M=3.3 SD=0.9).

Linear regression was used to measure the effect of news and media on the level of willingness among respondents. A significant regression equation was recorded, H_0 rejected, [F(1, 304) = 31.52, p < .001], with an R2 of .530, indicating 53% of the willingness level was explained by the influence of news and media.

The following agent of socialization towards vaccination is the government. According to Q15, respondents who agreed that the Malaysian government was making decisions based on their best interest concerning what vaccines were provided were more willing to be vaccinated (willing M=3.46 SD=0.9, unwilling M=3.03 SD=0.7). When the respondents believed that the government had purchased the highest quality of vaccines available in the market, they were also more willing to be vaccinated (willing M=3.45 SD=0.9, unwilling M=2.77 SD=0.8). However, their perceptions of the efficiency of the vaccination program and the government's assurance of vaccination did not show much effect on their willingness.

Those willing further elaborated that the government has done its part, and the citizens now need to do theirs to combat the COVID-19 pandemic. They said:

> The best vaccine is the one that is readily available, we all need to do our part to achieve herd immunity to overcome this pandemic. (Chinese, Female, 27 years old)

> It is my responsibility to my community to ensure that I do not carry the virus and spread it. (Malay, Female, 19 years old)

In contrast, those who are unwilling emphasize their distrust towards the government because of a lack of clear information regarding the vaccine, the process, and the effects of vaccination. Quoting two of them:

> Because there are no details about the effect that can happen after we get vaccinated. (Malay, Female, 28 years old)

> They (parents) are senior citizens, and I love them dearly as WE ONLY HAVE ONE SET OF PARENTS. The government is doing a half bake crappy job, and I do not trust them. There are no proper legit black-and-white responses or answers from them on this. So, I will not let my parents be a "rat lab"! (Malay, Female, 30 years old)

Through linear regression, there was a significant regression equation found, H_0 rejected, $[F(1, 304) = 26.93, p < .000]$, with an R2 of .457, indicating 45.7% of the willingness level was explained by the influence of the government.

Family members were also found to play a significant role in COVID-19 vaccination. Respondents reported that their family members influenced their decision (willing M=2.74 SD=1.19, unwilling M=3.28 SD=1.15). They also believed they needed support or consent from the family members before deciding on vaccination (willing M=3.02 SD=1.31, unwilling M=3.6 SD=1.1). The open-ended data also suggests that the respondents considered the safety and well-being of their family members as contributing factors. Many of the willing respondents believe that vaccination will enable them to keep others around them safe and speed up the process for them to visit them again. They also highlighted their role in educating their family members and serving as role models to others to persuade them toward vaccination.

> I will try my best to educate them [family] about the vaccine, the benefits, and the possible side effects. (Indian, Female, 24 years old)

> Although some would point out that youths have stronger immune systems and would not require a vaccination, others around them are still susceptible to getting infected. Therefore, vaccination is still essential regardless of how strong your immune system is. (Chinese, Male, 28 years old)

> The earlier we all get vaccinated, the earlier we get out of this pandemic and be allowed to visit families and friends. (Malay, Female, 25 years old)

In a similar line of thought, the unwilling respondents highlighted that they would discourage their family members from getting vaccinated to keep them safe. It is especially for the elderly and those with health concerns. Instead, they believe that staying home and minimizing contact are better options until more information is available on the vaccine. Some of them said:

> They are older adults. I do not want anything bad to happen to them because of being vaccinated. So, I will encourage them not to get one. (Indian, Female, 18 years old)

> I am cautious because my parents have underlying health conditions, so I would like them to wait for a little to know which vaccine is safest for those who have a weak immune system. (Malay, Female, 30 years old)

> You cannot afford to lose them over a self-made choice to get vaccinated compared to covid that is preventable by staying home and minimizing contact. For now, we can avoid going out. So, we need

not get vaccinated yet. (Chinese, Female, 29 years old)

The effect of family members on vaccination willingness as a whole can be explained by the significant regression found, H_0 rejected, [F(1, 304) = 29.52, p < .000], with an R2 of .480, indicating 48% of the willingness level was explained by the influence of family members.

Opinion leaders were one of the agents of socialization tested in this study. Univariate logistic regression was used to measure the effects of opinion leaders on the level of willingness among respondents. Statistically significant effects between opinion leaders and the level of willingness were found, H_0 rejected with an OR value of 0.494 < 1. It indicates the small effect of opinion leaders on the willingness for vaccination.

Both willing and unwilling groups have argued that opinion leaders lack the authority to speak of the COVID-19 pandemic unless they are involved with clinical trials or cite credible sources. Some are also perceived to comment on the vaccination to advance their agenda, as per excerpts below:

These leaders did not do their research whatsoever and likely did not have any qualifications to say the vaccine is bad. I would not trust them. (Malay, Female, 22 years old)

It depends on who exactly these leaders are. The ones I trust and believe usually have a track record of talking about factual stuff and not simply sharing nonsense just

for popularity's sake. (Chinese, Female, 23 years old)

However, there was also evidence of exceptions to the rule for religious leaders. Some respondents believed that the words of their religious leaders must be followed due to their broader knowledge and religious socialization. Some of their comments are as follows:

When mufti releases their fatwa, we must follow. Their knowledge is broader than ours, and we need to ikhtiar; Allah will do the rest. (Malay, Male, 21 years old)

Most of the religious neighbors in my housing area strongly agree with taking a vaccine as it would allow us to perform prayers in the mosque even more and consistently. If ever we were to experience a bad side effect, it is part of our fate, and it's fine. (Malay, Male, 25 years old)

If someone has strong iman, they will believe in the cure given by Allah SWT. (Malay, Male, 23 years old)

Furthermore, several unwilling respondents claimed that they are not religious, so the role of religious leaders does not impact their decision-making towards vaccination.

DISCUSSION

The effort of vaccinating the entire population during the COVID-19 pandemic

is an uphill battle. This research supports those found in previous studies where most people, including young adults, are willing to get vaccinated (Herr, 2021; Lazarus et al., 2021; "Share of people willing", 2021). However, the factors that promote and hinder individuals from vaccination are important to be discussed better to understand the role of socializing agents and sociocultural factors to ensure the success of the vaccination program, in the long run, which has been largely absent in the academic writing and narrative by the officials.

Through this research, it was found that the agents of socialization play an important role in vaccination among these young adults—both to promote vaccination and to hinder them from getting vaccinated. The authors argue that the influence of socializing agents produces two types: vaxx-confident agents and vaxx-hesitant agents. The term agent is used as these individuals now are empowered individuals who claim to make rational and informed decisions, in addition to their role as agents of socialization to their family and friends.

It is supported by the open-ended data where the respondents claimed that they often provide the necessary information to their significant others and would persuade them, especially their aging and unwell parents. The term hesitance is used to distinguish these respondents from anti-vaccination respondents. This research shows no evidence that the respondents highlighted their stance against vaccination. Instead, they emphasized the delayed decision to be vaccinated due to their concerns.

It is not surprising to note the significant influence of news and media as socializing agents towards vaccination. Similar findings have been discussed earlier, especially among younger people who spend longer on social media (Herr, 2021). Since the respondents can be associated with the 'digital native' label, their inclination to use social media as their main platform to conduct research, obtain information, and form their view toward vaccination would be relatively natural. Digital platforms make it easier for individuals to get a wide range of information from various experts locally and globally. However, unlike the arguments made by Herr (2021), who highlighted the high consumption of anti-vax content on social media, which in turn results in an unwillingness to vaccination, this research shows that the hours spent online among the youths in this study helps them to possess the necessary knowledge about the vaccine based on the available information learned by credible sources. This knowledge equips them with the necessary information and serves as the basis for their decision to get vaccinated regardless of the view of others. Armed with such knowledge, they also seemed empowered to decide confidently on getting vaccinated.

As for families, their role is an interesting one for vaxx-confident agents. Some respondents highlighted the cultural obligations of getting input, support, and blessings from their families before deciding to vaccinate. However, their reasoning

for getting vaccinated so that their family members are also safe, in addition to their hope to engage in family activities soon, indicates that the socialization process by family members may indirectly affect their decision to get vaccinated rather than a direct one. The vaxx-confident agents also showed that socialization is a two-way process where family members are also being socialized toward vaccination by these agents.

The role of the government as an agent of socialization has also been found to be significant in this study, perhaps indicating the effectiveness of the effort by the Malaysian government as previously indicated (Ministry of Health Malaysia, 2021). The government seemed to have persuaded individuals to vaccinate with the narrative that the vaccination program is in the people's best interest. The government also managed to create the impression that they did purchase the best vaccines available for the citizens. Since many of the respondents highlighted that their main reasons for vaccination are related to staying healthy and safe, the efficiency of the program's rollout process did not matter much for this group of respondents. Instead, the respondents mentioned the need to achieve 'herd immunization' as the only way forward to contain the pandemic. It reflects the stance of the government, as often highlighted in the media throughout the rollout process.

The impact of advocacy against vaccination by opinion leaders on young adults was a non-significant one - at least statistically. It may be mainly attributed to these leaders' perceived authority and expertise to convey information related to COVID-19. Celebrities and religious leaders are not seen as 'relevant' to the COVID-19 discussion, hence their lack of influence over young adults. A number of the respondents claimed that they are better informed than those leaders due to their in-depth research and exposure to facts and data provided by various credible sources such as WHO and medically trained experts.

However, the open-ended data obtained from this study paints a fascinating picture of the influence of religious leaders on some individuals. These religious leaders are associated with the status of Muftis and 'leaders' in general and are socially accepted as the authority within the religious community. The opinion and advice of these religious leaders, which are often based on the interpretation of religious texts and teachings, are accepted as fatwa or obligatory guidance, and hence conformity by the believers is expected. Though the link between religious belief and vaccination has been previously discussed (read de Figueiredo & Larson, 2021; Ergur, 2020), this study adds to the expectation of these leaders to also quote credible scientific and medical sources regarding the vaccine in addition to linking them to the religious context for their arguments to be well received by the young adults.

These agents of socialization then contribute towards the shaping of what the authors' term vaxx-confident agents, individuals who are not only willing to get

vaccinated but also possess the following characteristics:

- Confident that they possess the necessary knowledge and information about the vaccine, the process, and the risk
- They firmly believe their choice is theirs, as they are responsible for their own bodies.
- Maintains that only with vaccination are they responsible agents to ensure that self is well and not putting others at risk
- holds a personal commitment to improving society by getting vaccinated so they can return to social activities with friends, families, and religious events.

For the hindrance factors, socializing agents such as media, family, and government also played important roles. The sensationalization of stories that evoke an emotional response and increase engagement, be it in the news or on social media amidst this overreported information about COVID-19, is arguably a strategy employed by individuals and media owners to get the attention of its consumers. Hence the story of side effects, especially towards specific target groups, death associated with vaccination taking, in addition to stories of losing family members tend to be highlighted. These stories may be true, but sensationalization and anti-vaccination propaganda may contribute to a loop-sided view against vaccination (Herr, 2021). It is in addition to the spread of false and unverified stories that the nation faces during the pandemic. Thus, some young adults in this category reported that such news and stories make them hesitant to be vaccinated.

Another important socializing agent that was found to have influenced vaccine hesitancy among respondents is family. The respondents believe that the opinion of their family members matters and that getting their full support is important in their decision-making. Such a mentality is reflective of family-oriented Asian values and collectivistic communal norms. With more than 50% of the respondents of those who are unwillingly being from the bottom 40% (B40) group, their obligations towards the family may be at a higher stake than those in the middle 40% (M40) or top 20% (T20). Hence, they may be socialized to ensure they are healthy enough to support their family further. Should there be any health complications, the worry of financial burden or lack of assistance may be a further concern. It may also be linked to the studies by Idris (2021) on the jarring difference between individuals who turn up for vaccination by the Malaysian states and the PPR flat residents, as documented by UNICEF and UNFPA (2021). Another interesting finding was that these young adults played an active role in socializing their parents, especially the elder and fragile parents, against vaccination. Since they are unsure of the safety and effectiveness of the vaccines, they make their opinion clear to their parents, which in turn may affect their parents' willingness to get vaccinated. It is also based on their reasons that it is a risk

not worth taking, and they would be better off engaging in social isolation than getting vaccinated. Of course, some elderly may be easily swayed due to their reluctance toward vaccination, as found in the research by Syed Alwi et al. (2021).

The government also did not seem to have convincingly persuaded and assured those unwilling to be vaccinated. The data reveals that though this group of respondents thinks that the government is indeed considering people's best interests, they do not think the government purchased the best vaccines on the market. In fact, in the open-ended data, the findings reveal that the government has failed to socialize this group of young adults towards vaccination as they are unable to address the issue of side effects and fatality as well as the effectiveness of vaccines purchased. The lack of trust in the government and the failure to manage the expectations of young adults is in line with the previous research and reports (Che Awang, 2021; Heath, 2021; JoJack, 2021; Pertiwi, 2021; Yiğit et al., 2021). The government is also perceived not to have a well-thought-out plan, hence their hesitancy towards vaccination for themselves and their family members to avoid being the 'lab rats.'

Some of the vaxx-hesitant agents highlighted that they are not religious or do not know where vaccination stands in their religious, cultural, and philosophical stance. Thus, they claim that their decision not to be vaccinated is not linked to this cultural reasoning but to their perceived safety and scientific proof. Without such

data and clear evidence, some would prefer not to take risks and take on self-precaution instead. In contrast, for those who subscribe to a specific religion, there is evidence suggesting that they have been socialized against vaccination due to the questionable vaccine ingredients, lack of specific discussion in their holy book on vaccination, and the conspiracy theory of mass genocide via vaccines. These believers also reasoned that the supreme being is the best curer; hence, they can engage in various other religious rituals that protect them against COVID-19.

Thus, these agents of socialization either socialized these young adults into the 'hesitant' culture or failed to socialize them into the currently expected vaccination camp. As a result, the authors classify them as vaxx-hesitant agents. These individuals are not only unwilling to get vaccinated at the point of this research but also possess the following characteristics:

- Believe that the available vaccine is unsafe and/or risky
- It strongly holds that they need to take proactive measures to protect themselves and their significant others in ways other than vaccination.
- Firmly believe no one should pressure them into vaccination, which is their fundamental right over their own body.
- Expect the authority to provide more evidence and data on the effectiveness and side effects before considering vaccination.

- Maintains that not being vaccinated does not translate into deviance but rather their way to ensure that they and their family members are safe and not 'test subjects.'

CONCLUSION

This research's aims were achieved as the findings provide a picture of the willingness to get vaccinated and the contributing and hindrance factors towards vaccination among young adults selected in this study. The qualitative and quantitative data obtained in this study provide more holistic insights into COVID-19 vaccine willingness, namely on the role of knowledge and data, cases and campaigns, health and well-being, self and communal protection, as well as religious and political factors that contribute to or hinder these young adults.

More specifically, it was found that the agents of socialization, namely media, family, and government, play important roles in shaping these young adults as vaxx-confident or vax-hesitant agents. However, socialization is a two-way process, especially with family members. The input of agents of socialization has both direct and indirect impacts on the perception of these respondents toward vaccination. Upon their crystalized view towards vaccination, these agents, in turn, would socialize with others around them to either become vaxx-confident or vaxx-hesitant themselves. Similarly, the media has been found to shape these young adults to either hinder or promote the likelihood of these individuals getting vaccinated. These individuals then would use social media as a platform to spread their thoughts and concerns, as well as to educate their significant others. Thus, this adds to the complexity of the population getting vaccinated and the vaccination efforts by the government.

This study also outlines the characteristics of vaxx-confident agents and vaxx-hesitant agents. Previous studies tend to provide a rather simplistic lens and a unidimensional variable of vaccination willingness. Scholars have discussed vaccine hesitancy as anti-vax individuals unwilling to vaccinate. Instead, this study further describes the characteristics and attitudes of vaxx-confident and vaxx-hesitant agents, which showcase the multitude of aspects of these individuals. Although most of the respondents are vaxx-confident agents and are champions of vaccination, it is imperative for policymakers and medical practitioners also to pay attention to the vaxx-hesitant agents. It is imperative to take note of the factors that keep some young adults hesitant, namely the lack of surety on the safety and effectiveness of the vaccine, as well as clarification on the reasons for complications faced by some recipients. The government may put in more effort to further boost young adults' confidence by providing more research data and facts—especially those highlighted by World Health Organization and medical practitioners. Though minimal, religious leaders' roles can be further explored as they seem to impact some young adults. The religious teachings and beliefs backed by scientific data may be influential in promoting vaccination among believers.

Findings from this research contribute to understanding COVID-19 vaccine willingness among young adults in the localized context and shed light on factors that may influence vaccination willingness in other collectivistic societies. The study contributes to filling up the research gap in COVID-19 vaccination besides serving as a reference to the policymakers to achieve herd immunity. The limitations and suggestions for future study include the research areas that need to be expanded to more states in Malaysia and the focus group discussion method to enrich the data further to be obtained by the future researcher(s).

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SOCIAL SCIENCES & HUMANITIES

Reconstruction of Proto Central of Pahang River Phoneme

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ABSTRACT

This study reconstructed the proto-phoneme of consonants for a subdialect in the central basin of the Pahang River. The length of this river is 459 kilometres, and the area in the centre part of the river was selected to perform comparative linguistics observations. Five research sites were selected for this study purpose, namely Kuala Tembeling (KT), Lada (LDA), Jeransang (JRG), Kedondong (DDG), and Bukit Nikmat (BMT), based on their distinctive phonological characteristics. The research sites were visited twice to ensure the authenticity of the gathered data. The data were screened to extract cognate words using Crowley's framework. Crowley's sound correspondence set (SCS) was employed to evaluate and extract proto-phonemes. After the phonemes were retrieved, the reconstructed proto-phoneme of Adelaar was used as a point of comparison. The findings revealed that Proto-Centre Pahang river (PCPr) has 18 ancient consonant phonemes (*p, *b, *t, *d, *k, *g, *m, *n, *ɲ, *ŋ, *l, *s, *ɣ, *h, *c, *ɟ, *w, and *j). The distribution of these consonants is diverse and depends on the consonant type. A vocalic feature of PCPr, such as vowels and diphthongs, should be the subject of future discussion to arrive at definitive conclusions regarding phonological changes between PCPr and Proto-Malayic (PM).

Keywords: Consonants, distribution, phoneme, Proto-Centre Pahang River, reconstruction

INTRODUCTION

The Pahang River stretches for approximately 459 kilometres and is the longest river in Peninsular Malaysia. This river flows from the centre of the Peninsular to the East Coast region. The river connects several villages, including Jerantut, Temerloh, Maran, Bera,

and Pekan. This present study focused on Jerantut due to its historical significance. The following five research sites were selected to conduct the investigation: Kuala Tembeling (KT), Lada (LDA), Jeransang (JRG), Kedondong (DDG), and Bukit Nikmat (BMT).

Studies by Linehan (1928a, 1928b, 1930, 1936, 1951) documented the establishment of the Malay population in these areas thousands of years ago. Unlike many other rural areas, its population appear to be fractional due to frequent calamities known as massive flood. As this disaster occurred once every 100 years or less, the locals were forced to relocate to other safe settlements. Most of the residents are composed of elderly people who live mostly alone. This study documents the phonological characteristics found in these research sites.

Problem Statement and Research Objective

Pahang is frequently referred to as a state with only a single dialect. For example, Omar (1977) used political labelling to classify Pahang as a whole as a variant of the southern group, including Malacca, Johor, Selangor, and Perak. This assertion contradicts her 38-year writing (Omar, 2015a) that clearly states that the Pahang dialect has its phonological pattern. This notion is supported by findings that Pahang is influenced by other dialects, such as Kelantan and Terengganu (Hussein, 1973). Several studies, such as Omar (2015a), applied district orientation classification.

Despite her contribution to illustrating the spread of dialect in the state of Pahang, Collins (1989, 1999), on the other hand, rejected this method upon adhering to Jalaluddin et al. (2017) and Hamzah et al. (2014) due to the similar concept of political labelling.

Omar (1977), Hussein (1973), and Karim and Ibrahim (1977) divided Pahang into groups based on their phonetic distinctions. However, these studies were impressionistic (Jalaluddin et al., 2017) as they relied on isolated phonological findings and dismissed the comparative linguistics approach. The comparison of interdialectal or subdialect illustrates the linguistic properties in the area. According to Karim and Ibrahim (1977), Kelantan and Terengganu dialects influenced Ulu Tembeling. Due to limited prior studies in the field of linguistics to prove the interval relationship upstream of the Pahang River, Hasrah et al. (2014) identified the pattern of its changes with an ancient language called the Proto Malayik (PM).

Although past studies have significantly impacted the basic framework of phonological properties for several areas in Pahang, only a handful of studies have adopted the comparative linguistics approach in an area where phonological variances exist (Zaidi & Aman, 2019). Only a handful of studies in Pahang River had deployed the comparative linguistics method. The dialect varieties spoken by the natives along the Pahang River can change their linguistic form gradually depending on the river groove, as described by Hussein

(1973), suggesting in-depth investigation using the comparative linguistics method in the central area of the Pahang River. Hence, this study examined the characteristics of the language in the Jerantut district, as well as the reconstruction of Proto-Centre Pahang River (PCPr) phonemes.

LITERATURE REVIEW

The diversity of the dialect in Pahang has enabled scholars from various fields to delve deeper into it from their respective perspectives. The discussion in this literature review revolves around three issues: the phonological aspect of the dialect of Pahang Malay, the dialect classification based on the phonology approach, and the classification of Pahang Malay dialect evidence based on comparative linguistics studies. The phonological discussion of the Pahang Malay dialect was initiated by Sturrock (1912), Karim and Ibrahim (1977), Omar (1977, 2015a), Collins (1983a, 1983b), and Idris (1989).

Sturrock (1912) initially discovered the gem of the Pahang dialect characteristics. He collected some lexical believed to stem from the central area of Pahang and discussed his findings from a phonological standpoint. However, the discussion on the Pahang dialect was limited, as his focus was on the Kelantan dialect. He described that the features in the Pahang dialect resembled the written form of the Malay language. After a 65-year interval, Karim and Ibrahim (1977) discussed a phonological aspect of the Ulu Tembeling dialect. The study concentrated on the non-Malay language system and unveiled new findings about the phonological system of the dialect used by the Malays in that region. Based on the phonological data, the study arrived at an unexpected conclusion that the Malay dialect spoken by the people in Ulu Tembeling significantly differed from the Malay dialect spoken on the West Coast. They found that the Ulu Tembeling dialect spoken by the Malays shared a characteristic of the Kelantan and Terengganu dialects.

Omar (1977) gave a comprehensive presentation on the phonological characteristics of a few regions of Peninsular Malaysia dialects based on her supervisee data. Pahang, she reasoned, belonged to the south group, which included Malacca, Johor, and other states. She classified these regions into their respective group. However, this perspective was reprimanded by Collins (1989, 1999) as these dialects were labelled based on the names of the states. Despite being criticised by some scholars, the perspective painted a picture of the forms of Pahang dialect phonology.

Collins (1983a, 1983b) addressed the issue in his two articles. He developed a deeper discussion about the phonological forms of Malay people in the Pahang River. However, his wide spectrum of discussion led to his comparative linguistics methods being questionable. Initially, he explained his findings from the phono logical standpoint and later based on historical context. Such a comparative study was somewhat perplexing due to the mixed methods used. He demonstrated that Pahangites, as a whole, did not speak

a single dialect. In his two papers, for instance, he concluded that Temerloh had a significant distinction with other remote areas, despite their close distance. This case could also occur in other parts of the Pahang River, as Hussien (1973) claimed that Pahang had experienced gradual changes in phonological features.

Omar (2015a) is one of the few experts researching all Malay dialects, including the Bruneian Malay dialect characteristics. However, the discussion of her findings did not differ significantly from that of her studies in 1977. She was more concerned with the form of regional dialect this time. It was observed from her division of subdialects of Pahang as Pekan, Raub, Benta, Kuala Lipis, Temerloh, and Hulu Tembeling (or Ulu Tembeling). However, her statement was intriguing as she considered Pekan as the main subdialect of Pahang or the standard dialect of Pahang, based on historical factors that hoist Pekan as the centre of royal government. This region may have been the site of an old settlement. Collins (1999) supports this viewpoint, stating that an old human settlement most likely began near a coast or a river. On the other hand, her writing is overly simple and descriptive about certain regions in Pahang. Her study of Pahang dialects substantially contributes to the knowledge foundation that indicates "what the dialects are like," as stated by Collins (1989, p. 238).

Apart from Collins (1983a, 1983b) and Asmah Omar (2015a), Idris (1989) also discussed her phonological findings, especially in Kampung Sertang, downstream of the Pahang River. Since Kampung Sertang is not far from Temerloh, the study was an extension of Collins' study (1983a, 1983b). Most of the phonological characteristics of this region, the Sertang variant, seemed to share with the regions that Collins reported. Her writing, similar to Asmah Omar's, is straightforward and descriptive.

Turning to the second issue, scholars have discussed the relationships among Pahang dialects using phonological findings. A study by Hussein (1973) is the most notable, however. Referring to phonological evidence, his classification of the Pahang dialect concludes that Pahang does not belong to any northern or southern group. It contradicted the statement put forward by Omar (1977). It is due to the high level of dialect mingling from other regions. He attempted to categorise certain Pahang regions as having a significant relationship with other regions. Some regions are linked to Johor and Malacca. Some Pahang regions reflected the phonological characteristic of Perak. Most of the East Coast of Pahang heavily shares with the Terengganu dialect. Some regions have Kelantan characteristics (Karim & Ibrahim, 1977). He briefly discussed a phonological feature of the Pahang River by stating, "...as we go up the river, we see a very gradual change of the pronoun awɔʔ 'you' to aoʔ, and finally, ɔʔ," implying a non-regional variety of phonological systems. The study briefly summarised the Pahang dialect.

The third issue is more closely related to the specific theme of this study and serves

as evidence of the comparative linguistics aspect. According to Hasrah et al. (2011, 2014), the dialect spread in the Jelai River and Lipis River indicated human movement from upstream to downstream. It can be seen in the evidence of kinship, which displays that the influence of Tanjung Bungor variants is diminishing when compared to other variants. According to Linehan (1936), the likelihood of the old society in this area moving from upstream to downstream is very likely. The gradual changes in the dialect occurred in stages beginning in the upstream area (Che Kob & Hasrah, 2009; Hasrah et al., 2011, 2014). This notion is similar to that stated earlier by Hussein. The Pahang River has the biggest type of phonological differences among those settlements. Hasrah et al. (2013) claimed that the locality of certain parts of the Pahang River spoke differently depending on how fast the river flowed. It is indeed a good impression. However, this study concluded that each remote area along this river has its way of pronouncing words.

Hasrah et al. (2013) assessed the historical linguistics of the Tembeling River region (or Ulu Tembeling). Their historical linguistics study was limited to four localities' innovation and retention features: Mat Daling, Bantal, Gusai, and Pagi. They found that the dialect of Hulu Tembeling [-nasal] accommodated the last consonant of a word, replaced by a certain plosive consonant in the same place of articulation of the omitted nasal sound. "Certain plosive consonant" refers to the alignment of /-m/ →

[-p], /n/ → [-t], and /-ŋ/ → [-k] consistently at the end of the word. The study revealed that not all characteristics of the Terengganu dialect were present in the Ulu Tembeling dialect. According to Omar (2015a), the most notable phonological characteristic of the Terengganu dialect is the /n/ → [-ŋ] change, but this was not observed in the Ulu Tembeling dialect.

The findings of the Pahang dialect phonological characteristic reported in Sturrock (1912), Karim and Ibrahim (1977), Omar (1977, 2015a), Collins (1983a, 1983b), and Idris (1989) facilitated in providing a fundamental overview of the dialectal phenomena in Pahang, although some of the discussions are district-based. Some scholars provided a general overview of the expansion of the Malay dialect in Malaysia based on phonological data (see Hussein, 1973; Karim & Ibrahim, 1977). The comparative linguistics approach is more relevant and suitable for discussing a language's history and changes. This particular approach was deployed by Che Kob and Hasrah (2009) and Hasrah et al. (2011, 2014) to assess the upstream of the Pahang River. Hasrah et al. (2011, 2014) examined the dispersion of phonological differences in depth of that area, whereby the distribution gradually travelled down to the river's channel downhill. The same phenomenon occurred in the middle of the Pahang River. Based on prior research, this present employed the comparative linguistics approach to extract the proto form of phoneme and lexical of the centre of the Pahang River.

METHODOLOGY

This study deployed the qualitative and *huluan* approach prescribed by Asmah Omar (2015b). The *huluan*, if understood literally, would bring a more erroneous interpretation than Omar's (2015b). The *huluan* proposed by Omar reflects the very beginning of a study (both *huluan* and *hiliran* definitions remarked by her). Hence, this study is fundamental to identifying the characteristic of central Pahang River variants.

The informant-based data involved 427 glossary words. Upon discussing informants, various scholars have opined different perspectives on the selection of gender, organ speech conditions, age, and native, among others. Some scholars were more inclined to women informants because of their original form of self-preserved (Ayatrohaedi, 1979; Che Kob, 2015). Ortin (in Boberg et al., 2018) and Chambers and Peter (2004) asserted that men are more suitable to be informants due to several more vernacular nature factors. However, Omar (2015b) emphasised that researchers should always be aware of local culture and taboos.

This present study discovered that, in addition to gender issues in dialectology, other factors (e.g., age and native/non-native person) were influential and should be considered. As a result, the following three critical factors were weighed while selecting the informants for this study: NFS or native, *fitrah* (able-bodied), and *sihat* (healthy), as emphasised in Zaidi et al. (2021). These three factors were deployed to determine the best informants for data collection. Hence, most of the visited locations involved an elderly man whose native articulation organ was still in good condition.

The interview commenced with a simple conversation. The purpose of this study and participation procedures were explained to be informants. As soon as the informants understood and agreed to participate in this study, the interviewer began asking them the names of things or abstract words, to which they responded in their native language. The interviewer recorded the interviewees' pronunciation using the International Phonetic Alphabet (IPA). This procedure continued until 427 words were collected in transliterated IPA form.

Next, the gathered data were analysed using Crowley's (1997) framework. The framework was applied to extract proto-phonemes. First, non-cognate words were discarded. The remaining cognates were arranged in Sound Correspondence Set (SCS). After that, a principle was applied to extract proto-phoneme from the cognates.

The SCS refers to a platform that extracts the proto-form of the phoneme. It is a linguistics workstation that can extract ancient phonemes and lexicons. The SCS draws out ancient phonemes and lexical, which facilitates researchers rebuilding an inventory of PCPr. However, after going through the criticism levelled by Gell-Mann and Ruhlen (2011), this study avoided reconstructing the forms of words onomatopoeia, loans, and coincidental words (in terms of pronunciation). For example, the word "road" is *jalan* in Malay, while *jalan* in Finnish has the same structure but a different meaning. Hence, only cognate words were used in the reconstruction

process. Table 1 lists several instances of the reconstructed *laɣi "run" by using SCS.

Table 2 shows the process of extracting proto phoneme *b. It presents the distribution of the/ sound for all five locations. As observed, the three types of distribution of /b/ are: the first two denote initial distribution, while the rest signifies distribution of /b/ in the medial position.

The studied locations had a distribution of the /b/ sound in initial and medial positions. It signifies a strong presence of the /b/ sound in PCPr and is eligible for reconstruction. It is where *b is found in most areas (initial and medial), thus the minimum problem for /b/ to be reconstructed. Therefore, the *b sound in PCPr is listed as an extracted proto phoneme, as displayed in Table 3.

Table 1
Examples of sound correspondence set[1]

	Va		Vb		Vc		Vd		Ve		Vf		Vg		Vh		*
/	l	:	l	:	l	:	l	:	l	:	l	:	l	:	l	/	*l
/	a	:	a	:	a	:	a	:	a	:	a	:	a	:	a	/	*a
/	ɣ	:	ɣ	:	ɣ	:	r	:	r	:	ɣ	:	ɣ	:	ɣ	/	*ɣ
/	i	:	i	:	i	:	i	:	i	:	i	:	i	:	i	/	*i

V= Variant

[1] The Asterisk sign refers to a proto symbol. For example, if an analysis has evidenced that /l/ is a reflex from the proto form, it is labelled as proto /l/ or *l. The same process applies to the second correspondent of the/a/ sound. The analysis then incorporated these resources into its logical order. As a result, the lexical proto discovered is *laɣi for the word "run."

Table 2
*Distribution of *b in PCPr*

MP	PCPr	Glos	Differential modulation
*bukit	*bukit	*hill*	KT, LDA, JRG, DDG, BMT; bukeʔ
*bəsaɣ	*bəsa	*big*	KT, LDA, DDG; bəsɔ JRG, BMT; beso
*libar	*liba	*width*	KT; lɛbɔ LDA, DDG; lebɔ JRG, BMT; lebo
*rambut	*ɣambut	*hair*	KT; LDA, JRG, BMT; ɣambɔʔ DDG; ɣambɔʔ
*tumbuh	*tumbuh	*grow*	KT, LDA, BMT; *tumboh JRG, DDG; ∅
*təbəl	*təbə	*thick*	KT; tebaᵊ LDA; təbɛj JRG, DDG, BMT; təbɛ

Table 3
Overview of /b/ sound distribution and its extracted form

Variant	b-	-b-	-b	Extracted
KT	b-	-b-	-	
LDA	b-	-b-	-	
DDG	b-	-b-	-	*b
JRG	b-	-b-	-	
BMT	b-	-b-	-	

The process has some criteria before a candidate is declared as a "Majority Win" (Campbell, 2013). It cannot be determined arbitrarily. Tight principles and criteria guide this excavation process. For example, the first row of the /l/ sound in Table 1 clearly is a win situation due to the absence of another candidate. As for the fourth row, some candidates (e.g., ɣ; r) take the proto form in synchronic construction. Only the majority is eligible to be reconstructed in this case. Crowley (1997) outlined the following criteria to identify proto phoneme:

1. The shape of ancient language changes should be an acceptable sense. In such a case, the decision must be based on solid evidence.
2. All changes should be minimised to the greatest extent possible.
3. A balanced ancient phoneme inventory is required for the reconstruction process.
4. A sound cannot be reconstructed in its proto form until it is absolutely eligible.

The listed criteria are only relevant for PCPr proto-phoneme reconstruction. Data from Adelaar (1992) were used in this study for comparison. This study excluded classification elements. Dialect classification will be discussed in a future study.

FINDINGS

Notably, 18 reconstructed types of ancient phonemes were observed based on the field research conducted in five locations (KT, LDA, JRG, DDG, and BMT). These 18 proto phonemes of PCPr included *p, *b, *t, *d, *k, *g, *m, *n, *ɲ *ŋ, *l, *s, *ɣ, *h, *c, *ɟ, *w, and *j. Based on the premise stated prior, these consonants were extracted using SCS. Adelaar's (1992) data were used as a comparison medium in a future discussion.

The PCPr successfully recorded a voiceless bilabial plosive /p/ with dispersion in all segments; initial, medial, and final. No element of innovation was observed for this sound. As a result, the /p/ sound in the PCPr variant was reconstructed as *p, which is a direct reflex from the MP. Despite the fact that LDA has NULL in Table 4, the alternate evidence verified the existence of /p/ on the final position.

There are a few types of modulation for words in this region. For instance, the word *thigh* is pronounced as [pəhə] for all variants except LDA. As tabulated in Table

Table 4
Proto /p/ distribution

MP	PCPr	Glos	Differential modulation
*paha(ʔ)	*pəhə	*thigh*	KT, JRG, DDG, BMT; pəhə LDA; pəhəʷ
*pipi(ʔ)	*pipi	*cheek*	KT, JRG, DDG, BMT; pipi LDA; pipij
*nipis	*nipis	*thin*	KT, LDA, JRG, BMT; nipeh DDG; tipeh
*api	*api	*fire*	KT, JRG, DDG, BMT; api LDA; apij
*hatəp	*atap	*roof*	KT, LDA, JRG, DDG, BMT; ataʔ
*asəp	*asap	*smoke*	KT, JRG, BMT; asaʔ LDA; Ø DDG; asɑʔ

2, this region has its own pronounces, such as [pəhəʷ]. Similarly, the word *cheek* in KT, JRG, DDG, and BMT is [pipi], but in LDA, it is pronounced as [pipij]. A pattern of semi-vowel insertion is noted at the final position of the open-ended word. The word *fire* reflects the same thing as when LDA is pronounced as [apij]. It was kept in mind while assessing the next issues. The following table provides an example of *p distribution in the PCPr variant.

Situations for voiced bilabial plosives /b/ in Table 3 differ from the /p/ sound in PCPr. It is most obvious in the distribution of /b/ for variants in PCPr, which exist only on the initial and medial positions. There is no evidence that /b/ exists in the last position for the 427 tested words. Phonetic acoustic studies by Shahidi et al. (2012) showed that the Malay language system does not have such sound in the final position. It is consistent with the MP and, possibly, a few other Malay dialects.

Table 5 lists a few groups of words with different pronunciations. In Table 5, JRG and BMT share the same phonological characteristics for the following words: *big*, *width*, and *thick*, which differ from the rest. It included DDG, but it is less visible than the other two. More samples are presented in Table 5.

The distribution of voiceless alveolar plosives /t/, as listed in Table 4, is found in all word segments. It is portrayed by synchronic discovery, as shown in Table 6. However, the situation in the final position differs slightly from the /p/ sound when the final /t/ sound is pronounced as [ʔ] at the PCPr variation level. For example, PCPr *bukit in KT, LDA, JRG, DDG, and BMT is pronounced as bukeʔ; displaying that the [ʔ] sound simply behaves as an allophone for phoneme /t/. Due to the ability of the relatively restricted [ʔ] sound to change the original meaning, the reconstructed phonemes will be *t solely.

At this point, one may conclude that LDA has a different system, such as how LDA reacts to the word *drift* as PCPr *aɲut. In LDA, it is pronounced as [aɲəʔ]—an abnormal sound change. It is because LDA tends to naturalise the [u] sound, whereas BMT weakens from [u] to [ɔ]. The final [ʔ] sound is an allophone of *t and consistently appears for all other variations. Back to the salt mines, there variation of o; ə; ɔ in combination with C_C indicates that LDA most likely has its type of group, whereas

Table 5
Proto /b/ distribution

MP	PCPr	Glos	Differential modulation
*bukit	*bukit	*hill*	KT, LDA, JRG, DDG, BMT; bukeʔ
*bəsaɣ	*bəsa	*big*	KT, LDA, DDG; bəsɔ JRG, BMT; beso
*libar	*liba	*width*	KT; lɛbɔ LDA, DDG; lebɔ JRG, BMT; lebo
*rambut	*ɣambut	*hair*	KT; LDA, JRG, BMT; ɣamboʔ DDG; ɣambɔʔ
*tumbuh	*tumbuh	*grow*	KT, LDA, BMT; *tumboh JRG, DDG; ∅
*təbəl	*təbə	*thick*	KT; tebaᵊ LDA; təbɛj JRG, DDG, BMT; təbɛ

BMT is in another group. Further discussion depicts if BMT also has its group.

The PCPr revealed voiced plosive alveolar /d/ in two-syllable word positions. The /d/ sound is fixed in the initial and medial positions. The MP has the same /d/ distribution characteristic. It indicates that the PCPr shares a feature and enables /d/ to be reconstructed as *d. To enumerate, PCPr *d reflexes to *d in MP.

The sound of /d/ in PCPr is distinguished by several vocal differences in its prefix and suffix. It can be observed for the combination of /-udo-/ for the word *duduk* in Table 5. The /d/ functions as a "middle person". Some variants are released as /-do-/, while others are released as /-dɔ-/. The LDA, a variant of /-dɔ-/, exhibits similar consistency. Referring to the word *live*s in Table 7, LDA pronounces [idɔʔ]. Hence, does LDA affect the presence of /u/ that precedes /d/, or does /u/precede /d/ and affect the vocal proceeding /d/? The uniqueness noted in LDA is discussed later. See Table 7 for other distributions.

The PCPr /k/ in Table 6 displays inconsistency of distribution when /k/, the voiceless plosive, behaves like a voiced plosive, especially in the final position. For PCPr *p and *t, these two proto phonemes can be found in all three positions: initial, medial, and final. However, the situation of /k/ in the final position does not state existence due to the multiple allophones or chained allophones in the final syllables (Peterson & Harary, 1960, p. 157). For example, the word *kakak* or "sister" of the PCPr variants is pronounced in LDA as kakɔʔ and BMT as akoʔ. After deep analysis, allophones [ɔ] and [o] are representative of phonemes /a/, while [ʔ] sounds allophone to /k/.

Table 6
Proto /t/ distribution

MP	PCPr	Glos	Differential modulation
*tumit	*tumit	*heel*	KT, LDA, JRG, DDG, BMT; tumeʔ
*tuhãʔ	*tuwə	*old*	KT, LDA, JRG, DDG, BMT; tuwə
*hatəp	*atap	*roof*	KT, LDA, JRG, DDG, BMT; ataʔ
*bukit	*bukit	*hill*	KT, LDA, JRG, DDG, BMT; bukeʔ
*hañut	*aɲut	*drift*	KT, JRG, DDG; aɲoʔ LDA; aɲəʔ BMT; aɲoʔ

Table 7
Proto /d/ distribution

MP	PCPr	Glos	Differential modulation
*darah	*daɣah	*blood*	KT, LDA, JRG, DDG, BMT; daɣɔh
*dahi	*daj	*forehead*	KT, BMT; dai LDA, JRG, DDG; daj
*duduk	*duduk	*sit*	KT, JRG, DDG, BMT; dudoʔ LDA; dudɔʔ
*lidah	*lidah	*tongue*	KT, DDG; lidah LDA, JRG, BMT; lidoh
*m/udaʔ	*mudə	*young*	KT, LDA, JRG, DDG, BMT; mudə
*hidup	*idup	*live*	KT, JRG, DDG, BMT; idop LDA; idɔʔ

Another example of similar data is noted for gloss *awak* or "you". Three PCPr variants in LDA, JRG, and BMT displayed different modulations; a.ɔʔ; awoʔ; and ăoʔ, respectively. The study removed the initial part as ɔʔ; oʔ; and oʔ to unleash /-k/. From here, multiple allophones can be identified by making [ʔ] as a marker that it is a phoneme representation of /-k/. As for ɔ; o; and o sounds, they represent /-a/. These results indicate that /k/ has a high probability of being reconstructed from antecedent MP as a PCPr *k. Table 8 lists the distribution of *k in PCPr and its variants.

The PCPr variants retained the /g/ sound in most of their speech. This phoneme has limited distribution, such as initial and medial positions (Table 7). However, the limitations of the /g/ sound in the final position can be guessed based on two patterns of the last voiced plosives in the same spot earlier. Most of the time, the /g/ sound exists as a glottal stop [ʔ] at the final position. However, these conditions are confined to words absorbed from foreign languages, such as English and Arabic. Instances of this scenario are listed in Table 9.

Although MP *m exists in all positions, it does not occur in PCPr (Table 8). The distribution of PCPr *m is limited to two places: initial and medial segments. The PCPr variant drops the /m/ sound in the final position. For instance, LDA, JRG, DDG, and BMT variants constitute *six* as [nã]. This pattern is similar to other words, such as *chicken* [aja], *salt* [gaɣa], as well as *black* as ita; itaˀ; and itã. Examples of the initial and medial distributions are listed in Table 10.

Table 8
Proto /k/ distribution

MP	PCPr	Glos	Differential modulation
*kA-iri	*kiɣi	*left*	KT, LDA, JRG, DDG, BMT; kiɣi
*kayuʔ	*kajuh	*paddle*	KT, LDA, JRG, DDG, BMT; kajoh
*kəriŋ	*kəriŋ	*dry*	KT, LDA, JRG, BMT; kəɣɛ DDG; kəɣe
*akar	*aka	*root*	KT, DDG; akɑ LDA, BMT; akɔ JRG; ako
*bukit	*bukit	*hill*	KT, LDA, JRG, DDG, BMT; bukeʔ
*kaki	*kaki	*leg*	KT; kakij LDA, JRG, DDG, BMT; kaki

Table 9
Proto /g/ distribution

MP	PCPr	Glos	Differential modulation
*gigi	*gigi	*teeth*	KT *gigij LDA, JRG, DDG, BMT; gigi
*gusuk	*gusuk	*rub*	KT, LDA; gɔsɔʔ JRG, DDG, BMT; goso?
*daguʔ	*dagu	*chin*	KT, LDA, DDG, BMT; dagu JRG; daguʔ
*gigit	*gigit	*bite*	KT, JRG, DDG, BMT; gigeʔ LDA; gigeʔ
*dagiŋ	*dagi	*meat*	KT, LDA, JRG, DDG, BMT; dagɛ
*pergi	*pegi	*go*	KT; Ø LDA, JRG, DDG, BMT; pəgi

The PCPr reconstructed /n/ as *n based on synchrony evidence. Nonetheless, the existence of the /n/ sound in the final position is insufficient and cannot be proven due to a consistent pattern of absence (Table 9). Referring to our previous interaction with PCPr *m, this sinking nasal phenomenon in the final position is identical. Examples of the NULL distribution in the final position are *hutan* "forest" [uta], *hujan* "rain" [uɟa], and *ikan* "fish" [ika. Although PCPr *n was rebuilt, as previously stated, PCPr variants lack /n/ representative in the final position. The distribution of PCPr *n in the initial and medial positions is tabulated in Table 11.

The final segment of words for the /n/ sound in LDA is an abnormal sound change. It is rare to the most known dialect in Pahang, as Crowley (1997) stated, "… they do not obviously fit into any of the categories…." (p. 55), MP's final /n/ sound is gliding [j] (see LDA in Table 10). This pattern is consistent, and the origin of this characteristic was sought. More data are presented in Table 12 to display this unique change.

Two examples in Table 11 demonstrate the presence of /ɲ/ at the PCPr variant level in the initial and medial positions. Given the Malay and its non-consonant clustered system at the final position, it is reasonable

Table 10
Proto /m/ distribution

MP	PCPr	Glos	Differential modulation
*mata	*matə	*eye*	KT, LDA, JRG, DDG; matə BMT; mato
*malu	*malu	*shy*	KT, JRG, DDG, BMT; malu LDA; maluw
*m/udaʔ	*muda	*young*	KT, LDA, JRG, DDG, BMT; mudə
*ləmək	*ləmak	*fat*	KT, LDA, JRG, DDG, BMT; ləmɔʔ
*hAmpədu	*əmpədu	*bile*	KT, LDA, JRG, DDG, BMT; əmpədu
*səmpit	*səmpit	*narrow*	KT, LDA, JRG, DDG; səmpeʔ BMT; Ø
*limaʔ	*limə	*five*	KT; Ø, LDA, JRG, DDG, BMT; limə

Table 11
Proto /n/ distribution

MP	PCPr	Glos	Differential modulation
*ənəm	*na	*six*	KT; Ø LDA, JRG, DDG, BMT; nã
*naik	*naik	*ride*[2]	KT; Ø LDA, JRG, DDG, BMT; naeʔ
*nipis	*nipis	*thin*	KT, LDA, JRG, BMT; nipɛh DDG; Ø
*dindiŋ	*dindi	*wall*	KT; Ø LDA, JRG, DDG, BMT; dindɛ
*bini	*bini	*wife*	KT, JRG, BMT; bini LDA; binij DDG; Ø
*paɲɟaŋ	*paɲɟa	*long*	KT; paɲɟam LDA, JRG, DDG, BMT; paɲɟã

[2] This word [naik] has multiple meanings, and sometimes it overlaps. Notably, [naik] is a verb, such as "*John drove a car to a workplace*". Drove shares the same meaning with [naik]. For example, "*The amount of people not understanding linguistics is increasing*". Increasing here reflects the word [naik].

to conclude that the existence of sound /ɲ/ in that area is highly unlikely. However, MP *ɲ reflexes direct to PCPr *ɲ despite the absence of /ɲ/ in the final segment.

LDA and JRG have their way, which is dissimilar from /ɲ/ but refers to the [ɔ] sound that precedes /ɲ/. The different modulation types indicate that these two regions have altered the phonological aspect from its origin. From directionality, these changes have encountered many innovations, from [a] to [ɔ]. BMT also changed from [a] to [o]. The changes in sound only happen in the final syllable (Hasrah et al., 2014). For example, the JRG and BMT variants do not change [a] to any kind of back vowel from its first syllable for the word *mosquitoes*.

The MP has no instances for /ŋ/ on the initial position. However, the PCPr in Table 12 displays /ŋ/ distribution across all segments except the final position. Most of the [ŋ] sound in Malay words exists in the final position, but it is dropped mostly in the PCPr variant. It is interesting because there are already two examples ([m] & [n]) of nasal sounds eliminated at the final position. Some examples of [ŋ] sound eliminated in PCPr at the final position are *belakang* "back" [blaka], *bintang* "star" [binta], and *hidung* "nose" [idu]. Despite that, PCPr did reconstruct *ŋ from MP descended. More distribution options are listed in Table 14.

The DDG highlights something unusual when other variants NULL-ed final /n/, where [ŋ] abnormally appears in the DDG

Table 12
Consistency of [j] at final segment representing /n/ in LDA

MP	PCPr	Glos	LDA
*kanan	*kana	*right (direction)*	kanaj
*lap-an	*lapa	*eight*	lapaj
*ma/ka	*maka	*eat*	makaj
*əsaʔ ambil-an	*smila	*nine*	səmbilaj
*turun	*tuɣu	*step down*	tuɣuj

Table 13
Proto /ɲ/ distribution

MP	PCPr	Glos	Differential modulation
*ɲamuk	*ɲamuk	*mosquitoes*	KT, JRG, BMT; ɲamoʔ DDG; ɲamɔʔ LDA; Ø
*kuɲah	*kuɲah	*chew*	KT, DDG; kuɲah LDA, JRG; kuɲɔh, BMT; kuɲoh

Table 14
Proto /ŋ/ distribution

MP	PCPr	Glos	Differential modulation
Ø	*ŋilu	*grate*	KT; Ø LDA, JRG, DDG, BMT; ŋilu
*aŋin	*aŋi	*wind*	KT; aŋem LDA; aŋen JRG; aŋɛ DDG; aŋiŋ BMT; aŋe
*bəŋkak	*bəŋkak	*swollen*	KT Ø, LDA BMT; bəŋkɔʔ JRG bəŋkoʔ DDG; bəŋkaʔ

variant. This feature reflects the Terengganu type when the /n/ sound on the final segment is occasionally replaced by [ŋ] (Table 13). Is DDG a distinct type of group? The answer is no. The data shows no consistent pattern of the final segment [n] becoming [ŋ] sound. Table 15 lists examples of the inconsistency of [n]→ [ŋ] in the final segment.

Fricative sounds, such as /s/ and /h/, were recorded in Adelaar's study, and usually, they are distributed across the segments. Table 14 lists instances of PCPr /s/. This fricative sound exists in the first two places, but no data can support its existence at the final position in all variants of PCPr. Most of the /s/ at the end of a word are usually replaced by the [h] sound. It is difficult to convince if [h] is a phoneme or representative of /s/. Allophone is clarified to address this matter. The easiest way to determine the [h] sound

is that either this sound complements /s/ or arbitrarily appears.

Based on the analysis, the [h] sound is close to the allophone of the /s/ sound, mainly because the [h] sound complements /s/ only in the final position. In addition, [h] does not bring any new meaning. So, [h] is classified as allophone to /s/. This case is not too far from the unvoiced plosive soft palate /k/ issue for the same position. At this point, PCPr *s is reconstructed from MP. Table 16 tabulates more examples for *s distribution.

Is [h] predestination stuck as an allophone, such as the [ʔ] sound, at the end of a word? Referring to the analysed data, [h] sound does exist in PCPr (Table 15). It is a phoneme but only limited to two places: medial and final. The Malay language does have /h/ sound on the initial, but the PCPr variant removed the /h/ sound and enabled

Table 15
Inconsistency of final [ŋ]

MP	PCPr	Glos	DDG
*a(bw)an	*awa	*cloud*	awaᵊ
*bulan	*bula	*moon*	bulaᵊ
*dahan	*daha	*branch*	dahɛ
*huɹan	*uɹa	*rain*	udʒaᵊ
*hutan	*uta	*forest*	utɛ
*ikan	*ika	*fish*	ikɛ

Table 16
Proto /s/ distribution

MP	PCPr	Glos	Differential modulation
*sakit	*sakit	*sick*	KT, LDA, JRG, DDG, BMT; sakiʔ
*səmpit	*səmpit	*narrow*	KT, LDA, JRG, DDG; səmpeʔ BMT; Ø
*siku	*siku	*elbow*	KT, LDA; sikuw JRG, DDG, BMT; siku
*asəp	*asap	*smoke*	KT, JRG, BMT; asaʔ DDG; asɑʔ LDA; Ø
*basah	*basah	*wet*	KT; basah LDA; basɔh JRG, DDG, BMT; basoh
*bəsar	*bəsa	*big*	KT, LDA, DDG; bəsɔ JRG, BMT; bəso

the vowel to become the head of the word. This characteristic is known as apheresis (Crowley, 1997). This phenomenon is consistent across all data. Since /h/ can distinguish itself as a phoneme, the PCPr rebuilt /h/ as *h from its antecedent, MP. The rest of the data and the distribution of /h/is presented in Table 17.

The MP *r phenomenon is appealing in certain ways. The data showed that MP *r (Table 16) exists as /ɣ/ in PCPr. Except for the last position, the sound remains consistent across all segments. In the PCPr version, the /ɣ/ sound appears consistently on the initial and medial positions. Notably, MP *r is innovated to PCPr *ɣ on this basis. As a result, MP *r has vanished totally in this protolanguage and its variation. Table 18 shows the distributions of MP *r and PCPr *ɣ.

Most northern hemisphere dialects tend to remove the final /l/, which is no exception for PCPr variations. In that posture, the lateral sound always seems to be NULL. This pattern is observed in the reconstructed lexical of PCPr, such as *tebal* "thick" [təba], *jual* "sell" [ɟua], and *tumpul* "dull" [tumpu] (Table 17). The data indicated that the final /l/ sound appears as /k/ for *ambil* "take" [ambik]. However, it is an irregular form due to the presence of the ambient words *ambil* and *ambik*. Adelaar (1992) noted the same for the words *kecik* and *kecil* (both refer to "small"). Due to data limitations, /l/ on the final position cannot be consistently proven. The two other positions showed that /l/ is PCPr *l. Refer to Table 19 for the distribution of *l.

Voiceless palatal plosive /c/ was observed in MP, and it is not impossible

Table 17
Proto /h/ distribution

MP	PCPr	Glos	Differential modulation
*paha	*pəhə	*thigh*	KT, JRG, DDG, BMT; pəhə LDA; peheʷ
*dahan	*daha	*branch*	LDA; dahã JRG, BMT; dahaˀ DDG; dahɛ KT; Ø
*basah	*basah	*wet*	KT; basah LDA; basɔh JRG, DDG, BMT; basoh
*guruh	*guɣuh	*thunder*	KT, DDG, BMT; guɣɔh LDA; Ø JRG; guɣoh
*bArisih	*bəɣsih	*clean*	KT, DDG; bəɣsɛh LDA; bəɣseh JRG, BMT; bəse/ih

Table 18
Proto /ɣ/ distribution

MP	PCPr	Glos	Differential modulation
*rambut	*ɣambut	*hair*	KT, LDA, JRG, BMT; ɣamboʔ DDG; ɣambɔʔ
Ø	*ɣaɟi	*diligent*	KT; ɣaɟeŋ LDA; ɣaɟen JRG, BMT; ɣaɟɛ DDG; ɣaɟe
Ø	*ɣaha	*jaw*	KT; gahaŋ LDA, DDG, BMT; ɣaha JRG; Ø
*arus	*aɣəh	*flow*	KT; Ø LDA, BMT; aɣəh JRG; aɣuh DDG; aɣoh
*bərat	*bəɣat	*heavy*	KT, LDA, JRG, BMT; bəɣaʔ DDG; bəɣɛʔ
*bArisih	*bəɣsih	*clean*	KT, DDG; bəɣsɛh LDA; bəɣseh JRG, BMT; bəse/ih

for its descendants to have this sound. It is further supported by the PCPr *c distribution in initial and medial positions (Table 18). However, this sound is missing in the word-final segments as MP, although it is a voiceless plosive, such as /p/. This behaviour reflects PCPr *-t, but *t is apocope-d and *-c is non-existent in the first place (Table 20 for distribution information).

Voiced palatal plosive of the /ɟ/ sound situation resembles PCPr *c, but its distribution is limited to the initial and medial positions. These two sounds are a relic of an earlier version of the ancient form, MP. Although there are a few vowel differences, all variants have this sound. Hence, PCPr /ɟ/ is reconstructed as *ɟ. Instances of PCPr *ɟ distribution are displayed in Table 21.

Regrettably, MP does not have a matching example of the/ sound on the initial position of a word. The PCPr has evidence that /w/ exists on the first position of words, such as [wa] "grandmother" (see

Table 19
Proto /l/ distribution

MP	PCPr	Glos	Differential modulation
*lari	*laɣi	*run*	KT, LDA, JRG, DDG, BMT; laɣi
*lihər	*lihi	*neck*	KT, LDA, JRG, DDG, BMT; lehɛ
*ləmək	*ləmək	*fat*	KT, LDA, DDG, BMT; ləmɔʔ JRG; ləmoʔ
*bəli	*bəli	*buy*	KT, LDA, DDG, JRG, BMT; bəli
*kali	*ɡali	*dig*	KT, LDA, JRG, DDG, BMT; ɡali
*bAlakaŋ	*blaka	*back (body)*	KT; blakaŋ LDA, JRG, DDG; blakā BMT; blakɑ

Table 20
Proto /c/ distribution

MP	PCPr	Glos	Differential modulation
*caciŋ	*caci	*worm*	KT; caceŋ LDA, JRG; cace DDG, BMT; cacɛ
*cucuʔ	*cucu	*grandson*	KT, JRG, DDG, BMT; cucu LDA; cucuw
*kəcil	*kəcik	*small*	KT, JRG, DDG, BMT; kəciʔ LDA; kəcɛ
Ø	*kucə	*cat*	KT; kuceŋ LDA; kucɛ JRG, BMT; kuce DDG: kucɛⁿ
Ø	*kəci	*urinate*	KT, BMT; kəcɛ LDA; kəncɛ JRG; kəce DDG; kənei

Table 21
Proto /ɟ/ distribution

MP	PCPr	Glos	Differential modulation
*ɟahət	*ɟahat	*bad*	KT; ɟahat LDA, JRG, BMT; ɟahaʔ DDG; ɟeheʔ
*ɟari	*ɟaɣi	*finger*	KT, LDA, DDG, BMT; ɟaɣi, JRG; ɟaɹi
*ɟatuh	*ɟaɣi	*fall (v)*	KT, LDA, JRG, DDG, BMT; ɟatoh
*huɟan	*uɟa	*rain*	KT, LDA; uɟan JRG; uɟa DDG; uɟaᵊ BMT; uɟᵊ
*paŋɟaŋ	*panɟa	*long*	KT; panɟam LDA, JRG, DDG, BMT; panɟa
*taɟəm	*taɟa	*sharp (adv)*	KT, LDA; taɟā JRG, BMT; taɟa DDG; taɟam

Table 20). The word is commonly used by people living along the East Coast, including Terengganu and Kelantan. Table 22 shows some examples of the dissemination of /w/.

Based on the prior discussion on the /h/ sound, /h/ is not all alone in its distribution range. Both /h/ and /j/ are among the inner-in-the-way to all phonemes discussed. It is because; these two phonemes are only distributed in the medial and final positions. The /j/ sound is not present in the initial position based on the inventory data. It indicates that /h/ and /j/ are among the most distinct phonemes. Table 23 lists several examples.

Table 22
Proto /w/ distribution

MP	PCPr	Glos	Differential modulation
Ø	*wa	*grandmother*	KT; wan LDA; wæ̃ JRG, BMT; weʔ DDG; waᵊ
*a(bw)an	*awa	*cloud (sky)*	KT, LDA, JRG; awan DDG, BMT; awaᵊ
*sawaʔ	*sawə	*phyton*	KT, LDA, JRG, DDG, BMT; sawə

Table 23
Proto /j/ distribution

MP	PCPr	Glos	Differential modulation
*kajuʔ	*kaju	*paddle (v)*	KT, LDA, JRG, DDG, BMT; kaju
Ø	*aja	*chicken*	KT, LDA, JRG, DDG, BMT; aja
*air	*aj	*water*	KT, LDA, DDG; aj JRG; aᵊ BMT; ae
*akiʔ	*akij	*grandfather*	KT; Ø LDA, JRG, BMT; akij DDG; aki

DISCUSSION

Notably, PCPr has 18 consonants consisting of plosive, fricative, nasal, affricative, lateral, and semi-vowel (*p, *b, *t, *d, *k, *g, *m, *n, *ɲ, *ŋ, *l, *s, *ɣ, *h, *c, *ɟ, *w, and *j). Although all 18 consonants were reconstructed, not all worked in all word segments. Some words merely served as phonemes in the initial and medial positions, while some were present in the medial and final positions.

This discussion goes over each PCPR variant one by one, starting with the plosive sound. All plosive variants from the MP are present in PCPR variants, except for [ʔ] sound. For bilabial plosive, voiceless /p/, /t/, /k/, and voiced plosive /b/, /d/, and /g/ were all reconstructed as PCPr variations but with a different distribution principle. Voiceless /p/, /t/, and /k/ are recorded in the initial and middle of the word, as well as an allophone (glottal plosive [ʔ]) in the closed syllable-final segment.

A similar scenario applies to/b/, /d/, and /g/. These consonants are distributed across segments, except closed end-segment. It is the nature of the Malay language, which does not have a voiced plosive sound in the final position of the closed syllable. Two possibilities may occur if the final position

contains the sounds /b/, /d/, and /g/. First, it transforms to a glottal stop as an allophone [ʔ], and second, it originates from a foreign word derived from English and Arabic languages.

The nasal sound of the PCPr variety starts to diverge significantly. First, the nasal /m/ sound exists consistently in two positions, at the initial and middle of the word, but dropped in the final position (except for the KT variant). At the end of the segment, KT "converts" the /ŋ/ sound to the /m/ sound, which is unusual for the rest of the variants. This dialect is typically spoken by those from the East Coast, particularly in southern Thailand. However, such a distribution is inconsistent. Some data show KT drops /m/ totally, while some transform nasal velar to /m/ sound. It is, however, inconsistent based on those two sets of differences.

Nasal /n/ in PCPr variants behaves the same as in PCPr /m/ variants, except for LDA. While the KT variant has the variation of /ŋ/ → [m]#, the LDA has n# → [j]# that deviates from transformation constraints in a similar articulation. This variation can only be found in the final position of the closed word. It has yet to be recorded in any Pahang dialect. Most likely, "a glide phenomenon" may occur in the final position that replaces /n/ with [j]. It is, in fact, not uncommon.

The DDG, within the same context, has its unique characteristics. It is notable when the /n/ sound in the final position is taken out from its ancestor, MP. Clearly, this reflects a similar feature as other PCPr variants, except for LDA. What distinguishes DDG from its variants is its minor sound features that follow the front vowel [a], e.g., [udʒaˀ], [awaˀ], dan [bulaˀ]. This feature, however, is inconsistent because some features lack minor sound features, such as [utɛ], [ikɛ], and [dahɛ]. The three possibilities are listed below in light of DDG:

1. The transition of consonant /n/ in the final position to a single vowel sound and its gradual evolvement to create a minor sound in that position or,
2. the /n/ consonant is gradually losing its nasal appearance as it becomes a minor sound, thus leading to a direct absolute abortion or,
3. sporadic.

Referring to the concept of directionality (Campbell, 2013), the second notion is more plausible in the stance of this study. If the first hypothesis is selected, there is room for uneconomical transformation as the minor sound may be a nasal element occurring as an allophone. If it goes from "exist" to nothing and then reappears in a minor form, it reflects the inverse of the concept of directionality.

The second hypothesis, pertaining to the gradual transition from nasal consonants to minor sounds and then to total abortion, appears more plausible. Based on directionality, the transformation from nasal to minor forms, among others, is completely dropped more logically rational when compared to the hypothesis of "exist" to "disappear" and back to be a minor sound. There is a logical explanation for that. It differs from sporadic assumption because it can refer to something that occurs randomly but cannot be traced back to a specific cause.

It is determined by the level of influence within or outside the DDG area. That would be logic.

The fricative /s/ sound appears at the initial and medial positions of the word. However, it differs from /h/, which appears in the middle and end positions of the word. The fricative consonant /ɣ/ reflects another story. It is a phoneme that descends from MP *r and evolves into /ɣ/. The distribution of /ɣ/ is limited to two positions (initial and medial), whereas MP *r can be found in all word segments. These three fricative consonants have their characteristics.

The remaining consonants of the PCPr variant are /c/, /ɟ/, /w/, and /j/. The distributions are parallel in the initial and middle positions of the word for affricate consonants, while the semi-vowel consonants of /w/ and /j/ are only distributed in the middle position of the word, except /j/ that, is distributed in the middle and last segments. Details about /j/ are inconsistent and demand in-depth investigation not because it is unique but illogical based on the distribution of /-n/ to [-j] in all Malay dialects.

As for the reconstructed proto-language, PCPr has encountered a few changes based on multiple phonemes eliminated for certain positions from the MP form. It is ascribed to internal and external influences. Internal influence stems from the community's population that lives deep in a remote area. External influence is due to the population of the immigrant community that migrated from the Tembeling River. Based on their phonological evidence, they are believed to have migrated from Kelantan and Terengganu (Karim & Ibrahim, 1977).

Nevertheless, not many aspects can be discussed because this observation also requires a geographical viewpoint. Cross-field approaches can help unveil the phenomenon of language along the Pahang River. There are a few gaps in this writing and would benefit from further research work, including cross-field evaluation to extend and further conclude the findings of this present study collectively, as listed in the following:

1. More methodological work is needed to emphasise the phonological relationship between a variant of PCPr (including a classification of this proto-language) and its ancestor. More studies could explore a phenomenon feature of the last syllables as differential modulation always occurs in that certain position.

2. More data should be collected from multiple locations to enhance the findings. A group with interesting phonological characteristic(s) might have been overlooked. Some villages in this district accommodate an aboriginal group called Jakun. Hence, circumspect is highly required.

3. Local settlement in a river locality could be the main reason for the gradual changes noted in the Jerantut dialect. Perhaps, further research work may employ Geographical Information System (GIS) to decide if there is a second rationale.

CONCLUSION

This study reconstructed the proto phoneme of consonants for a subdialect in the central basin of the Pahang River by employing the comparative linguistics approach. For this study purpose, five areas were selected (KT, LDA, JRG, DDG, dan BMT). The findings revealed that the PCPr had 18 ancient consonant phonemes. The distribution of all these consonants is diverse and depends on the type of consonant. A vocalic feature of PCPr, such as vowels and diphthongs, should be the subject of additional discussion to reach definitive conclusions about the phonological changes between PCPr and PM.

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SOCIAL SCIENCES & HUMANITIES

A Narrative Structure Analysis of Alice Sebold's *The Lovely Bones*

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ABSTRACT

This article analyses how rape narratives provide insights into the conceptualization of rape, trauma, abuse, and recovery of rape victims. Using William Labov's theoretical model of narrative structure analysis and Michael Halliday's transitivity system, the article examines Alice Sebold's rape narrative, *The Lovely Bones* (henceforth *TLB*). The analysis shows that the narrative structure of rape narratives helps understand deeper meanings and underpinned concepts of rape. Such meanings and concepts reveal the real horrors of rape, the gravity of the pain and suffering of rape victims, and the ways of their eventual recovery. Despite its limitations to only *TLB*, the article offers potential alternative approaches to examine rape narratives to uncover the deeper meanings and suggests new concepts of rape and sexual violence affecting the perspectives to be taken while dealing with rape in general and rape victims being women and children in particular.

Keywords: Narrative analysis, rape, stylistics, transitivity system, trauma

INTRODUCTION

Stories are fundamental to all experiences of human life (Boyd et al., 2020). Stories are channels making meaning and enable us to order and make sense of events

and situations around us (Bruner, 2003; Polletta et al., 2011; Presser, 2016; White, 1980). When someone tells a story, s/he constructs it into a narrative form. Therefore, a narrative is the main constituent of the meaning system construes human experiences and a style of communication that arranges the experiences into meaningful periods (Polkinghorne, 1988). Moreover, a narrative is a sequence: the events are deliberately selected, connected, organized, and evaluated as meaningful for an audience (Hinchman & Hinchman, 1997).

Given that the function of reportability in narrative helps determine the nature of events being interesting and worthy to attract the readers' attention. On the other hand, if a narrative has insufficient reportability, it would interrupt or "evoke the crushing response, 'So what?'" (Labov, 2013, p. 21). Additionally, narrative functions as a scientific investigation of an event(s) in which the agency is attributed to the character(s) of the story, and causal links between the characters and the events are inferred (M. Murray, 2003). Using multiple categories of narrative structure, a narrator constructs his/her stories in cooperation with others. As a result, we are provided with ideologies reinforcing our stories and life experiences.

Stories exhibited whose voices are heard and whose are silenced (Gilbert, 1994). Rape narratives and rape memoirs allow rape victims to control their experiences and depict the horrific reality of rape without modifying their narratives under the influence of prevailing culturally sanctioned practices (Probyn, 2005; Roeder, 2015). Rape narratives have the power to shame readers, and by providing the protagonist's reaction, the mode allows the audience to question their assumptions about rape. The scope of rape narratives includes understanding the horrors of rape, rape practices, rape myths, the pain and suffering of rape victims, and the survival of rape victims, mostly women and children. In Morrison's (1970) rape narrative *The Bluest Eye*, Pecola's story is shared; she was eleven years old when she was brutally raped. The story centralizes rape, the most widespread, outrageous, traumatic, life-changing experience. Roynon (2014) states that *The Bluest Eye* explores the vulnerability of young girls and how specific cultural and economic circumstances shape the vulnerability and those who exploit it. The manipulation of voice and point of view (i.e., the use of silence and euphemism as well as graphic details of rape) depicted the oppression, exploitation, and destruction of Pecola, the rape victim.

Differently, Gay (2017), in her rape memoir, *Hunger*, shares her brutal gang rape (at the age of twelve) and its severe impacts on her post-assault life. Jurecic and Marchalik (2017) discussed that the memoir begins with Gay's rape, and the following pages reveal how the consequences of the act affected her mind and body for the next 30 years. However, she never gets maudlin; instead, she insists that readers reorganize the daily indignities and cruelties she endures. Similarly, Anderson (1999) speaks about her rape in the book *Speak* and shares the traumatizing and destructive experiences of her rape. The story portrays a gloomy vision of the social environment in which the protagonist lives. Being a rape victim, however, Anderson emphasized her resistance, resourcefulness, and emotional strength. The story reinforced the dynamics of trauma, resistance, development, and recovery of the rape victim (Ahmed, 2019). In this line of giving voice to the voiceless, Sebold (2002) writes *TLB*, a story of Susie Salmon, who was raped and ended. Susie was fourteen when she was savagely raped

and butchered in the hole in the ground by her neighbor, Mr. Harvey, a thirty-six-year-old man. Thereafter, she opens her eyes to her heaven and yearns to return to earth to continue her life that ended abruptly. Unable to return, she speaks from beyond the grave. In this manner, Susie can access the lives on earth and frequently visit her past, which helps provide minute details of her rape experiences.

Narrative analysis has emerged as a scholarly field in the last three decades. This multifaceted and multidisciplinary field of research uses stories to describe human experiences and actions (Polkinghorne, 1995) and is an accepted mode of inquiry in many domains of anthropological, sociological, and educational research (Brown & Gilligan, 1992; Connelly & Clandinin, 1990; Gilbert, 1994; Nespor et al., 1995; Witherell & Noddings, 1991). Yuen et al. (2021) analyzed rape narratives and revealed the essential factors that encouraged rape victims to rise and make a difference for other rape survivors and to improve their psychological condition by sharing their ordeal. On the other hand, the silence reinforces rape myths in which victims are blamed, stated tempting to act, and negative social reactions lead to the victims' suffering post-traumatic stress disorder (PTSD), self-blame, and maladaptive coping strategies (Suarez & Gadalla, 2010). As sharing rape experiences could be either helpful or harmful for survivors, it is obligatory to understand what makes rape narratives useful for survivors. Recently, Jean-Charles (2014) examined the

representation of rape in rape narratives of Vera's *Under the Tongue* and Beyala's *Tu t'appelleras Tanga* and strongly advocated the "victim-survivor" model instead of the survivor as the former encompasses a wide spectrum of rape experiences being a comprehensive model to explore rape, cultural criticism, and trauma studies. The model allows pain and survival to coexist, collide, and coalesce. Given narratives illustrate the fluid process of moving between victim and survivor in the aftermath of rape. In *Under the Tongue*, the narrator-protagonist describes herself, "A tongue which no longer lives, no longer weeps. It is buried beneath rock… I know a stone is buried in my mouth, carried under my tongue. My voice has forgotten me" (Vera, 1996, p. 121). The incest's ramifications on the victim's body are threefold: the loss of her voice, the fracturing of her body, and a crippling brand on her mind and sense of self (Jean-Charles, 2014).

While these studies, among many others, have established that rape narratives could be of practical use in human life and real social settings, more needs to be known about rape narratives. More specifically, more needs to be known about the narrative structure, for example, the stages and organization of a rape narrative. As a literary form, rape narratives carry messages composed using a wide range of choices, for example, lexical and grammatical (Leech & Short, 2007), to express a particular meaning or a set of meanings. Moreover, like in other genres, meanings in literary rape narratives relate to the social and cultural contexts in

which they are produced, distributed, and consumed. This article draws on stylistics, particularly Labov's (1972) narrative structure analysis theoretical model and Halliday and Matthiessen's (2014) transitivity, to investigate the structure of Sebold's rape narrative *TLB*. The article dissects narrative structures to exhibit new meanings and concepts of rape being intimidating and gruesome, the pain and suffering of rape victims, and the ways of their resurfacing and recovery.

LITERATURE REVIEW

The narrative, the most common form of discourse, remains a prominent concern in the literature study (Bal, 1997; Prince, 1982; Todorov & Weinstein, 1969). Accordingly, narrative analysis has attracted different disciplines of human sciences (e.g., psychology, sociology, anthropology, philosophy) and has rapidly grown as a scientific approach to qualitative research (Polkinghorne, 1988; Toolan, 1991). Practically, it (narrative analysis) has become an essential part of the professions studying occupational narratives and life stories. Especially for linguists, it remains fundamental to know how narratives encompass meanings that lead to human thinking and talking (Johnstone, 2016). Historically, the analysis of narrative structures goes back to Aristotle, who, in *Poetics*, discussed the content and form, which construct various structures of a narrative. Regarding narrative structures, Johnstone (2016) comments that Labov's works remain influential. Labov regards the narrative as "one method of recapitulating experience by matching a verbal sequence of clauses to the sequence of events which (it is inferred) occurred" (Labov, 1972, pp. 359-360).

Words and narratives "shape the ways in which it is (not) possible to understand the issues at stake, they are legislated against, measured and resourced and the responses which are deemed most urgent and appropriate" (Boyle, 2018, p. 2). The conceptualization of rape and sexual violence is construed through different producers, voices, and genres in the specified contexts informed by socio-cultural practices (Pinsky et al., 2017). Rape narratives and violence narrated in different contexts are not only representations but are active agents producing meanings and concepts and shaping understanding. For example, in Erdrich's (2012) novel *The Round House*, the intimate and devastating effects of sexual violence against a woman, her family, and her community are depicted. Skenandore and Bladow (2018) analyzed *The Round House* and found storytelling a subtle way to heal and move away from violence and pain. Similarly, Larson (2018) discussed that the young rape victim in Gay's (2017) rape narrative, *Hunger* recovered in her post-assault life but never lived her normal life again; however, her narrative is a source of motivation for rape victims struggling and fighting with hardships in their post-assault lives. Most importantly, the rape narratives become a source of self-invention, offering new opportunities to uncover violent human life experiences (Gilmore, 2017).

Gay's (2017) rape narrative is about "how one should heal" (Larson, 2018, p. 2). Given that storytelling becomes a lens through which rape victims can envision their way out of pain and trauma, where they can create models and mirrors to experience the spaces of resurfacing and recovery. On the other hand, instead of their support and help in resurfacing, rape victims are suppressed and subjugated; rape culture has immensely affected the concept of rape, where rape victims are blamed, silenced, and punished for the act they never did (Sharma, 2020). For instance, Maart's (2008) rape narrative *The Writing Circle* depicted a rape victim Isabel who was brutally raped in her garage a few meters away from her home. After the assault, Isabel lived a traumatic life and constantly thought about the security of her young nieces. Even though Isabel "had gone through all sorts of procedures" to protect and keep them safe, she was "unable to give them any hope of being free of this horrible situation" (Maart, 2008, p. 1). J. Murray (2011) concluded that gender in *The Writing Circle* is used as a woman's vulnerability to rape which flows from the gendered imbalances of power within society and, consequently, the challenges of conceptualizing strange rape encompassing a history of rape myths.

Moreover, O'Neill's (2015) *Asking For It* is a story about the devastating effects of gang rape and public shaming, told through the awful experiences of a young girl, Emma O'Donovan. Emma's father questioned her credibility, asking, "[b]ut why were you there?" and "[w]hy were you in that bed in the first place, Emmie?" (p. 262). The questions demonstrated the reasons for the rape surrounded by the prevailing rape myths. Mastrantoni (2021) remarked that rape representation in literature would help understand the insidious implications often interlocked with rape representations and foster a meaningful conversation about rape among rape myths. Thus, the prevailing concepts and understanding of rape increase the pain and suffering of rape victims inducing post-traumatic stress disorder, depression, and anxiety (Miragoli et al., 2014). This consideration underlines the importance of evaluating rape narratives to understand various concepts and meanings of rape and to treat stress disorders in rape victims to restore resiliency in their lives (Basile & Smith, 2011; Miragoli et al., 2017).

Evaluating the significance of rape narratives in rape victims' healing and resurfacing, Delker et al. (2020) studied the influence of cultural stigma and narrative redemption on the storying of rape and sexual violence and discussed that along with rape victims, to a greater extent, the act of storytelling and sharing rape experiences benefit other rape survivors. It was concluded that sexual trauma stories as more difficult to tell and less likely to be told than other, less stigmatizing stories, even when stories end positively. Stressful encounters require a coping strategy to conquer them. Interestingly, Rodríguez-Dorans and Jacobs (2020), focusing on the theory of narrative analysis, showed the critical role of language in demystifying

social issues of patriarchy, rape, violence against women, and women suppression. Furthermore, it described language giving structures to a narrative in terms of the order of the events, time and space settings, and, most importantly, unity and coherence. Concludingly, Borg (2018) remarked that unity and coherence in rape narratives empower traumatized rape victims by giving them more control over their lives.

Voicing the silenced rape victims, Sebold meticulously describes the horrific experiences of rape (Whitney, 2010). Kilby (2018) explored Sebold's writing through intertextuality and found that the intertextual links in Sebold's rape memoir *Lucky* and fiction *TLB* enhance the understanding of young rape victims' brutal rape experiences, while *TLB* opens with rape, murder, and mutilation of a young girl Susie, *Lucky* begins with reference to the girl who was raped, murdered, and mutilated in a tunnel. Therefore, the understanding of one narrative can be enhanced by the other. The deeper meanings and newer concepts of rape can be established by having such theoretical perspectives on rape narratives (Kilby, 2018). Moreover, Wehling-Giorgi (2021) compared Alice Sebold's rape writing with Elena Ferrante's and discussed the links between rape, abuse, trauma, and untold experiences of rape victims disclosing rape narratives resisting patriarchal powers. Even though the rape narratives of the two writers are set in different geographic locations, they challenge rape culture in which the rape victims are trapped in imposed boundaries having the lapses, gaps, and absences of

the traumatized imagination. Wehling-Giorgi (2021) exclusively mentioned that *TLB* "remains fundamentally anchored on earth and motivated by a profound sense of mourning and her desire to be among the living" (p. 135).

Surprisingly, rape affects an individual physically and emotionally and severely affects the victim's family and society (Burlingame & Layne, 2001). In a study of Sebold's *TLB*, Bliss (2008) analyzed the photographs used in the narrative. The photographs show the "disruption" of the family after the rape and murder of one of the family members; the rape destroyed the typical mother-daughter relationship (Bliss, 2008, p. 861). Furthermore, the photographs in *TLB* have the special function of establishing an eternal connection between the dead (Susie) and lived ones (Susie's mother and other family members). Therefore, *TLB* demonstrated the pain and suffering of rape victims and their families, their never-ending intimidating and traumatic memories (Sharma, 2020). Sharma added that *TLB* "is an invaluable contribution to the rape narratives of victims suffering throughout their lives" (p. 205).

From a different perspective, Bennet (2009) remarkably stated that dead narrators (as Susie in *TLB*) have more control over their narratives. The dead narrators are the ones who arrange the rape events in their stories to ensure that the murderer is not the active agent manipulating the plot. More importantly, victims' actions are motivated by their psychological damage and fear, not by a compelling and clever murder plot.

Given that narrative analysis is a potential theoretical approach to understanding rape narratives. Therefore, this article stylistically analyses the narrative structures of Sebold's rape narrative *TLB* using Labov's (1972) theoretical model of narrative structure and Halliday and Matthiessen's (2014) transitivity system. It is aimed to uncover the hidden meanings of rape, constructing the traumatic realities of rape events, the gravity of pain and sufferings of rape victims, and the ways the victims opt for their regaining and resurfacing.

Theoretical Framework

Narrative Structure Analysis. Labov (1972) views the minimal narrative as a sequence of two clauses that are temporarily ordered. If the order of the clauses is altered, the original semantic interpretation will be changed. For example, "I punched this boy, and he punched me" (Labov, 1972, p. 360). The two clauses consist of a minimal narrative. If their order is changed, it will become "[t]his boy punched me, and I punched him (p. 360). The original meaning has been changed.

Narratives involving the beginning, middle, and end are generally complete. However, Labov (2013) provides a fully developed model of a narrative structure having six categories, with each having its function: (i) abstract (indicates what the narrative is about), (ii) orientation (describes the setting; time, and place), (iii) complicating action (recounts and orders a chain of events surrounding the narrative's *most reportable event*, the event that consists a notable shift in circumstances), (iv) evaluation (offers a description of different perspectives in the narrative), (v) resolution (reflects on results of the event), and (vi) coda (brings the narrative to an end, and redirects focus to the present). Even though ABSTRACTS exist in the beginning and CODAS, in the end, these categories can be found anywhere in a narrative, and interestingly a narrative does not need to include each single of them. Therefore, a narrator has "many options for constructing a narrative" (Labov, 2013, p. 27). A storyteller builds his/her story using a primary experience whereby different stages of narrative structure would help make its interpretations significant in the form of clauses and underpinned evaluation. According to Labov and Waletzky (1997), a narrative has the function of sequencing an event having specific words and structures. Moreover, narrative structure analysis is a potential alternative to interpreting narrative meanings in detail (Labov, 1972). Therefore, the Labovian model of narrative structure analysis consists of significant paradigms to analyze narratives having different levels of length, organization, content, and complexity.

Transitivity System. The transitivity system is considered the most significant method of examining the ideologies embedded in a text (Beard, 2000; Simpson, 1993). Moreover, Fowler (1991) called transitivity an essential system to represent human experiences. In the transitivity system, clauses are evaluated to dissect events and situations of different

experiences. Additionally, the system investigates language to exhibit the *process* (i.e., happenings), *participants*, and the *circumstances* constructing a clause (Martin et al., 1997); the process tells the nature of the action or the event being described in the clause; the participants are the involved factors being actor, sayer, senser, goal, and receiver in the process of the clause; and the circumstances are related to the settings including time and location of the process. Largely, the events and processes are represented through the transitivity system; it helps determine the agent (who) and agency (how) of the action performed. Halliday and Matthiessen (2014) divided the process in the transitivity system into six categories: material, mental, relational, behavioral, verbal, and existential. In contrast to the participants, the circumstances consist of circumstantial elements like time, location, cause, reason, and manner of the action in the clause. Therefore, the participants are involved directly, while the circumstances indirectly involve the clause process.

Halliday initiated transitivity and first analyzed William Golding's *The Inheritors*. Broadly, transitivity is part of Hallidayan theory of Systemic Functional Linguistics (known as SFL; see Halliday & Matthiessen, 2004, 2014), which proposed the perspective of language as "a meaning-making system with an emphasis on choice" (Neale, 2002, p. 44). By transitivity system, Halliday introduced all the features of the clause which contribute to the linguistic representation of the speaker's experience (Halliday, 1969, p. 81).

METHODS

The primary purpose of this article is to provide an analytical lens to rape narratives that can explore new meanings and concepts of rape, trauma, and abuse and examine how rape victims recover in their post-assault lives. Stylistically motivated, the article applies the Labovian narrative structure analysis model and Hallidayan transitivity system to interpret narrative structures emerging from the clauses used in the text.

Data

It is a descriptive study based on Sebold's rape narrative *TLB*. The study's data consist of young rape victim Susie Salmon's narrative discourses collected from TLB's first and last chapter. Initially, both chapters, along with the entire novel, were thoroughly read; the three stages of rape: pre-, while-, and post-rape, covering the whole experience of rape, were marked. Then, the narrative discourses within these rape stages were tabulated. Thereafter, the discourses about Susie's rape event were extracted, and others were excluded. The data set is chosen for several reasons. For instance, the first chapter is about Susie's abduction, rape, and butchering, whereas the last chapter depicts Susie's transfer from one heaven to another. The collected narrative discourses were further investigated to identify and categorize the clauses constructing narrative structures.

Method of Analysis

The analysis begins with identifying and categorizing six Labovian narrative structures based on the clauses used in

Susie's narrative discourses. Table 1 presents the Labovian model of narrative structures.

Secondly, the narrative structures are further investigated to obtain deeper meanings and new concepts of rape through Hallidayan's transitivity processes. The transitivity model is shown in Table 2.

The entire structure of a rape narrative about the range of experiences from the initiation of the rape act up to its effects on rape victims in their post-assault lives could be apprehended thoroughly. Given that the rape narratives explored in this way (having rape in parts and whole) would help come out horrors of rape, pain, and suffering of rape victims.

RESULTS

After applying the Labovian model of narrative structures to Susie's narrative discourses, all six categories (along with clauses therein) are found (see Table 3).

The findings show that each narrative structure in *TLB* denotes an important part and stage of the rape event contributing to the whole. The structures not only helped construct a complete story of rape but also offered a perspective to look into the parts representing numerous gruesome experiences of rape. Initially, the ABSTRACT category informed readers about the story's subject by describing

Table 1
Labov's (1972) model of natural narrative

Narrative category	Narrative question	Narrative function
Abstract	What is this narrative all about?	It marks the beginning of a story and attracts the reader/learner's attention.
Orientation	Who is involved in the story? When and where did it take place?	It helps the reader/listener to identify the characters, time, and place of the story.
Complicating Action	What happened?	The main part of the narrative structure describes "what happened" in the story.
Resolution	What finally happened?	It recapitulates the final key event of a story.
Evaluation	So what?	It functions to illustrate the main points of the story.
Coda	How does it get ended?	It tells the end of the story and redirects the reader/listener to the present.

Table 2
Processes in Halliday and Matthiessen's (2014) transitivity system

Process category	What process categories construct?	Participants	Circumstances
Material	Happening of an event and doing an action	Actor	Goal
Mental	Perception, affection, and cognition	Senser	Phenomenon
Relational	Attributive and identifying	Carrier, token	Attribute, value
Behavioral	Physiological and psychological	Behaver	Behavior
Verbal	Saying and signaling	Sayer	Verbiage
Existential	Existing	Existent	

Table 3
Narrative structures in TLB

Narrative category	Extracts from *TLB*	Context of situation
Abstract	The penguin was alone in there, I thought, and I worried for him. When I told my father this, he said, "Don't worry, Susie; he has a nice life. He's trapped in a perfect world." (p. 4).	Before Susie's rape and death, Susie is with her father.
Orientation	My name was Salmon, like the fish; first name Susie. I was fourteen when I was murdered on December 6, 1973 (p. 6). My murderer was a man from our neighborhood. My mother liked his border flowers, and my father talked to him once about fertilizer (p. 6).	After Susie's rape and death, Susie is speaking from her heaven.
Complicating Action	I fought hard. I fought as hard as I could not to let Mr. Harvey hurt me, but my hard-as-I-could was not hard enough, not even close, and I was soon lying down on the ground, in the ground, with him on top of me panting and sweating, having lost his glasses in the struggle (p. 12). Mr. Harvey started to press his lips against mine. They were blubbery and wet, and I wanted to scream, but I was too afraid and too exhausted from the fight (p. 13). I felt huge and bloated (p. 13). He was inside me. He was grunting (p. 13). I wept and struggled so I would not feel (p. 13). He brought back a knife… He took the hat from my mouth… The end came anyway (p. 15).	During Susie's rape, she was raped and butchered in the hole in the ground in her neighborhood by Mr. Harvey.
Evaluation	I wish now that I had known this was weird (p. 7). Mr. Harvey would say these words to my mother (p. 7). My mother sat on a hard chair… with her mouth open… Her pale face paler than I had ever seen (p. 10). My father was driven into motion… He wanted to know details… (p. 11).	After Susie's rape and death, she narrated her family's experiences and how her rapist dealt with the situation.
Resolution	When my father's car pulled into the drive, I was beginning to wonder if this had been what I'd been waiting for, for my family to come home, not to me anymore but to one another with me gone (p. 316). "I love you, Susie," she said. I had heard these words so many times from my father that it shocked me now; I had been waiting, unknowingly, to hear it from my mother (p. 317). I was done yearning for them, needing them to yearn for me. Though I still would. Though they still would. Always (p. 318).	After Susie's rape and death, she was looking at her family members and witnessing their reunion from her heaven.
Coda	Now I am in the place call this wide, wide Heaven because it includes all my simplest desires but also the most humble and grand. The word my grandfather uses is *comfort* (p. 325). If I'm to be honest with you, I still sneak away to watch my family sometimes. I can't help it, and sometimes they still think of me. They can't help it (p. 323).	After Susie's rape and death, she is speaking from her another heaven.

Susie's innocence, purity, family relations, approaching danger, loneliness, and fear through various word choices and clause constructions. For example, the temporal juncture in the relative clause "When I told…" (Sebold, 2002, p. 3) evoked her father's reply (with care and affection) when Susie asked about the lonely penguin in the snow globe. In ORIENTATION, the construction of clauses introduced Susie; the rape victim, Mr. Harvey; the perpetrator, and the place and time of the rape event. The free clause "My name was…" (p. 5) directly mentioned who the rape victim was. The next is the relative clause that disclosed her age (fourteen) and the event of her murder. This relative clause, apart from surface meaning, redirected to the gruesome details of rape; a school-going girl who was in her fourteen (the beginning of life, the age of dreams and ambitions) was abruptly ended by a thirty-six-year-old man.

Moreover, the clause helped expose internal feelings and the mental state of the rape victim, denying death and yearning to continue life. The COMPLICATING ACTION having the temporal juncture, dealt with numerous appalling experiences of rape. For example, the rape victim tried hard, as in "I fought hard" to get released (Sebold, 2002, p. 12). Even though she tried hard, she could not save her; eventually, "I was soon lying down on the ground" (p. 12), confirming her defeat. Additionally, several clauses (i.e., relative clause, reflective clause, subordinate clause) constructed Susie's experiences of being brutally tortured and raped. For example,

the sentence "I wept…" (p. 14) has two clauses describing two different parts of rape; first, the victim was crying and struggling simultaneously, and, secondly, she was doing all this so she could not feel what was happening. Broadly, it showed how a rape victim is physically and mentally destructed and how parts of rape construct the humiliation of children and women in rape events. In EVALUATION, the clauses depicted that rape events affect a victim's life individually and bring atrocities to the victim's family members collectively.

Given that Sebold used free clauses to render the pain and suffering of Susie's family, her mother grew paler (corresponding to lifeless, still, fixated), and her father became restless. The rape event brought destruction to both the rape victim and her family. The RESOLUTION structure explained Susie's coming to terms with and coping with the situation. For this, the free clause of "I love you…" (p. 317) recorded the feelings and emotions Abigail (Susie's mother) experienced. This clause worked twofold; it concluded a mother's care, affection, and missing of her departed girl, and, on the other hand, it helped evoke Susie's emotions toward her mother; Susie was waiting for this moment for a long time. The clause infinitely established a connection between the living and dead; they would stay connected and felt by each other. Finally, the CODA consisting of different clauses brought the story to its end. The relative clause beginning with "if" emphasized what Susie wanted to share, the truth.

Moreover, in the same sentence, the second clause (main clause) referred to the time "still," which means even after a very long time, Susie looks for her family and vice versa, which is quite natural as in "I can't help it… They can't help it" (Sebold, 2002, p. 323). It has been depicted that rape victims live a normal life again after the assault. Nevertheless, it is almost impossible to forget what happened as the memories of rape reoccur in their lives periodically.

DISCUSSION

Real Horrors, Pain, and Suffering of Rape

The investigation of narrative structures having the words and clauses analyzed therein Susie's rape discourses evoked the embedded reality of rape events. For example, the clause in "I fought hard…" (Sebold, 2002, p. 12) represented Susie, a fourteen-year-old school-going child, as an actor performing a material process of fighting with a thirty-six-year-old man named Mr. Harvey; the goal "hard" added meaning that she was trying every single possibility of her strength whether physical or mental to remain safe which she elaborated as "not to let Mr. Harvey hurt me" (p. 12). Largely, it meant that children and women neither invite nor want to get raped as it is generally precepted in rape events (Suarez & Gadalla, 2010); instead, they fight and struggle to remain safe.

The humiliation of rape victims is inevitable; therefore, rape is considered one of the most severe and traumatizing crimes (Campbell, 2008). The material process of "lying down" in the following clause reported the state of the actor, the rape victim, directly experiencing the perpetrator's force. The process of lying down refers to how rape victims are physically tortured and sullied. Moreover, the circumstances "down on the ground, in the ground" (Sebold, 2002, p. 12) involved Susie being raped and directed to the weird and haunted location, adding fear and horror and consequently affecting the victim's mental health. In addition, the perpetrator is on top and sweating, and having Susie underneath describes the humiliation of rape victims.

Moreover, the clause "Mr. Harvey started…" (Sebold, 2002, p. 13) put Mr. Harvey in charge; he initiated performing actions like pressing his lips against Susie's. Herein, Susie became passive to receive whatever was forced on her. Instead of using the word "kiss" or "kissing," which might mislead as to the involvement of the two, Sebold used "to press his lips against mine" (p. 13), which described the act of humiliation where a child was controlled to exercise whatever was possible for the perpetrator. The pronoun "mine" highlighted the feelings of possession and privacy being snatched away by the perpetrator. Along with the physical pain, Susie's mental suffering is portrayed using the attribute "blubbery and wet" in the next clause. At a deeper level of meaning, the mention of how the perpetrator's lips depicted Susie's thoughts; she was shocked at how savagely she was being treated. Broadly, it demonstrated how rape victims, mostly children, and women,

are devalued, dehumanized, and destructed in society (Roynon, 2014). Alarmingly, in modern human societies, violent rape incidents have reached new heights putting vulnerable women and children at risk (Wehling-Giorgi, 2021). Accordingly, rape incidents should be seriously dealt with on an urgent basis.

Nevertheless, in most rape instances, the victims are silenced and brutally killed outright (Smith, 2010). Sebold's description of Susie's end presented the horrific details of the crime. The use of the goal "knife" that Mr. Harvey brought back directly pointed out the dissection of Susie, similar to the ways animals are cut up and consumed. Along with the physical pain of being cut, she was mentally traumatized. On the other hand, the pronoun "he" is used as an active actor denoting Mr. Harvey, whereas Susie is represented as passive, being scared, exhausted, and frozen.

Moreover, in the following clause, the goal of "hat" and circumstances (of place) "mouth" amplified the pain Susie was going through. The hat is used to wear on the head, but it was stuffed into Susie's mouth to silence her, directed not only to Susie's slow death but also to show how inhumanly rape victims are treated in rape events. Broadly, it meant the requests and pleading seemed irritating to the perpetrators; therefore, they rightfully and forcefully silenced them. Nath and Pratihari (2018) studied that the perpetrators kill the victims outright to conceal their identity and escape punishment. Remarkably, Larson (2018) instantiated that these acts of

silencing rape victims are part of traditional patriarchal patterns in which the raped women and children are forcibly made disabled. Since language shapes, everyday life, the language of rape narratives should be explored to know the horrors of rape and the painful experiences of rape.

Regaining and Rising of Rape Victims

The recovery of rape victims remains a challenge even in modern human society, as rape is physical, mental, and social (Roynon, 2014). Unfortunately, the victims are held responsible for what happened and punished accordingly (Delker et al., 2020). Amid such social practices, rape victims either get killed or forcibly silenced (Gilmore, 2017; Maart, 2008). Nevertheless, Susie rose, returned, and shared her ordeal. The clause patterns used throughout COMPLICATING ACTION and EVALUATION exhibited horrific parts of her rape event, denoting the gravity of the pain and suffering of rape victims.

On the other hand, the narrative structures thereafter (i.e., RESOLUTION, CODA) consisted of the clauses offering the ways Susie opted to move on. The clause "I was beginning…" (Sebold, 2002, p. 316) presented Susie as an actor, and the material process of "beginning" evidently pointed toward moving and shifting, which was illustrated in the goal (i.e., "wonder," "family," and "home"). Importantly, the move is further explained in terms of wonder, family, and home, bringing Susie to the family and the home once isolated and destroyed. Moreover, the following

free clause worked twofold; first, it showed Susie's mother as an actor (active, full of life), and, therefore, taking the initiative to speak and to do something; second, the verbiage "I love you, Susie" (p. 317) invited Susie to be the part of her feelings. This mental behavior of Susie's mother also helped Susie to get strengthen as she was isolated and broken since the fall of her family (after Susie's abrupt end), and she was in wait to hear something like that, especially from her mother. In the following clause, the behavior illustrated that Susie had repeatedly heard words like "love" from her father.

Interestingly, the clauses in the RESOLUTION contained a series of words about family and relations. Therefore, the feeling of unification and reunion of the beloved ones has been provided as an option to soothe the tortured rape victims. Broadly, the intended meaning constructed through the clauses called society being united to provide support for rape victims instead of ignoring and rejecting them.

Eventually, again being an actor, Susie was presented as an actor through the personal pronoun of "I," and the material process of "done" (in "I was done…") demonstrated something accomplished and achieved by her. Through the goal of that clause, Susie stopped "yearning" and "needing" (Sebold, 2002, p. 318) their family members. Importantly, it has been revealed that the mental health of rape victims plays a significant role in their recovery. The words like yearning and needing exhibited Susie's and her family members' feelings and emotions toward each other. Given that the meanings underneath clauses in the RESOLUTION structure offered how the victim coped with the crime. In other words, Borg (2018) stated that the control of rape victims over their stories helps them heal and regain since they are the masters of their life narratives.

Nonetheless, the complete recovery of rape victims is impossible. The clauses in the CODA structure instantiated this fact. At the end of the first clause, the circumstances of the place made it clear that Susie is in Heaven, which is wide, referred to as a place free of earthly pain and suffering. Additionally, the following clauses marked Susie's fulfillment of desires; "humble and grand" and experiencing "comfort" with her grandfather. However, in the last clause, the actor, Susie, presented through the personal pronoun "I" and showed sneaking away for their family members. The location of time "still" emphatically refers to the huge amount of time spent after Susie's abrupt end, even though she is mentally unstable as she looks for her family, which she left abruptly. Although Susie has departed to the next level of heaven, which shows her move from despair to happiness and satisfaction, she cannot control her feelings and emotions about joining her family back, which haunts her psychological self. It meant that rape victims and their families never fully recovered from rape experiences. Sharma (2020) stressed that "the memories of trauma cannot be forgotten rather every day it aggravates in the consciousness of these rape victims" (p. 205).

CONCLUSION

The stylistic analysis of narrative structures in Sebold's *TLB* has instantiated that rape narratives have new meanings and concepts of rape experiences helping understand not only the horrors, pain, and suffering of rape but also examine how rape victims are regaining and resurfacing. The words and construction of clauses in rape discourses exhibited how rape victims are dehumanized, oppressed, and silenced by perpetrators during rape events which cause gruesome life experiences in rape victims' post-assault lives. Moreover, it has been seen that rape victims should be supported and motivated to live instead of stigmatization and rejection by their families and society. Largely, the article showed the importance of studying rape narratives and discourses through multiple theoretical lenses (e.g., Labovian narrative structure mode, Hallidayan transitivity system) to uncover the horrors of rape and to understand the ways rape victims opt to get resiliency in their post-assault lives. Given that the study could be a tool for an individual, government agencies, and organizations working for rape victims to create policies to curb the crime and facilitate rape victims, respectively.

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SOCIAL SCIENCES & HUMANITIES

School Management for Sustainable Development in Energy and Environmental Excellence

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ABSTRACT

Thailand emphasises encouraging all sectors to achieve their commitments to improving the quality of human life following the United Nations' sustainable development goals (SDGs) by 2030. Therefore, educational institutions across the country must develop school management approaches to enhance the quality of education and prepare Thai society to meet global challenges. This research aims to contribute to global action by developing school strategies and leadership practices to help achieve the SDGs. The mixed method of SWOT and the Analytic Hierarchy Process (AHP) was used to determine a suitable strategy for school accomplishment. In-depth interviews with school administrators were conducted to identify the leadership practices of school management. The results indicated an urgent need to equip human resources with knowledge and expertise in the energy field and the environment to teach students effectively. The five keys to leadership success in human resource development include goal setting, strategic budgeting, activity planning, achievement striving, and collaborative building. The school administrative strategies and leadership practices towards energy and environmental excellence developed in this study would be beneficial guidelines for school leaders in policy implementation for attaining SDGs. Contribution to SDGs would create a more sustainable world for all.

INTRODUCTION

Education is important in national and international socio-economic and environmental development (Yaaman et al., 2019). Educational management must align

with national policies, global trends, and philosophies or beliefs to meet the needs and respond to such challenges (Amanchukwu et al., 2015). As the world population is expected to reach 10 billion by 2050 (Lutz & Samir, 2010), the negative consequences of overpopulation require the participation of all sectors to play a role in achieving sustainable development goals (SDGs, Franco & Derbyshire, 2020). Therefore, the challenges for the education sector related to providing quality education as the foundation of sustainable development.

The current national education plan (2017–2036) in Thailand is aligned with the United Nations' SDGs, which in turn are following the global social development goal of eliminating poverty, with simultaneous development of quality of life and environmental conservation. The main vision of the national education plan is to provide all Thai people with quality education and lifelong learning, focusing on learners with 21st-century characteristics and learning skills to keep pace with ever-changing global situations and social contexts. In the process, the national education plan has included six educational development strategies: (1) educational management for social and national stability, (2) human, research and innovation development and production to increase the nation's competitiveness, (3) development of people's potential and creation of a lifelong learning society, (4) provision of educational opportunity and equality, (5) educational management for environment friendliness and quality of

life, and (6) improvement of educational management efficiency (Office of the Education Council, 2017).

With environmental problems emphasised in the fifth strategy of the national education plan to fulfil the UN's SDGs by 2030, educational institutions nationwide have been obliged to adapt their policies to make the country a low-carbon society. These institutions must improve and develop various aspects following the national education plan to achieve sustainable development (Suriyankietkaew & Hallinger, 2018). For instance, educational institutions should encourage the development of teachers for innovative and environment-friendly technology to maximise the learning potential of all students. Furthermore, they must develop new curricula following 21st-century skills and enable learners to lead environment-friendly lives. In doing so, it is crucial to receive collaboration from all educational personnel to support quality improvement in education and propel their respective institutions toward sustainable future changes.

Planning educational development strategies concerning national policy and global trends is an essential mission of school administration and its priority as per the principle of the management process. If the planning is well organised with clear, practical steps, the school administration will be successful and achieve its goals (Jasti et al., 2019). As Thailand strives for sustainability, environmental issues must also be considered for effective

school planning and the development of appropriate solutions. The present environmental issues in schools are energy and water usage, food waste, and general waste management (Wachirawongsakorn & Sudnum, 2016). The school must therefore handle these issues appropriately to promote sustainable development and green practices. Nonetheless, the assessment of the preparedness of Thai schools in 2009–2014 to become green schools under the standard criteria of the Department of Environmental Quality Promotion revealed that only 112 schools across the country were well-prepared. Additionally, more than half of the small and medium-sized schools in Phitsanulok province were unprepared due to the lack of environmental planning and budget and the unpreparedness of teachers for environmental science (Wachirawongsakorn & Sudnum, 2016).

The main objective of this research is to develop school administrative strategies and leadership practices towards energy and environmental excellence, to promote education management for sustainable development. Maewinsamakkee School, Chiang Mai, Thailand, was selected as a purposive sample due to the school-specific characteristics, the vision of school administrators and administrative effectiveness. This medium-sized public school offers educational services from kindergarten to high school levels. It has continuously received multiple national awards, including the school management award, the education quality award, and the award in biological agriculture learning

management for sustainable development, for more than 10 years, by adopting the philosophy of sufficiency economy. To tackle global environmental issues, the school administrators have allocated some budget to develop various energy and environmental activities. They have also recognised the need for clear energy and environmental strategies to optimise the budget allocation and achieve the school's sustainability vision. As the school is looking to move toward sustainable development, the invented school administrative strategies and practices would serve the national and international policies of developing citizens with an awareness of sustainable energy and natural resource conservation for a better future for humanity.

LITERATURE REVIEW

At the global level, there is a strong correlation between population growth, economic growth, and energy demand (Sorrell, 2015). Although energy is regarded as one of the most important aspects of improving the economic and social quality of life in all nations, improper energy usage could result in various environmental problems, including air pollution, water pollution, and global warming (Osuntuyi & Lean, 2022). The importance of education to cope with these challenges and help create a more sustainable world is well recognised. In 2015, the SDGs developed by the United Nations was accepted by world leaders, who are working towards achieving them by 2030. Among the 17 SDGs, the improvement of the quality of education

is articulated in Goal 4 and is linked to the other goals in one way or another. Thus, education is an effective means for implementing sustainable development, as it increases knowledge and awareness of the importance of energy and environmental conservation and prepares future citizens to engage in sustainable living practices (Ma et al., 2020; Mahat et al., 2019b; Shulla et al., 2020).

Numerous researchers have presented substantial linkages between environmental and energy education and sustainability from diverse perspectives and countries. The impact of education on sustainable development was studied in Pakistan by Nousheen et al. (2020). The authors found that education on sustainable development in various programs could effectively assist teachers in recognising diverse economic, social, and environmental challenges from the sustainability perspective and imparting this knowledge to students. The key elements for the determinants of Malaysian students' knowledge of sustainable energy saving were verified by Mahat et al. (2019a). Their findings revealed four major aspects of students' awareness of sustainable energy conservation practices: electricity conservation, water conservation, power maintenance, and the 3Rs of reduce, reuse, and recycle. The authors concluded using a confirmatory factor analysis that the developed model could effectively identify the critical aspects to verify knowledge about energy-saving practices in the primary school surveyed, which could be transferred to the parents. Wojuola and Alant (2019) also studied various aspects of the Nigerian public's beliefs, perceptions, and attitudes towards renewable energy technologies to derive implications for science and technology policy and education. The results indicated an insufficient understanding of renewable energy technology and no association between the participants' educational level and knowledge of renewable energy sources. In addition, the participants' lack of awareness regarding sustainable development was evident. Consequently, it was proposed that a national renewable energy and sustainability curriculum might help facilitate a sustainable way of life.

Providing a good quality education could effectively propel policy goals towards the sustainable development of nations. Educational management must, therefore, adapt according to the policies and changing contexts to address the need for societal transformation. Education for sustainable development requires school leaders to manage the resultant changes. The role of school leaders as change agents is to formulate policies and strategic plans in line with the goals of education for sustainable development (Mogaji & Newton, 2020). According to Chukwumah (2015) and Faiz et al. (2019), strategic planning could be an effective management tool for policy direction, implementation strategies, action planning, monitoring, and evaluating results. Strategic planning has been widely adopted in the education sector as the process of setting the direction and approaches for achieving the goals of the schools. Many schools worldwide, especially in Western countries, have begun

adopting the practice of strategic planning since the 1980s (Mbugua & Rarieya, 2014). Through strategic planning, administrators and teachers can set a clear goal and vision and carefully plan school policy formulation and evaluation.

The success of reshaping education to address sustainable development goals depends greatly on the school leaders (Mogaji & Newton, 2020; Muller et al., 2020). The study conducted by Iqbal et al. (2020) revealed the significance of effective leadership for sustainable development, as they could foster collaboration, motivation, and assistance for the transformational process. School leaders should develop an action plan, provide practical guidelines, and support essential elements, such as providing sufficient budget and personnel, for achieving operational excellence by following the established goals (Muller et al., 2020). Furthermore, school leaders should evaluate the outcomes of programs and activities to ascertain whether their goals are being achieved (Slimane, 2012). Various evaluation models can be applied to evaluate the success of school programs and activities. Nevertheless, the most popular method for evaluating programs, particularly those aimed at sustainable improvements, is the context, input, process, and product (CIPP) evaluation model (Warju, 2016).

METHODS

The mixed-method approach was adopted in this study to determine the best strategy and obtain a comprehensive understanding of leadership practices for sustainable development in energy and the environment. A focus group discussion and a questionnaire were utilised to construct, verify, and select the school administrative strategies. An in-depth interview was used to explore effective practices in leading the school towards sustainable development. The research methods were as follows:

(1) Conducting a focus group discussion with twenty participants to assess and analyse the school contexts using a SWOT analysis and Internal and External matrix. Thereafter, the TOWS matrix was applied to develop the strategies and plans for green school administrative strategies. The focus group participants include five school administrators (a school principal and four vice principals) and fifteen teachers with experience in strategic planning, science teaching, and agriculture teaching. The participants were divided into two discussion groups with a diverse representation in each group for multiple viewpoints and appropriate group size, as Lazar et al. (2017) suggested.

(2) Verifying the propriety and feasibility of strategies from the six experts. The data collected were then analysed using statistical mean and standard deviation. Results were interpreted by multiplying 0.5 with the average score of the propriety and feasibility of each strategy. The final score was obtained by summarising the total scores of the propriety and feasibility together to prioritise the strategies.

(3) Defining the goals, strategy selection criteria of the CIPP model evaluation, and alternative strategies. Subsequently, an Analytic Hierarchy Process (AHP) model was constructed to aid in the decision-making and improve the reliability of the SWOT analysis.

(4) Conducting an enquiry with a population of five school administrators using an AHP-based pair-wise comparative questionnaire and thereafter examining the consistency ratio (C.R.) to analyse the weights of the alternative strategies to select a suitable strategy for the school. The questionnaire was divided into four sections. The first section comprised the basic information of the respondents. The next section dealt with the comparison of criteria in making the decision. The third section focused on the comparison of alternatives based on those criteria. The last section provided an open-ended question for school management suggestions and energy and environmental excellence recommendations.

(5) Conduct in-depth interviews with five school administrators to explore the roles of successful leaders in energy and environmental excellence. The main theme of the questions was (1) school policy on energy and environment and the implementation for effective results, (2) factors influencing the success of school energy and environmental development, (3) roles and responsibilities of a school leader in energy and environmental excellence, (4) approach for promoting the collaboration of teachers and staff members for ensuring the implementation of sustainable practices, (5) problems and recommendations for addressing operational challenges, and (6) other suggestions for the development of the school towards energy and environment sustainability.

The research instruments were verified for their content reliability by applying the index of item-objective congruence (IOC). The data analysis was divided into three parts: (1) content analysis was used to analyse the qualitative data from the focus group discussion and in-depth interviews, (2) the IE matrix was applied to determine the school contexts by plotting the internal and external factor evaluation scores onto the X and Y axes. The scores were then classified into three categories: poor (1.00-1.99), medium (2.00–2.99), strong (3.00–4.00), and (3) the AHP was used to analyse the questionnaire. The Eigenvector values were calculated using Equation 1.

$$\lambda_{max} = \frac{1}{n} \sum_{i=1}^{n} \left\{ \frac{\sum_{j=1}^{n} a_{ij} \times w_j}{w_i} \right\} \qquad [1]$$

Given
λ_{max} = Eigenvector main axis
n = Matrix size
a_{ij} = Pair-wise comparison components
w_i = Eigenvector value of the i component
w_j = Eigenvector value of the j component

The consistency index (C.I.) was calculated using Equation 2

$$C.I. = \frac{\lambda_{max} - n}{n-1} \qquad [2]$$

The consistency ratio (C.R.) was calculated using Equation 3

$$C.R. = \frac{C.I.}{R.I.} \qquad [3]$$

The random consistency index (R.I.) can be referred to in the sample random index table of Saaty (2008). For the data to be congruent and applicable, the values of the consistency ratio should not exceed 0.5 and 0.8 for n = 3 and 4, respectively, and 0.10 for n ≥ 5.

RESULTS

SWOT Analysis for Energy and Environmental Excellence

An onsite focus group discussion was conducted with twenty school administrators and teachers at Maewinsamakkee School to gather views on the school contexts and conditions in achieving energy and the environment for sustainable development. The key factors from the SWOT analysis of a focus group discussion were used to develop the Internal External (IE) matrix as presented below:

Table 1 shows the IFE analysis results of Maewinsamakkee School. The IFE total weight score of 2.30 out of 4 indicated that the school had a moderate strength in being

Table 1

Internal Factor Evaluation matrix (IFE) of Maewinsamakkee school

No.	Internal factors	Weight	Rate	Score
S1	The administrators have a broad vision and encourage personnel to be aware of the importance of energy and the environment.	0.15	4	0.60
S2	The school has a policy for school development and elevation as a prototype on energy and environment.	0.10	3	0.30
S3	Personnel is aware of and interested in energy conservation, waste management and converting waste into energy.	0.10	4	0.40
S4	The school has learning resources and activities related to energy and the environment.	0.10	3	0.30
S5	The school has a variety of alliances.	0.05	3	0.15
W1	Most personnel lack knowledge and expertise in energy and the environment.	0.15	1	0.15
W2	Lack of collaboration and participation from some teachers, personnel, and students.	0.10	1	0.10
W3	Some students are not aware of waste disposal	0.05	2	0.10
W4	Budgets from internal and external agencies are insufficient.	0.10	1	0.10
W5	Energy–related expenditure is high, e.g., electricity and water bills.	0.10	1	0.10
	Total	**1.00**		**2.30**

Note. Weight is the importance level of each factor; the more weight it is, the more important it becomes. Rate is a score level of capabilities with 4 as a primary strength, 3 as a secondary strength, 2 as a secondary weakness, and 1 as a primary weakness.

developed toward energy and environmental excellence. The most important internal factor that needed improvement was raising the knowledge and expertise levels of its personnel on energy and environment (W1).

Table 2 shows the EFE analysis results of Maewinsamakkee School. The EFE total weight score of 2.60 out of 4 implied the school's moderate tendency to develop towards energy and environmental excellence. The external factor that needed to be improved to prevent its negative effects was the implementation of state policies on energy and the environment, with school administrators setting the goals and putting the policies into practice (T1).

The total weighted scores from the IFE and EFE matrices were plotted on an IE matrix to analyse the strategic

position of Maewinsamakkee School. The IE Matrix analysis results indicated that the school was in column 5 (Figure 1), with the IFE and EFE weight scores at moderate levels of 2.30 and 2.60,
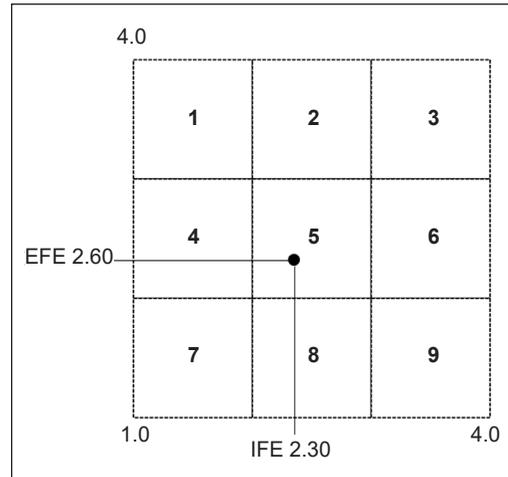
Figure 1. IE matrix of Maewinsamakkee school

Table 2

External Factor Evaluation matrix (EFE) of Maewinsamakkee school

No.	External factors	Weight	Rate	Score
O1	Receiving support from the sub-district administrative organisation and other agencies	0.15	3	0.45
O2	Receiving collaboration from the communities in segregating, relocating, and managing waste	0.15	3	0.45
O3	Neighbouring communities are empowered with quality human resources	0.20	4	0.80
O4	External specialists and speakers organise training and educate school personnel on energy and environment	0.15	3	0.45
T1	Overlap and confusion of the renewable energy policy implementations from many involved government agencies	0.15	1	0.15
T2	State agencies do not have sustainable methods for solving inappropriate waste disposal, resulting in waste segregation programs being unsuccessful.	0.10	1	0.10
T3	There is no suitable waste disposal area, obliging the waste to be relocated to distant areas.	0.05	2	0.10
T4	Certain types of waste segregated by the school cannot be sold.	0.05	2	0.10
	Total	**1.00**		**2.60**

Note. Weight is the importance level of each factor; the more weight it is, the more important it becomes. Rate is a score level of capabilities with 4 as a primary opportunity, 3 as a secondary opportunity, 2 as a secondary threat, and 1 as a primary threat.

respectively. This phenomenon illustrated a holding and maintaining the situation. The strategies that should be applied are the improvement of the efficiency of the energy and environmental management system based on the marketing penetration strategy and the developing of environmental and energy instructional quality based on the product development strategy (Khajezadeh et al., 2019).

TOWS Matrix Analysis for Energy and Environmental Excellence

After the SWOT analysis, the TOWS analysis was applied to generate alternative strategies by brainstorming ideas from school administrators and teachers. Paring major factors to construct appropriate strategies by applying the TOWS matrix of the school yielded four types of alternative strategies that could be adopted for environment and energy excellence, including:

(1) Proactive strategy (SO), using strengths in conjunction with opportunities: creating a curriculum and promoting learning activities incorporating energy and environment. It is intended to enhance educational quality by incorporating multi-disciplinary sciences to enable students to apply their knowledge in their daily lives and future careers. The activities focus on promoting diverse energy innovation. Such innovative activities include drying with a solar dryer, smart farming, production of compost from food waste, production of biomass from agricultural residues, production of biomass pellets, production of biogas for school consumption, production of roadblocks from recyclable plastic waste, and dust-free room preparation.

(2) Corrective strategy (WO), overcoming weaknesses with opportunities: Equipping human resources with expertise in energy and environment is to develop awareness and capability of teachers and educational personnel for implementing and applying energy innovation and technology to enhance the learning achievements of students.

(3). Preventive strategy (ST), using strengths to avoid threats: Developing green school learning resources will help to develop learning media and resources for learner-centred instructional management by installing energy innovations and demonstration systems within the green school. They may include a solar power generation system, a solar dryer, a solar water pumping system for smart farming, a learning centre about organic agriculture and composts, a biomass production system, a biogas production system, a learning centre for one-stop waste management, a DIY air filter, or a smart dust monitoring system.

(4) Defensive strategy (WT), reducing weaknesses and avoiding threats: Revising the energy management system will help reduce energy costs and increase income using renewable energy. It is a plan for the school's energy management with clear, practical

guidelines, indicators, and operation assessment by applying the ISO 50001 energy management systems standard to limit and reduce energy costs and increase sustainable energy production efficiency.

School Administrative Strategies for Energy and Environmental Excellence

The school context assessment using the TOWS matrix analysis led to the construction of strategic plans consisting of primary and secondary strategies and operation projects. The strategies and operation projects are shown in Figure 2. Six experts validated these strategic plans to verify the propriety and feasibility of the strategies in ensuring the accuracy of the information prior to their actual implementation in the school. The average scores for the primary strategies were high, with average scores of 4.42 and 4.38 out of 5.00, respectively. Average scores for the secondary strategies were also high for the propriety strategies (4.43) and feasibility strategies (4.29). Lastly, average scores for the operation projects, too, were at a high level at 4.29 for the propriety strategies and 4.25 for the feasibility strategies. However, when interpreting results regarding the sum scores of proprieties and feasibility for the primary strategies, it was found that SO and WO strategies were equally important for the experts, with a total score of 4.58. The ST and WT strategies were next important, with scores of 4.25 and 4.16, respectively. Thereafter, the AHP analysis was applied to select and rank a strategy for

the administrators of the Maewinsamakkee School to follow.

Analytic Hierarchy Process (AHP) Analysis for Strategy Selection

After the strategy verification by the experts, five school administrators were asked to select the most necessary and urgent strategy to drive the education management policies for promoting an environment-friendly quality of life. The AHP was applied as an analysis of complex decisions. The AHP model for decision-making in defining alternative strategies is shown in Figure 3.

Figure 3 illustrates the AHP Model for assisting the decision-making in specifying alternative strategies for the school. The CIPP model was applied as the selection criteria for implementation decisions. Context evaluation (C) is to consider the operation goals. Input evaluation (I) is to consider the operational budget. Process evaluation (P1) is to consider operational activities. Product evaluation (P2) is to consider operational achievements. After the pair-wise comparison was applied to prioritise the criteria, each pair of alternative strategies was analysed to prioritise the best choice among the four alternative strategies. These alternative strategies consisted of (1) SO strategy: creating a curriculum and promoting learning activities incorporating energy and environment, (2) WO strategy: equipping human resources with expertise in energy and environment, (3) ST strategy: developing green school learning resources, and (4) WT strategy: revising the energy management system to reduce energy costs

School administrative strategies for energy and environmental excellence

Primary strategy 1 (ISO)
Creating a curriculum and promoting learning activities with the incorporation of energy and environment

Secondary strategy 1: Developing an integrated curriculum for energy and environmental sustainability
1. STEM-integrated curriculum for developing 21st century learners
2. Energy and environmental learning supervision, monitoring and assessment

Secondary strategy 2: Promoting energy and environment-oriented learning management process and activities
1. Cultivating energy and environmental knowledge, and awareness of students
2. Waste-free school
3. Energy and environment innovation activity
4. Energy and environment study camp

Primary strategy 2 (WO)
Equipping human resources with expertise in energy and environment

Secondary strategy 1: Preparing educational personnel for green school standard
1. Educational personnel meeting for energy awareness cultivation
2. Excursions on energy and environment

Secondary strategy 2: Developing personnel to have potential and capabilities in energy and environment
1. Leader teachers training on energy and environment
2. Classroom research training for energy and environmental improvement
3. Professional learning community for energy and environmental improvement

Primary strategy 3 (ST)
Developing green school learning resources

Secondary strategy 1: Developing energy and environment-oriented learning resources
1. Educational media production and tools for green classroom standard
2. Developing green school learning resources

Secondary strategy 2: Developing and environment-oriented networks and empowerment
1. Leader teachers training on energy and environment
2. Classroom research training for energy and environmental improvement
3. Professional learning community for energy and environmental improvement

Primary strategy 4 (WT)
Revising the energy management system to reduce energy cost and increase income by using renewable energy

Secondary strategy 1: Developing participative management system to drive the green school
1. Meetings to drive green school development plans and operations
2. Developing energy criteria and indicators for green school management
3. Promoting energy efficient equipment for energy conservations
4. Waste management

Figure 2. School administrative strategies for energy and environmental excellence

Figure 3. AHP model for decision-making in defining alternative strategies

and increase income by using renewable energy. The AHP analysis results are shown in Tables 3 and 4.

Table 3 shows the assessment results in the selection of alternative strategies by five school administrators. The data was derived from analysing the questionnaire and the matrix record to compare the paired criteria from each administrator. Thereafter, the consistency ratio (C.R.) was examined. The results illustrated that the C.R. value was less than 0.08, which was acceptable.

The finding from this research indicated that the decision on the criteria weights was logical and corresponding. The results from the administrators were then calculated for the Eigenvector mean.

The AHP analysis results to select the most suitable strategy for the school to achieve environmental and energy excellence showed that the importance weights of the strategy selection criteria were operational goals (C), achievements (P2), operation activities (P1), and

Table 3
Alternative strategy selection results

Criteria	Weight of importance					Total	Eigenvector mean	Priority
	1st person	2nd person	3rd person	4th person	5th person			
C	0.4092	0.4658	0.4168	0.3487	0.4118	2.0523	0.4105	1
I	0.1104	0.2771	0.1209	0.1145	0.1080	0.7309	0.1462	4
P1	0.2150	0.1611	0.2695	0.2160	0.1872	1.0488	0.2098	3
P2	0.2654	0.0960	0.1928	0.3209	0.2930	1.1680	0.2336	2
C.R.	0.0534	0.0115	0.0264	0.0441	0.0263	-	-	-

Note. C.R. mean = 0.0323

operational budget (I), with the weights of 0.4105, 0.2336, 0.2098 and 0.1462 or with the percentages of 41.05, 23.36, 20.98 and 14.62, respectively. It could be concluded that Maewinsamakkee School focused on the operation goals the most to develop energy and environmental excellence.

Table 4 shows the five school administrators' priority results of the alternative strategies. When this priority was assessed, the alternative strategies with the highest weights of importance were ranked from high to low in the following order: the WO strategy, "equipping human resources to have expertise in energy and environment," the WT strategy, "revising the energy management system to reduce energy cost and increase income by using renewable energy," the SO strategy, "creating a curriculum and promoting learning activities with the incorporation of energy and environment," and the ST strategy, "developing green school learning resources." The total weights were 0.3091, 0.2649, 0.2470, and 0.1781, or 30.91, 26.49, 24.79, and 17.81, respectively. The results indicated that the school prioritised human resource development to strengthen its academic potential and to raise the quality

levels of learning management on energy and environment for students.

The WO alternative was a corrective strategy exploiting opportunities to propel the school towards energy and environmental excellence. The school received external support in organising training and educating personnel to raise their energy and environment expertise. This strategy comprised five projects, including convening meetings for school personnel to cultivate their understanding and awareness of energy, organising excursions on energy and environment, training leaders of teachers on energy and environment, conducting classroom research training to improve learning and teaching on energy and environment, and enhancing professional learning community on energy and environment. In addition, the analysis of the open-ended questions in the questionnaire for the school administrators revealed that the administrators desired school personnel to be trained and developed regularly to keep abreast with technological changes and to have potential in instructional management, emphasising the learning achievements of learners.

Table 4
Priority results of the alternative strategies

Alternative strategies	Criteria Weight				Total (1)	Priority
	C (0.4105)	I (0.1462)	P1 (0.2098)	P2 (0.2336)		
SO	0.2600	0.2257	0.2610	0.2287	0.2479	3
WO	0.3170	0.3099	0.3021	0.3011	0.3091	1
ST	0.1845	0.2040	0.1655	0.1622	0.1781	4
WT	0.2386	0.2604	0.2715	0.3080	0.2649	2

Leadership Practices for Sustainable Energy and Environmental Excellence

After the AHP strategy selection, school administrators were interviewed to ascertain leadership practices for achieving sustainable development in energy and the environment through education. As school administrators prioritise teachers as the most important factor influencing student achievement, the interviews revealed five keys to leadership success in human resource development. The first four keys for school leadership were following the CIPP model, while the other key involved effective followers. These key practices were:

(1) Goal-setting: Setting goals for staff training in energy and environment is a crucial leadership practice that substantially impacts the quality of education and students' academic success. The goals need to be clear and attainable with guidance and direction from school leaders for successful implementation.

(2) Strategic budgeting: Adequate budget and resources are essential for sustainable investments in staff training and professional development concerning energy and the environment. The budget needs to be prioritised according to areas requiring the most attention and appropriately spent to achieve the school's needs. For leaders with a restricted budget, plans for sustainable cost optimisation are needed.

(3) Activity planning: Professional development activities must be set up to align with the school's objectives and budgets in improving energy and environmental skills and staff members' knowledge. The training activities must also be relevant to the needs of staff members; therefore, it is important to ensure that staff is involved in the training design process.

(4) Achievement striving: School leaders who strive to achieve their goals can lead a team towards attaining sustainability and excellence in energy and environment. Striving for goal achievement requires practical leadership skills to plan, manage, monitor, and evaluate the effectiveness of staff training activities and their impact on student learning outcomes.

(5) Collaborative building: Collaborative work environments would assist in increasing the productivity and efficiency of the organisation. Collaboration must be encouraged by the school leaders to provide staff members with a sense of community and encourage them to participate in teams for high-performance results actively.

School administrators reported an important requisite of leadership and followership for the success of policy implementation. The interviews indicated the importance of school leaders as the main factor in ensuring achievement. However, the leaders alone cannot accomplish the mission without the contribution of effective subordinate staff. Therefore, school leaders must inspire staff commitment to fulfil the

goals, achieve high-performance results, and improve student outcomes.

DISCUSSION

Education plays a key role in creating a productive workforce for an advanced industrial society. It also enhances public awareness and concerns for energy and the environment due to economic growth and technological innovation (Kioupi & Voulvoulis, 2019). Wittayasin (2017) found that an important requirement for Thailand to achieve economic success and sustainable development outcomes is to equip people with knowledge and skills to thrive in the future through education. Improvement in the quality of education will transform society and empower people to strive together for a sustainable future (Shulla et al., 2020).

The importance of energy and environmental education for sustainable development has been recognised globally. Many past studies have suggested integrating the topics of renewable energy and the environment into the classrooms at all levels to equip students with knowledge and skills to address the 21st century's environmental challenges (Kandpal & Broman, 2014). Additionally, as indicated by Mahat et al. (2020) and Zsóka et al. (2013), environmental education and education for sustainability significantly influence students' environmental awareness, knowledge, attitude, and action. This research supports the arguments of past studies by promoting the green school concept to drive the achievement of SDGs

and sustainably enhance the quality of life. In the face of global competition, schools must equip their students with 21st-century skills and build students' knowledge to address environmental issues and adopt a life in harmony with nature (Wojuola & Alant, 2019).

Education policies should be adopted about the needs of society. The challenges for schools, therefore, concern their ability to embed national policies into school policy development and practices (Wangmo, 2018). This study developed energy and environmental excellence strategies and leadership practices for Maewinsamakkee School to contribute to global action. The results indicated four primary strategies for Maewinsamakkee School, including (1) SO: Creating a curriculum and promoting learning activities incorporating energy and environment, (2) WO: Equipping human resources with expertise in energy and environment, (3) ST: Developing green school learning resources, and (4) WT: Revising the energy management system to reduce energy cost and increase income by using renewable energy. An AHP was then applied to select strategic options for Maewinsamakkee School. AHP has been used extensively by many decision-makers and researchers to make complex decisions (Russo & Camanho, 2015). As Barcelona (2020) suggested using AHP to ensure the research quality in education, this research also advocated using AHP as a suitable method to apply in the decision-making process for educational administration. For any school to be successful, executive

decisions require an effective decision-making process to improve educational practices to meet the needs of and be consistent with the school contexts (Ayeni, 2018).

Concerning AHP priorities, the criteria applied in this study for the AHP to evaluate alternative strategies were the CIPP evaluation model as C (goals), I (budget), P1 (activities), and P2 (achievement). The decision-making process was conducted by comparing the four mentioned alternative strategies among SO, WO, ST, and WT, following the pre-defined criteria of the CIPP evaluation model proposed by Stufflebeam. This model is considered one of the most effective models for evaluating programs, projects, products, institutions and systems (Mohebbi et al., 2011). Over the years, the model has been adapted and employed in various fields at the end of the project, at the beginning and during the implementation process (Aziz et al., 2018; Sopha & Nanni, 2019). Of these four alternative strategies, it was concluded that equipping human resources with expertise in energy and the environment was the most important. Increasing teacher effectiveness through training and development would improve teacher capacity and student outcomes. This finding is consistent with that of Alton-Lee (2011), Ghazzoul (2018), and Huang et al. (2019), emphasising the importance of teacher professional development to enhance student achievement. Liu et al. (2015) and Camasso and Jagannathan (2018) also confirmed the importance of teachers in providing quality environmental education.

As a result, teachers need to update their professional skills and knowledge in environmental education pedagogy to raise the quality of teaching and learning to achieve SDGs (Murphy et al., 2021).

Incorporating national and international policies into school policy formulation transforms the connection from the abstract to the concrete. School leaders are crucial to implementing policy, as they control the school's direction and lead and manage school members to achieve the set goals (Day et al., 2016; Klar & Brewer, 2013; Mingaine, 2013; Mthethwa, 2012; Syomwene, 2013). Five key successes for school leaders to operate following the SDGs policies were found in this study for effective management. These keys include goal setting, strategic budgeting, activity planning, achievement striving, and collaborative building. The discovered keys to leadership success are related to the CIPP components, as they can be conducted for continuous improvement and successful goal attainment (Bukit et al., 2019). The first task of school leaders is to set clear goals and provide direction for achieving goals. The finding of this study is consistent with the suggestions made by Kiprop and Kanyiri (2012) and Van Wyk and Moeng (2014) that the school's goals must be clear, measurable, and possible to implement. Additionally, the budget is essential for the implementation of the SDGs. This finding agrees with Willy and Osadi (2019), which indicates a strong correlation between the implementation of the school budget and the efficient development of education.

Consequently, a sufficient budget should be allocated, prioritised, and spent properly for optimum results. Akpan (2016), the author indicated the need for school leaders to plan and facilitate activities to improve the quality of the teaching and learning process. The viewpoint of Akpan (2016) aligns with the result of this study that school leaders must plan activities following the school's objectives and budget to improve the quality of education.

Another finding of this study demonstrates the need for school leaders to strive for excellence to achieve the SDGs. Striving for excellence requires school leaders to plan, manage, monitor, and evaluate their performances to ensure their goals and objectives are achieved. This finding is supported by the work of Mthethwa (2012) and Syomwene (2013), that school leaders need to supervise, monitor, and evaluate their actions to obtain effective results. This management process would enable school leaders to understand the problems better and adjust the methods used to achieve progress in the right direction. Finally, the result of this study also reveals the importance of school leaders in promoting team collaboration. As reported by previous researchers, staff members need to have a shared vision and a sense of ownership and participate actively in policy implementation, monitoring, and evaluation to achieve the desired results (Ansell et al., 2017; Bridwell-Mitchell & Sherer, 2017; Moosa et al., 2020). Suppose the school encourages staff members to share a vision and perform as per previous

study recommendations. In that case, the school could succeed in the implementation of policy on education for sustainable development.

CONCLUSION

The SDGs are a global vision to address the challenges of achieving a better and more sustainable future. Most goals in the 2030 agenda for sustainable development require education to equip people with the knowledge and skills needed to survive and thrive. As people around the world adhere to the sustainable development agenda for the provision of education, sustainable strategies and leadership practices were developed and explained to balance the continual growth of society among human, social, economic, and environmental needs. Other schools seeking development according to the SDGs could also adopt the results found in this research in practice. However, they should apply appropriate strategies and most beneficial practices according to the school contexts, situations, and environment conducive to student development.

A significant aspect highlighted in this research is the need to raise teacher quality through human resource development to accomplish sustainable development. In many countries, most teachers are poorly prepared to teach topics related to the integration of energy and the environment for sustainability. Therefore, continuing professional development related to energy and the environment should be promoted to update the knowledge and skills of the school members. In doing so, school leaders

have a key role to play in the success of the human resource development of teachers. School leaders are responsible for setting clear goals, allocating budget, planning activities, and evaluating teacher training and development results in energy and environment. They also need to foster staff collaboration for active professional learning communities (PLCs) to enhance their teaching practice and improve student outcomes. Achieving SDGs requires effective leadership to design strategic plans and implement activities for successful implementation.

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SOCIAL SCIENCES & HUMANITIES

Objet petit a and Jouissance: A Critical Study of Gaulib Shiraz Dhalla's The Exiles (2011)

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ABSTRACT

The experiences of homosexual individuals are diverse and unique. Suppression of desire is consequential when homosexuality is considered a taboo, and heterosexuality is rooted in a social and cultural organizations**.** This research paper attempts to analyze Gaulib Shiraz Dhalla's *The Exiles* using the concepts of Jacques Lacan's *objet petit a* and *jouissance. Jouissance* describes the deeply rooted yearning/surplus enjoyment, and *objet petit a* discusses the lack that is present in an individual, which sets forth a journey of seeking fulfillment. This study also focuses on the difficulties of confronting one's homoerotic desires and attempts to demonstrate how the deeply embedded heteronormative society, including the family, suppresses and prevents homoerotic desires from attainment. The paper found that the heteronormative society does influence one's attainment of homoerotic desires, which results in the suppression of such desires accompanied by shame, despair, and loss. This paper also discovered how heteronormativity, especially the societal and cultural stigma, can be detrimental to homosexual individuals from achieving *objet petit a* and *jouissance*.

Keywords: Desire, excessive desire, heteronormativity, homosexuality, marriage, suppression, unattainability

INTRODUCTION

Heteronormativity can be defined as "a societal hierarchical system that privileges and sanctions individuals based on presumed binaries of gender and sexuality; as a system it defines and enforces beliefs and practices about what is "normal" in everyday life" (Toomey et al., 2012, p. 188). Heteronormativity, therefore, is understood as a system that authorizes and denounces

individuals who are inept and unsuccessful in adhering to an "acceptable" and "normal" social structure. Heterosexuality marshals the sex and gender frameworks in society. Heterosexuality thus assumes privilege, naturalization, and normalcy (Myers & Raymond, 2010). Heterosexuality is understood and followed as the foundation of society. Due to this, sexuality is established in "societal structures and connected to central social institutions, such as the family and marriage" (Herz & Johansson, 2015, p. 6).

Heterosexuality in a heteronormative society can be maintained by the practice of marriage and family life (Jackson, 1999). This marital institution is believed to be sacred and mandatory. Marriage is important, but desire also holds precedence. Nevertheless, sexual minorities are not given the luxury of being with the person they desire (Rich, 1980); hence, these desires are suppressed. Over time, tolerating and suppressing these desires may become tormenting and problematic. Lacan's *objet petit a* and *jouissance* are used to analyze and reconsider the hegemonic heterosexual system critically.

Lacan's *objet petit a* and *jouissance* are central concepts of his contribution to psychoanalytic theory. Jacques Lacan's unattainable *objet petit a* (Lacan, 2006) and *jouissance* is used in this research paper to analyze Gaulib Shiraz Dhalla's *The Exiles* (2011). *Objet petit a* is an object that causes desire, but this desire may be unattainable. *Jouissance* depicts the surplus enjoyment one yearns for, which may also

be dangerous. The concepts are used to examine queer experiences as it expresses the unattainability of desire. This theory is used to bring forth the same-sex desires and the challenges of queer individuals living in a pro-heterosexual society.

While Butler (2002) discusses gender binary structure through gender performativity, Sedgwick (2008) explores the metaphor of the closet and the failure of contemporary western culture to include a homoerotic definition. Foucault (2019) discusses the systematic rise of the concept of sexuality, and Warner (1991) discusses the troubling queer existence and the issues of same-sex marriages. Freud and Crick (1899/1999) discuss Oedipus complex and castration complex and consequently discuss the concept of desire through heterosexual relationships where a man and a woman unite due to "mind and body, psyche and sensuality" (Belsey, 1993, p. 384). However, Lacan's (2001) concepts include queer subjectivities that deeply support this study. Additionally, Lacan's *objet petit a* and *jouissance* discuss the push and pull of desire that other theorists do not concentrate on. Lacan also observes that the origin of desire is in the language and consequently denaturalizes sex and sexual relations. By denaturalizing sex, Lacan also "deheterosexualizes" desire which helps in including non-normative sexualities (Dean, 2003; Miller & Lacan, 2018). Since Lacan's concept of *objet petit a* and *jouissance* discusses the challenges faced by queer individuals and the difficulty of attaining sexual desire, the study uses Lacan's concepts.

Additionally, Butler (2002), Warner (1991), Sedgwick (2008), and Foucault (2019) bring out different aspects and features related to sexuality, queer experiences, and gender binary structure; they also argue for non-heteronormative and non-gender binary structures that include all kinds of sexuality and gender expressions. Similarly, some of the seminal texts such as *Maurice* by E. M Forester (1971), *Orlando: A Biography* by Virginia Woolf (1928), *The Price of Salt* by Patricia Smith (1952), *Giovanni's Room* by James Baldwin (1956), *The Well of Loneliness* by Radclyffe Hall (1928), *The Color Purple* by Alice Walker (1982), *The Line of Beauty* by Alan Hollinghurst (2004), *The Single Man* by Christopher Isherwood (1964), The Picture of Dorian Grey by Oscar Wilde bring out the cultural and societal exclusion that ignores desires and carnal relations between same-sex and queer individuals. Similarly, the chosen literary text not only attempts to demonstrate the exclusion and discrimination faced by homosexual individuals but discusses the significance of desire and the unfortunate challenges faced by queer individuals in attaining desire as a result of the domineering heteronormative society.

Lacan's *objet petit a* has evolved and been discussed over the years with several interpretations. Lacan observes how fantasy could be structured and is a cause of desire (Lacan et al., 2020). Lacan uses his seminars to explain desire and its specificity. If desires were merely feelings or biological drives, the desirous object could be anything.

Nevertheless, human tendencies toward desire are specific, and only these specific features attract an individual's attention (The Dangerous Maybe, 2019). Lacan notes that people's desires could be dependent or highly based on unconscious fantasies. Nevertheless, this desire may not be completely satisfied. This lack of fully satiated desire represents the subject's *objet petit a*. (Lacan, 2001). Lacan also discusses *jouissance* which means surplus enjoyment. In his lecture, *Psychoanalysis and medicine* 1966, Lacan observes:

> What I call *jouissance*—in the sense in which the body experiences itself—is always in the nature of tension, in the nature of a forcing, of spending, even of an exploit. Unquestionably, there is *jouissance* at the level at which pain begins to appear, and we know that it is only at this level of pain that a whole dimension of the organism, which would otherwise remain veiled, can be experienced. (p. 60)

Jouissance can also mean the presence of pain attached to excessive enjoyment. It implies that in *jouissance,* there is pleasure, and in pleasure, there is pain. Furthermore, the intensity wrought with such enjoyment may also cause harm (Clemens & Grigg, 2006).

As there might not be an end to seeking fulfillment or enjoyment, *jouissance* makes all individuals crave excessively such that the excessive need may create problems in one's life. For example, an individual keeps

switching off the light compulsively, which becomes problematic. That is why Lacan calls this a death drive. And hence desire in terms of *jouissance* is an unattainable continuous ache that cannot be fulfilled (The Dangerous Maybe, 2019).

Desire also describes the lack that the subject experiences trying to fulfill this lack. The lack is what authenticates the desire. Nevertheless, the subject's lack cannot be experienced because of its unstable state (The Dangerous Maybe, 2019). We also need to understand that *objet petit a* is the same as lack present in the subject and the other. Because of this, the subject has an impossible relationship with the lack: the one that gives pleasure and takes pleasure (Kirshner, 2005).

Jouissance makes an individual thrive on finding his/her meaning in life or symbolic identity. The symbolic order can be the various rules and regulations of language, traditions, or culture; hence, human subjectivity is influenced and embodied. It is where the Real comes to place. An infant's *jouissance* becomes its mother; that is to say, an infant's complete satisfaction or enjoyment is mother. Nevertheless, the infant is not yet touched by society, law, and custom; hence, the infant is a non-socialized being called an unmediated and focused *jouissance.* Nevertheless, as the *jouissance* becomes excessive, the infant tries to go far away. Lacan observes that while the mother's presence is soothing, the child also wants to distance himself. Lacan describes the mother as a crocodile with the child wedged between the jaws. The child yearns to be free of their mother. At the same time, the father figure denies this drive satisfaction. The child must stop and search elsewhere for the drive satisfaction, which must be appropriate in terms of societal norms. Thus, the child falls away from the signifying chain and steps into the symbolic order, which denotes meaning or language (Clemens & Grigg, 2006). Henceforth the child becomes independent and must find its body of *jouissance*. Thus, this is when language plays its role (Miller & Lacan, 2018). It is also important to understand that the child is unhappy in the presence of *jouissance.* Nevertheless, the instant it is free from the mother, the child begins to feel a part of it missing. Furthermore, this part is *objet petit a*, something missing in our lives. Individuals are under constant stress to find it, but they never can. Therefore, *objet petit a* is something that is increasingly yearned for but can never be achieved. Even if it is achieved, it can only be temporary. Nevertheless, the void reappears and hence is incomplete. Thus *Objet petit a* is a void; the fulfilment of which results in making an individual one whole (Clemens & Grigg, 2006).

Subsequently, when examining queer experiences, the LGBTQA+ society faces tremendous stigma from mainstream society. Various reasons like homophobia, societal pressure, familial pressure, and patriarchy significantly marginalize the LGBTQA+ community from mainstream society. Society encourages and normalizes heterosexuality and thereby subverts homosexuality. Due to the onslaught of the heteronormative society,

forming relationships according to the needs of homosexual individuals becomes traumatizing and difficult. Resistance and prohibition from having same-sex relationships by the traditional and cultural norms of family and society lead to a life of isolation and loneliness. This paper attempts to use Lacan's *objet petit a* and *jouissance* to bring out and analyze the suppression of desire and stigmatization of society that can be wounding and disastrous to an individual belonging to the LGBTQA+ society.

METHODS

Various methods were used to find relevant materials. A combination of terms such as "Jacques Lacan," "jouissance," "objet petit a," "object cause of desire," and "homosexuality" was searched through many databases. The search results were chosen based on the relevance of the topic. Keyword searches were performed in Google Scholar, Google Search engine, and Publish or Perish software. Initially, concepts relating to desire, sexuality, psychoanalytic theory such as the Unconscious, Lacanianism, Lacan psychoanalysis, the language, symbolic order, signified, desire, the Other, Slavoj Žižek, Freud, Freudian Psychoanalysis, the Semiotic, objet petit a, jouissance, queer experiences, heteronormativity, homosexuality, and oppression were found and studied. However, some of these concepts were overwhelming, broad, and less significant to the current study. Consequently, concepts and key terms were excluded based on the inappropriateness and the lack of connection between issues

of the primary text and desire, resulting in filtering all the other theories that accept Lacanian concepts. To explore Lacanian concepts, seminars, lectures, and articles were then studied to find specific theories or concepts that would neatly fit the various attributes of the desire of queer individuals. Attainment, fulfillment, the actualization of desire, and failure to attain were also concepts that needed careful attention that helped to get an in-depth study of the current study. As these criteria of the primary text and theory were fulfilled, key terms were selected by filtering and retrieving them. The keywords were verified by searching the keywords in search engines, like Google Scholar, and Publish or Perish software to locate these terms in different research articles, conferences, and academic books. The inclusion of the chosen and finalized seven key terms reflected the specificity of the study, highlighting the theory, the concept of desire, and the queer culture. This research paper has taken the theory of Jacques Lacan's concept of jouissance and objet petit a to analyze Ghalib Shiraz Dhalla's novel The Exiles to draw out the domineering heteronormative society.

The Exiles provides a wonderful illustration of Lacan's *objet petit a* and *jouissance*. The novel follows the story of Rahul Kapoor, who married Pooja Kapoor for 21 years with a son Ajay. Rahul and Pooja have been chaste for seven years, due to which Rahul finds himself unfulfilled. When Rahul meets Atif, he is immediately attracted to Atif and begins a relationship. Rahul falls in love with Atif and is torn

between his marriage and lover. As Pooja and Ajay begin to notice Rahul's lies and late arrival (to home), guilt pervades his conscience. However, Rahul's attempt to avoid Atif and be faithful to his wife is unsuccessful as Rahul is drawn to Atif. After Sonali (Pooja's friend) reveals to Pooja about Rahul's passionate kiss with another man (Atif), Pooja confronts Rahul and is ashamed of Rahul's homoerotic desires. Ajay's disapproval of his father's sexual orientation escalates. Atif dies as a result of Ajay's physical assault on Atif. Ajay also meets with an accident and succumbs to death. Pooja, traumatized by her husband's abandonment and her son's death, smears her body with her son's ashes and commits suicide. Rahul is left all alone in the end.

Rahul's story marks the representation of *objet petit a* and *jouissance*. Rahul's interest in Atif embodies the presence of *objet petit a*. And Rahul's yearning for Atif connotes *jouissance*. However, *objet petit a* is idiosyncratic as it supports every individual with their peculiar and specific desires. At the same time, *objet petit a* is not the object of desire but the object that causes desire. In this novel, Rahul's homoerotic desires are evoked in Atif, who is also a homosexual.

> The *objet petit a* is not what we desire, what we are after, but, rather, that which sets our desire in motion... however, desire nonetheless retains a minimum of formal consistency, a set of phantasmic features which, when they are encountered in a positive

object, make us desire this object—*objet petit a* as the cause of desire is nothing other than this formal frame of consistency. (Žižek, 1997, p. 53)

Therefore, *objet petit a* is the object that causes desire. Rahul finds Atif's features and mannerisms attractive, which evokes his desire. The newly revived interest in Rahul pushes him to fulfill his void with determination to find his drive. Therefore, an attempt is made to fulfill the void in him.

Objet petit a is paradoxical as it emerges and recedes. At the same time,

> ...this coincidence of limit and excess, of lack and surplus— precisely that of the Lacanian *objet petit a*, of the leftover which embodies the fundamental, constitutive lack (Zizek, 1989, p. 54)

Atif is the object cause of desire. Even though Pooja wants to be the object cause of desire, she is rejected by her husband. "I've always felt great love for her. But never great passion" (Dhalla, 2011, p. 91).

Pooja does not incite desire in Rahul. In consequence, she cannot be the object cause of desire. Rahul covets Atif as he is the *objet petit a* and begins to have feelings for Atif. Since the subject of love is incorporated with the object of desire for both the subject and the other, they must hold the place of the cause of desire (Clemens & Grigg, 2006).

In his childhood, Rahul, being involved with Hanif, loses him. Similarly, Rahul attains Atif but also loses him repeatedly. This constant ebb and flow between lack

and surplus enjoyment embody the lack in Rahul. Also, Rahul's deprivation of homoerotic love represents the lack of Rahul.

Rahul is not sexually interested in his wife.

> Rahul was aware that this abstinence was not by Pooja's preference but his lack of sexual desire in her. On rare occasions that she was able to overcome the awkwardness and tried to initiate any intimacy between them, Rahul tactfully dodged it. The fires of sexual desire doused; The marriage turned more fraternal. (Dhalla, 2011, p. 30)

Rahul's marriage with Pooja feels devoid of love and happiness. He feels incomplete and like a non-being. Also, Rahul's disinterestedness, escape from intimacy with Pooja, and absence from household duties depict his apathy toward his life as a heterosexual man. As a homosexual man, his excessive need for homoerotic love also describes the pre-existent deprival of the same homoerotic love. Rahul's unnoticed pursuit describes Rahul's lack indicating *objet petit a*. After attainment, it is lost repeatedly, and thereupon he never attains *jouissance* (complete drive satisfaction) altogether. The original *jouissance* Rahul received by having a sexual relationship with Hanif was lost. He was forced to sacrifice and dismiss his *jouissance* to assimilate into the heteronormative society. Also, when the school children taunted Hanif for being a homosexual, Rahul ignored and supported the homophobic children. When Hanif's dead body washed up, Rahul remained mute. It evinces Rahul's attempt to conform and adapt to the heteronormative world.

Since the homophobic society does not encourage homoerotic love, Rahul does not attain *jouissance*. "The inscriptions will be repeated in an attempt (not) to attain *jouissance*: the signifier is both the means for arriving at enjoyment and the cause of its loss" (Clemens & Grigg, 2006, p. 38). As Rahul meets Atif for the first time, he realizes he can attain his drive satisfaction. Rahul is also completely captivated by Atif's physical appearance. Atif is marked with "Other who, through his or her gestures, marks the body, even the skin, as an object of enjoyment" (pp. 37–38). Rahul thinks, "Calm down, calm down... you're making things worse" (Dhalla, 2011, p. 5). These sentences depict Rahul's anxiety when he drives to meet Atif. "Now I can feel the air in my lungs. Now the merciless counting of time can stop" (p. 19). When Atif gives his phone number, Rahul is "pregnant with expectation" (p. 59). Rahul's yearning for homoerotic love is evident; thus, Rahul's interest in Atif describes *objet petit* in a very insistent way.

Thus, the subject acquires enjoyment from the Other's enjoyment (Lacan, 1992). Atif is also attracted to Rahul. Disowned by his parents, Atif is in America alone. Nevertheless, when he meets Rahul, all his loneliness gets dispelled by his presence, and he becomes besotted with Rahul. However, Rahul's familial commitments lead Atif to extreme anxiety.

Rahul, masquerading the identity and role of a heterosexual, is still closeted. He "could scarcely even use the word 'gay'" (Dhalla, 2011, p. 42). Even after sharing a passionate kiss with Atif, Rahul still "has been hiding in the closet all his life" (p. 43). Rahul also forces himself on Pooja to prove himself as a straight man. However, all that he discerns is the affirmation of his homosexual identity. Coming out of the closet becomes an excruciatingly painful process for him due to which acknowledging his same-sex desires becomes challenging.

Rahul is the perfect example of *jouissance*. Even though Rahul has an intimate relationship with Atif, he cannot fully attain wholeness. Nevertheless, he yearns for him and believes his life could be better. Rahul's remembrance of his encounter with Hanif insists on his homoerotic feelings. The confused unacceptable feelings are clearly expressed by Rahul "why can't I get him out of my mind? Can I really be feeling this strongly for another man? Why now? How do I stop this?" (Dhalla, 2011, p. 65). The painful excitement of *jouissance* is seen through Rahul. "I must be going crazy," he thought. "I must fight this. Keep it under, where nobody can see. Even to think of it is to give it life, bring it to the surface" (p. 65). The excessive need to attain Atif and the anxiety is evinced. The aim of the drive/*jouissance* is not accomplishing gratification but the failure of satisfaction. It subsequently implies the repeated failure of attainment (The Dangerous Maybe, 2019). Therefore, here Atif becomes the *objet petit a*, which

Rahul wants and lacks in Rahul. Therefore, there is a movement from Rahul's *jouissance* to desire. Thus, *objet petit a* is the cause of desire. Similarly, Rahul cannot stop going back and forth. On one side, he has his lover, and on another, he has his wife and son.

> The problem involved is that of jouissance because jouissance presents itself as buried at the center of a field and has the characteristics of inaccessibility, obscurity, and opacity; moreover, the field is surrounded by a barrier which makes access to it difficult for the subject to the point of inaccessibility, because jouissance appears not purely and simply as the satisfaction of a need but as the satisfaction of a drive. (Lacan, 1992, p. 209)

Rahul has the perfect wife, "She was so reliable, beyond reproach, exhaustively impeccable. It was impossible for her to even botch a meal once in a while. How does one measure up to such a woman?" (Dhalla, 2011, p. 145). However, Rahul's discontentment indicates his unfulfilled drive. Rahul is held up by his marriage vows and cannot stop feeling guilty whenever he meets Atif. It is a *jouissance* for Rahul, which includes extreme pleasure with Atif and extreme pain without him. Infidelity, excuses, societal pressure, and religious customs take a toll on his life. Rahul, also being an Indian, tries to live by the gender codes subscribed by the Indian traditional marriage system. Pooja, a devotee of

Lord Krishna, expects her husband to sweep her feet off the ground and love her. Nevertheless, Rahul who is aware, understands Pooja's sacrifice as Rahul's wife. However, soon their relationship disintegrates. To Pooja, Rahul "began to dissolve into a faceless lover" (p. 128).

This way, the original internal division and impossibility can be externalized onto the other. It is she who carries the enjoyment in her, with the result that it is to her that the demand will be addressed and upon whom the prohibition will be put. However, the structural impossibility ensures that this demand will never be fully met. It will have far-reaching consequences for the sexual relationship (Clemens & Grigg, 2006).

Rahul's dual self plays a vital role in pulling him into the mechanisms of socially appropriate heterosexual figures and the actual homosexual self. Manipulated by the dominant marital institution and family, Atif is plagued by agony. He says to himself, "You're all dispensable, he thought, looking around the room. Don't you see it? Replaceable" (Dhalla, 2011, p. 87). Atif feels like an outsider when compared to Rahul's wife. Nevertheless, Indian marriage adheres to strict norms and traditions which is a fundamental institution observed by Rahul and Pooja. Thus, Rahul's intentional dishonesty continually affects his relationship with Atif.

Rahul's continual attempt to be with Atif implies the attempt to attain *objet petit a*. Rahul is under constant confusion about his divided loyalties. His inability to attain Atif makes him undergo extreme anxiety, confusion, and emotional distress. "I don't know how to do this. This going back and forth, one life to another," he said, "It's too hard" (Dhalla, 2011, p. 144).

However, his familial duties wrench him back, making him incomplete for Pooja, Ajay, and Atif. Ajay, noticing his mother's loneliness and dismal behavior, angrily cries, "You don't give a shit about her" (Dhalla, 2011, p. 15). Ajay, who observes Pooja on the verge of depression, blames his father for his irresponsibility, "If you did, she wouldn't be in this state. I want to know who's more important to you than mom, why you are fucking bailing out on us." (p. 151). Even after this angry exchange, a distraught Rahul tries to stop seeing Atif, "I wish I could cut myself in two but..." (p. 179). Clearly, "*Jouissance* still remains forbidden" (Lacan, 1992, p. 184). The inward fight in Rahul is clearly apparent to Pooja, who finally accepts that ""we're lost," unable to go back and struggling to stay. We belong nowhere now. Perhaps not even to each other" (Dhalla, 2011, p. 161).

Rahul, who had found total enjoyment with Atif, loses that enjoyment again when Pooja discovers the homosexual affair. Ashamed and disgusted, Pooja lashes out, "What kind of a man are you? answer me!" she cried. "I've given you everything. Everything. What more is left, tell me? I made a promise to you, remember? For you, I gave up my home, my family... ?" (Dhalla, 2011, p. 260).

RESULTS

Rahul's attempt to find himself and attain Atif demonstrates the challenges in acquiring

objet petit a. The *objet petit a* is structured in the unconscious fantasy as external to the subject (Clemens & Grigg, 2006). Nevertheless, as soon as fantasy begins to act, anxiety shows itself, and symptoms appear through language or actions. There might also be delusions removed from reality. Moreover, this is evident in Atif being the *objet petit* for Rahul. Rahul and Atif's physical intimacy displays an attempt to attain total enjoyment or drive satisfaction. Therefore, Rahul sacrifices his life with Pooja. Atif being the *objet petit a* is unattainable.

Atif's death at the novel's end proves that attaining *objet petit a* is impossible. Ajay's and Pooja's deaths, being the heteronormative representatives, account for the competent opposition against Rahul from realizing *objet petit a*. A void is forever present in Rahul, and his pursuit of procuring *objet petit a* is unsuccessful through Hanif, Pooja, and finally, Atif.

> That object will be there when in the end all conditions have been fulfilled—it is, of course, clear that what is supposed to be found cannot be found again. It is in its nature that the object as such is lost. It will never be found again. Something is there while one waits for something better or worse, but which one wants. (Lacan, 1992, p. 52)

Every attempt is accompanied by heartbreak and emptiness. Even though he attains his *objet petit a* momentarily, complete attainment of *"objet a"* is "real-impossible" (Žižek, 1997, p. 222). Therefore, the lack is always present and persistent but without attainment.

DISCUSSION

The present paper attempts to analyze *objet petit a* and *jouissance* to bring out the influence of the disruptive heteronormative society. "… Heterosexuality also is connected to a social and cultural system," which is rooted in the "critique of marriage, nuclear families, and "heterosexual lifestyles" (Herz & Johansson, 2015, p. 5). As a result, for non-confirmative individuals, heteronormative society's regulation of family life, intimacy, and sexual orientation (Duggan, 2012) is problematic. The struggles and challenges of LGBTQA+ society are still prevalent. In a society that considers desire/sex a disgrace (Butler, 2002; Warner, 1991), confronting one's desire is traumatic. Furthermore, confronting desire in a homophobic world is much appalling, as homosexuality is considered a taboo (Berliner, 1987; Butler, 2002). However, desire is vital in every organism, giving reason to believe much-needed research might result in a sensitized and receptive society. This paper suggests the need for an all-inclusive society that could appreciate and accept diverse sexualities.

CONCLUSION

Jacques Lacan's *objet petit a* and *jouissance* discusses the various intricacies of desire. These concepts amalgamate complexities of desire, helplessness, confusion, identity crisis, guilt, and rage that revolve around desire and its difficulty of attainment.

Lacan's *objet petit a*, cause of desire, sketches the perpetual search for the lost object, and *jouissance* discusses the presence and fulfillment of enjoyment, which can also be dangerous. The pursuit of the attainment of desire is such that it may go beyond the contentment of the normal physiological needs of an individual. The attainment of desire and excessive desire fails with continuous unsuccessful attempts, due to which seeking desire (especially homoerotic desire) may be unhealthy and dangerous. Seeking desire also becomes detrimental as such a need or a want may result in unexpected and unpleasant outcomes. Rahul's attraction and desire to be with Atif destroy his world. Rahul loses his sense of self and struggles to understand his sexuality and desire. His attempt to attain homoerotic desire constantly fails as he faces multiple challenges and hurdles. Pooja's heteronormative cultural and religious beliefs question Rahul's sexual orientation and affairs. Ajay's disgust toward his father is evident in his anger and denial. Ajay's reaction to knowing his father's sexual orientation proves him to be a product of the dominant heteronormative society. Also, Ajay's physical assault on Atif proves his phobia of LGBTQA+ society. Also, Rahul's desires result in Atif's, his wife and his son's deaths. The heteronormative world represented by Pooja and Ajay proves the resistance caused by mainstream society to the unattainability of *objet petit a* and thereby rejecting Rahul's sexual orientation and desires.

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Gender Differences in Binge-Watching by Teenagers: A Uses and Gratification Analysis

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ABSTRACT

The research was aimed at exploring whether there are gender differences in binge-watching patterns of urban-educated youth of Pakistan. Using the Uses and Gratification approach as the theoretical foundation of the research, the research investigated whether the motivations for binge-watching differed between males and females. The research also analyzed differences between genders on the negative impact of binge-watching. The methodology adopted for the research was the quantitative survey method. The purposive sample selected for the study comprised 300 male and female teenagers (13–19 years) who binge-watch online streamed content. The study's findings revealed that Entertainment, Escape, and Excitement were the primary motivations of Pakistani teenagers to resort to binge-watching. However, it was found that Fear of Missing Out (FOMO) and Social Interaction were more important for females, while Excitement was deemed an important motivation by the males. Findings revealed that Sleep Disorder and Obesity were reported to be more of an issue than Depression and Productivity Issues. Furthermore, male binge-watchers reported a reduction in their Productivity, while female binge-watchers reported a disturbance in their sleeping patterns.

Keywords: Binge-watching, gender differences, teenagers, uses and gratification

INTRODUCTION

Streaming services, the most popular of which include Netflix, YouTube, and Amazon Prime, have emerged as major competitors of the traditional suppliers of audiovisual content such as TV and films. These streaming platforms, also known as

Video-on-Demand (VOD) or Over-the-top (OTT), have provided unlimited video-visual entertainment content to viewers in the new millennium. The popularity of these mediums has reached such a level that they have seemingly engulfed the minds of viewers of all age groups. The most significant trend regarding these streaming sites is binge-watching, which refers to watching three to four or more thirty-minute-long episodes of TV series or watching three or more one-hour-long episodes in a single sitting (Rubenking & Bracken, 2018). Although multiple names such as binge-viewing or marathon viewing were coined to express this phenomenon, binge-watching has received the greatest preference in scholarly research and everyday usage (Upreti et al., 2017). According to Pierce-Grove (2016), the literal meaning of the term binge is unlimitedness which truly encapsulates the phenomenon of excessive unlimited viewing.

Streaming video sites are popular amongst all demographics, but literature has indicated that younger audiences, especially teenagers, are keener on binge-watching (A. A. M. Ahmed, 2017; A. Ahmed, 2019; Budzinski et al., 2021; Divya, 2020; Matrix, 2014; Steiner & Xu, 2018). Although binge-watching is a relatively new phenomenon yet it has become so prevalent that there is considerable research about it both globally as well as regionally (Anghelcev et al., 2021; Castro et al., 2019; Fernandes & Pinto, 2020; Halfmann & Reinecke, 2021; Merrill & Rubenking, 2019; Nanda & Banerjee, 2020; Panda & Pandey, 2017;

Pittman & Sheehan, 2015; Rezende & Gomide, 2017; Rubenking et al., 2018). Further, although there is some research about gender differences in binging (Merrill & Rubenking, 2019; Moore, 2015; Starosta & Izydorczyk, 2020), most of it is in the western context, while the Asian angle has not been explored very often, so the present research is aimed at filling this gap. From the very beginning, gender differences have been observed in media use (Nathanson et al., 1997), but with the advent of technology, the younger generation is more inclined towards, the newer mediums available to them. Thus, it becomes pertinent that the usage behavior and patterns of the youth be explored in detail to determine the possible outcomes. The study is therefore aimed at examining not just binge-watching patterns but also observing gender differences concerning the gratifications received and investigating the role of gender concerning the negative impacts of binge-watching.

Background

Although many streaming services provide audiovisual content, they are not all the same; there are some differences between them. The main difference between the platforms pertains to the economic model they adopted. The more common format is the subscription model, which is being tried by Netflix, Amazon Prime, and a multitude of others. On the other hand, YouTube has opted for the traditional advertising model. The two most popular streaming platforms worldwide are Netflix and YouTube (Budzinski et al., 2021).

However, between these two, the most popular medium across the globe is Netflix, so much so that binging on Netflix is referred to as the Netflix effect (Matrix, 2014). It is suggested that this Netflix effect allows users to go on weekend-long binges. The reason Netflix plays such an important role in the binge-watching phenomenon is not only in its structure or current market dominance but also in the affordability and accessibility of this mode of viewing (Jenner, 2019). Netflix was formed in 1997 as a DVD rental by Reed Hastings and Marc Randolph. In 2007, they started streaming services, and by 2013, they were producing original content. By 2021, they were offering content in 190 different countries with 62 languages (Gregory, 2021). The number of worldwide subscribers on Netflix has crossed 203 million, while there are estimated to be around 100 000 subscribers in Pakistan. However, the number of viewers is probably higher as multiple people use each subscription. So far, there is little content of Pakistani origin available on Netflix, but the Pakistani audience has been found to prefer content of Indian origin (Raheel, 2021).

YouTube is not just popular in Pakistan but the world over, as it differs from all other streaming services due to the type of content being offered. YouTube is a social media platform that provides content uploaded by individual users free of charge. Another major difference between YouTube and its competitors pertains to the duration of the content, as YouTube content is usually of shorter duration, although there is now increasingly some serialized content being uploaded (Budzinski et al., 2021). YouTube offers services in 88 countries in 76 languages with more than a billion users. It was launched in 2005 and started taking on in-video advertising from 2007 onwards. The next major evolution was the launching of YouTube TV, a streaming service that allowed major broadcasters and cable networks to show live TV (Vytiaz, 2018).

Other international streaming services, such as Amazon Prime Video, Disney+, and Apple TV+, are not accessible in Pakistan (Raheel, 2021), so they are out of the scope of the study.

THEORETICAL FRAMEWORK

Uses and Gratification Approach

The Uses and Gratification Approach is one of the most significant theories in audience research. It primarily focuses on social and psychographic needs gratified through media content (Katz et al., 1973a). The needs were later divided into five main categories: (1) cognitive needs, which refer to the need for information and knowledge, (2) personal integrative needs, which refer to credibility and status, (3) affective needs, which refer to the need for pleasure and feeling, (4) social integrative needs which refer to the relationships with friends and family, and (5) tension release needs which are about escape and diversion (Katz et al., 1973b). Later, many researchers refined the approach and adapted it for multiple applications, such as Greenberg (1974), who created a set of typologies identifying seven motivations: (1) relaxation, (2)

habit, (3) learning, (4) companionship, (5) passing the time, (6) arousal and (7) escape. In another research, Rubin (1983) differentiated between habitual viewers looking for entertainment and non-habitual viewer looking for information.

In the past five decades, the approach has been applied to most traditional mediums popular amongst audiences. With the emergence of computer-mediated technologies, the potential for applying the Uses and Gratification Approach has greatly increased (Ruggiero, 2000). Now the approach is being used to analyze audience perceptions about new media, social media, mobile phones, and of late, the emerging trend of binge-watching content on video-on-demand platforms such as Netflix, among others.

Matrix (2014) pointed out that these long sessions are not due to the need for social exile but rather the need for connection and participation whereby the users connect with other like-minded people by forming groups and having conversations about their favorite content. This phenomenon, also called FOMO or Fear of Missing Out, compels users to indulge in these long binges (Anghelcev et al., 2022; Matrix, 2014). Also, the so-called Netflix effect has ushered in a mediated culture of instant gratification and infinite entertainment choices.

Concerning the gratifications associated with binge viewing, Anghelcev et al. (2021) suggested that binging is a self-reinforcing behavior because of the development of intrinsic motivations. Various gratifications

are associated with binge-watching, such as Escape (Castro et al., 2019; Fernandes & Pinto, 2020; Halfmann & Reinecke, 2021; Nanda & Banerjee, 2020; Panda & Pandey, 2017; Rubenking et al., 2018), Entertainment (Castro et al., 2019; Fernandes & Pinto, 2020; Halfmann & Reinecke, 2021; Nanda & Banerjee, 2020), Social Interaction (Fernandes & Pinto, 2020; Panda & Pandey, 2017; Rezende & Gomide, 2017; Rubenking et al., 2018), Relaxation, (Castro et al., 2019; Halfmann & Reinecke, 2021; Pittman & Sheehan, 2015), Procrastination (Merrill & Rubenking, 2019; Rubenking et al., 2018) and Curiosity (Fernandes & Pinto, 2020; Rezende & Gomide, 2017; Rubenking et al., 2018). Some of the less frequently mentioned gratifications are Engagement, Hedonism, Aesthetics (Pittman & Sheehan, 2015), Timepass (Nanda & Banerjee, 2020), and Excitement (Rubenking et al., 2018).

LITERATURE REVIEW

Binge-Watching

The newly coined term binge-watching refers to consuming serial narratives with the help of digital technologies; interestingly, it has also become a frequently used verb in a very short period (Pierce-Grove, 2016). It has also been observed that this practice of viewing content over an extended time has become more popular than the previous practice of appointment viewing (Krstić, 2018; Merrill & Rubenking, 2019; Rubenking & Bracken, 2021). Matrix (2014) has referred to binge-watching as an all-you-can-eat-in-one-sitting phenomenon and suggests that the idea is situated in

limitlessness. Binge-watching is not an entirely new phenomenon, but its popularity has recently increased mainly due to the availability and advancement of digital technology (Krstić, 2018; Rezende & Gomide, 2017).

According to Castro et al. (2019), these binge sessions generally last over two hours on average, and often, the viewers watch longer than originally intended. Also, viewers tend to watch additional episodes of the same series or season (Schweidel & Moe, 2016). Binge-watching has become more prevalent with the simultaneous release of all episodes of a TV show which inspire viewers to participate in marathon viewing sessions (Matrix, 2014). Another important aspect of the popularity of this practice is the ability for self-scheduling, which allows the viewers to binge-watch any preferred selected content, thereby generating a more immersive experience for themselves (Jenner, 2019).

The advent of new digital technologies has allowed for a situation whereby viewers can watch any program of their choice at any time. However, some patterns have emerged, such as the fact that the preferred medium for viewing content is smartphones, laptops, or tablets (A. A. M. Ahmed, 2017; A. Ahmed, 2019; Fernandes & Pinto, 2020; Trouleau, 2016) but the digitization of the traditional television set has allowed for the prevalence of binging on the living room TV (Rubenking & Bracken, 2021). It has also been found that viewers binge-watch content mostly in their bedrooms or living room (Castro et al., 2019).

It has been observed that younger individuals, especially between the ages of 15 and 30, tend to opt for binge-watching more often than older individuals (A. A. M. Ahmed, 2017; A. Ahmed, 2019; Budzinski et al., 2021; Divya, 2020; Matrix, 2014; Steiner & Xu, 2018). Also, as this age group mostly comprises college and university students, it was also observed that binge-viewing is part of their weekly routine (Dandamudi & Sathiyaseelan, 2018; Fernandes & Pinto, 2020).

There is contrary information regarding the influence of gender on the practice of binge viewing. For example, some researchers (Merrill & Rubenking, 2019; Starosta & Izydorczyk, 2020) believe that gender plays a significant role in making female viewers binge-watch more often. On the other hand, some other research (A. A. M. Ahmed, 2017; Moore, 2015) has indicated that binge-watching is a gender-neutral phenomenon, and the differences between men and women only manifest themselves in their TV show preferences. Also, these VOD platforms use data analysis to identify and reproduce content preferences based on reductive assumptions about gender (Horeck et al., 2018).

Impact of Binge-Watching

It has been found that binge-watching can negatively and positively affect viewers (Granow et al., 2018). The main advantage of binge-watching is the opportunities it provides for entertainment, especially through a perception of autonomy (De Keere et al., 2020; Granow et al., 2018;

Halfmann & Reinecke, 2021). It has also been observed that binge-watching helps in reducing the levels of anxiety while at the same time increasing the feeling of relaxation among the viewers (Cabral et al., 2020; Panda & Pandey, 2017). Other gratifications from the activity include social influence and escape from reality (Halfmann & Reinecke, 2021; Panda & Pandey, 2017).

It has also been found that binge-watching can also have some detrimental influences on the viewers, such as depression (A. A. M. Ahmed, 2017; Raza et al., 2021; Rosen et al., 2012; Sun & Chang, 2021), anxiety (Raza et al., 2021; Rosen et al., 2012), stress (Peper & Harvey, 2018), obesity and cardiac problems (Dandamudi & Sathiyaseelan, 2018; Divya, 2020; Karim et al., 2020; Kroese et al., 2016), reduced abilities for social interaction (Dandamudi & Sathiyaseelan, 2018; Divya, 2020; Kroese et al., 2016; Sun & Chang, 2021), loneliness (Sun & Chang, 2021; Wagner, 2016) dependence and even addiction on media stimulation (Divya, 2020; Flayelle et al., 2019), decrease in productivity (Anghelcev et al., 2022; Dandamudi & Sathiyaseelan, 2018; Kroese et al., 2016) loss of sleep (Anghelcev et al., 2022; Karim et al., 2020; Kroese et al., 2016; Raza et al., 2021) obsessive-compulsive disorder (Rosen et al., 2012). Another major drawback of binging is the risk of goal conflict, resulting in the viewers feeling guilt and shame for having missed their time (Granow et al., 2018; Riddle et al., 2017).

Halder et al. (2021) observed that viewers binge more often to forget the stress in their everyday lives, and they did find correlations between binging and depression though they could not establish whether depressed people tend to binge-watch more or that binge-watching leads to depression. However, there is some other research suggesting the complete opposite. For example, A. A. M. Ahmed (2017) found no correlation between binge TV watching and loneliness. In a later study, A. Ahmed (2019) observed that binge-watching does not create problems. However, the presence of pre-existing psychological or sociological disorders leads to increased feelings of loneliness. Erickson et al. (2019) found that binge-watching strengthened social interaction by allowing greater opportunities for engagement with other viewers. It is also linked to the Fear of Missing Out (FOMO), whereby binge-watchers were mostly the opinion leaders in their social circles with higher levels of social engagement (Anghelcev et al., 2022). Similarly, Castro et al. (2019) found that binge-watching did not increase the feelings of guilt in the audience. Flayelle et al. (2019) believe that not all binging sessions can be problematic as it varies from person to person, and the current narratives about binge-watching have led to their over-pathologization and misconceptions being created, which is not a true picture of reality. Concerning addiction, Ort et al. (2020) found no indication that the practice of binge-watching was addictive.

Based on the literature, the following research questions are proposed:

RQ1: Is there a significant difference between males and females with regard to the gratification received from binge-watching?

RQ2: Is there a significant difference between males and females with regard to the negative impacts of binge-watching?

METHODOLOGY

Literature suggested that the preferred method to conduct audience research on binge-watching was the quantitative survey method (Anghelcev et al., 2021; Rubenking & Bracken, 2021; Sun & Chang, 2021). The survey instrument developed for the study comprised 28 close-ended questions, out of which the first four pertained to demographic characteristics. The gratifications from binge-watching comprised seven indicators: Escape, Entertainment, Social Interaction, Fear of Missing Out (FOMO), Relaxation, Timepass, and Excitement. These indicators were measured via 15 questions that had Likert-based response categories. The indicators for the negative impacts of binge-watching were Depression, Obesity, Productivity Issues, and Sleep Disorder, which were measured via nine questions also with Likert-based response categories. The survey instrument was first pretested on a sample comprising 30 respondents who were not made a part of the final analysis. The reliability test revealed that the final draft of the instrument had a Cronbach's Alpha of .797.

Many researchers (A. A. M. Ahmed, 2017; A. Ahmed, 2019; Divya, 2020; Matrix, 2014) have observed that younger individuals binge-watch more often than older individuals. Further, specifically, teenagers between the ages of 13 and 19 are the greatest binge watchers (Matrix, 2014; Steiner & Xu, 2018); therefore, the present research focused specifically on teenagers. The sample was purposively selected from two leading secondary and higher secondary academic institutions based in Pakistan's capital, Islamabad. The survey was administered to 150 male and 150 female binge viewers. The data were entered into the SPSS program, and relevant tests were applied.

FINDINGS

The respondents ranged in age from 13 to 19 while most respondents fell in the age group 15–16 (36.7%), 36% were in the age group of 17–18 years, 16.4% were in the age group of 13–14% while 11% were in the age group of 19 years (See Table 1).

The survey respondents were first asked which device was used more often for binge viewing. Findings (Table 2) indicated that

Table 1
Demographic details of the sample

	Males 150 (50%)	Females 150 (50%)	Total 300 (100%)
13–14 years	23 (7.7%)	26 (8.7 %)	49 (16.4%)
15–16 years	59 (19.7%)	51 (17%)	110 (36.7%)
17–18 years	53 (17.7%)	55 (18.3%)	108 (36%)
19 years	15 (5%)	18 (6%)	33 (11%)

male and female teenagers preferred laptops for bingeing sessions, followed by tablets, smartphones, and TV screens.

The respondents were also asked how long their binging sessions lasted and where they preferred to conduct their binging sessions. Findings (Table 3) revealed that an average binging session lasted for 8–10 hours (60%), followed by 5–7 hours (20.6%), 2–4 hours (18%), while very rarely the session could last for more than 10 hours (1.3%). There was no particular difference between the viewing duration of males and females.

RQ1: Is There a Significant Difference Between Males and Females with Regard to the Gratification Received from Binge-Watching?

The first research question pertained to the gratifications being received by the viewers from binging sessions. First, the instrument questions catering to each indicator were computed to form the variables: Entertainment, Escape, Social Interaction, Fear of Missing Out (FOMO), Relaxation, Timepass, and Excitement.

Findings (Table 4) showed that the most important gratifications being received by the respondents were Entertainment (M= 3.95, SD=0.76), Relaxation (M= 3.83, SD=0.626), Time Pass (M= 3.56, SD=0.89), Escape (M= 3.55, SD=0.958), Excitement

Table 4
Descriptive statistics of computed variables

	M	SD
Entertainment	3.95	0.76
Escape	3.55	0.96
Excitement	3.48	1.62
FOMO	3.20	0.80
Relaxation	3.83	0.63
Social Interaction	3.36	0.78
Timepass	3.56	0.89

Table 2
Preferred devices for binge-watching

	Males 150 (50%)	Females 150 (50%)	Total 300 (100%)
Laptop	58 (19.4%)	54 (18%)	112 (37.3%)
Tablet	54 (18%)	52 (17.4%)	106 (35.3%)
Smartphones	24 (8%)	26 (8.6%)	50 (16.6%)
TV Screen	14 (4.6%)	18 (6%)	32 (10.6)

Table 3
Average binging duration

	Males 150 (50%)	Females 150 (50%)	Total 300 (100%)
2–4 hours	26 (8.7%)	28 (9.3%)	54 (18%)
5–7 hours	32 (10.6%)	30 (10%)	62 (20.6%)
8–10 hours	90 (30%)	90 (30%)	180 (60%)
More than 10 hours	2 (0.6%)	2 (0.6%)	4 (1.3%)

(M= 3.48, SD=1.62), Social Interaction (M= 3.36, SD=0.78) and Fear of Missing Out (M= 3.20, SD=0.80).

However, the main part of the research on gender differences regarding these variables, the independent sample T-tests (Table 5), was applied, showing significant differences only in a few gratifications. Regarding Fear of Missing Out, it was revealed (t (294) = -5.024, p= .000) that there were significant differences between males (M=2.94, SD= .85) and females (M=3.46, SD=0.73) such that females were more likely to be concerned about FOMO than males. Another indicator in which differences were observed was that of Social Interaction (t (188.4) = -5.3.918, p= .000); in this regard, it was found that females (M=3.55, SD= .86) were more like to be concerned about it in comparison to males (M=3.16, SD= .69). Another indicator where differences were revealed was that

of Excitement (t (299) = 3.22, p= .02); however, in this case, males (M=3.65, SD= 1.42) were more concerned in comparison to females (M=3.31, SD= 1.82). No differences between males and females could be found regarding Entertainment, Escape, Relaxation, and Time Pass.

RQ2: Is There a Significant Difference Between Males and Females with Regard to the Negative Impacts of Binge-Watching?

The second research question pertained to the differences in the negative impacts of binging on teenage male and female viewers.

First, the instrument questions catering to each of the indicators were computed to form the variables (Table 6) Sleep Disorder (M= 3.01, SD=1.1), Obesity (M= 2.76, SD=1.01), Depression (M= 2.65, SD=0.90), Productivity Issues (M= 2.56, SD=1.04).

Table 5
Gender differences in gratification from binge

		n	Mean	SD	T	Df	Sig
Entertainment	Males	150	3.94	.71	-.191	296.5	.849
	Females	150	3.96	.82			
Escape	Males	150	3.28	1.00	-1.404	298.4	.161
	Females	150	3.46	.92			
Excitement	Males	150	3.65	1.42	3.221	299	.024
	Females	150	3.31	1.82			
FOMO	Males	150	2.94	.85	-5.024	294	.000
	Females	150	3.46	.73			
Relaxation	Males	150	3.83	.69	-.066	297	.947
	Females	150	3.84	.56			
Social Interaction	Males	150	3.17	.69	-3.918	188.4	.000
	Females	150	3.56	.86			
Timepass	Males	150	3.59	1.04	-1.849	299.2	.068
	Females	150	3.54	.75			

Table 6
Descriptive statistics of computed variables

	M	SD
Sleep Disorder	3.01	1.1
Obesity	2.76	1.01
Depression	2.65	0.90
Productivity Issues	2.56	1.04

However, the main part of the research is on gender differences in the impact of binging-watching. Literature had particularly indicated the prevalence of four negative outcomes: (1) Depression, (2) Obesity, (3) Productivity Issues, and (4) Sleep Disorder. Therefore, independent sample T-tests (Table 7) were applied, showing significant differences between males and females in productivity and sleep disorder. Findings (t (270.5) = 2.058, p= .041) showed that there were significant differences between males (M=2.69, SD= 1.18) and females (M=2.44, SD= .90) on Productivity such that males believed their work output is more negatively influenced in comparison to females. Another difference was found in Sleep Disorder (t (294) = 2.771, p= .036) such that females (M=3.2, SD= 1.17) reported more sleep-related

issues than males (M=2.81, SD= .94). However, no differences could be observed on depression and obesity.

DISCUSSION

The research aimed to explore whether there are gender differences in the gratifications received from binge-watching as well as its negative impacts. In recent times, binge-watching has become a popular trend worldwide, especially with the advent of the Covid-19 pandemic (Raza et al., 2021). The research focused primarily on youth, as previous literature had suggested that teenagers are particularly prone to binge-watching (Matrix, 2014; Steiner & Xu, 2018).

The study's findings revealed that Entertainment, Escape, and Excitement are the primary motivations of Pakistani teenagers to resort to binge-watching. Previous literature has suggested that Entertainment (Castro et al., 2019; De Keere et al., 2020; Fernandes & Pinto, 2020; Granow et al., 2018; Halfmann & Reinecke, 2021; Nanda & Banerjee, 2020) and Escape (Castro et al., 2019; Fernandes

Table 7
Gender differences in negative impacts of binge-watching

		N	Mean	SD	T	Df	Sig
Depression	Males	150	2.60	.75	.948	261.5	.344
	Females	150	2.70	1.05			
Obesity	Males	150	2.78	1.14	.191	294.38	.849
	Females	150	2.75	.83			
Productivity Issues	Males	150	2.70	1.19	2.058	270.5	.041
	Females	150	2.44	.90			
Sleep Disorder	Males	150	2.82	.94	2.771	294	.0368
	Females	150	3.20	1.17			

& Pinto, 2020; Halfmann & Reinecke, 2021; Nanda & Banerjee, 2020; Panda & Pandey, 2017; Rubenking et al., 2018) are very important for indulging in binging, a phenomenon which was reinforced by the findings of the present research. Although excitement did not emerge as a major variable in previous literature, as only Rubenking et al. (2018) had discussed it, the present research findings showed that it was an important motivation for the youth. It was also revealed that Fear of Missing Out (FOMO), Relaxation, Timepass, and Social Interaction were relatively less important motivations though previous literature had suggested otherwise.

The phenomenon of binge-watching streamed video content differs from the usage patterns of traditional mass media outlets in many respects. Katz et al. (1973a) identified five categories of needs that mass media outlets fulfill: (1) cognitive, (2) personal integrative, (3) affective, (4) social integrative, and (5) tension release, but in the case of binge-watching, only the last three: affective, social integrative and tension release, play a role. The framework of uses and gratification is continuously evolving with the advent of each new technology as well as the nature of the audience. Motivations such as Fear of Missing Out (FOMO) have only recently been added (Anghelcev et al., 2022; Matrix, 2014), but they have become important gratifications being received by the audience.

However, the main objective of the research was to explore whether there were any differences between males and females

regarding the motivations for binging. Although there were no differences in the binging patterns between males and females, the motivations for binging were not the same. Literature (Anghelcev et al., 2022; Matrix, 2014) suggested that Fear of Missing Out (FOMO) is a major motivation, but the study's findings revealed that it is a more important motivation for females in comparison to males. Previous literature (Fernandes & Pinto, 2020; Panda & Pandey, 2017; Rezende & Gomide, 2017; Rubenking et al., 2018) had suggested that the need for social interaction is very important though no gender differences were reported; the present study showed that females are more likely to be influenced by this motivation than males. Another indicator where differences were revealed was that of Excitement. However, in this case, males were more concerned than females, which goes on to show that the primary motivations of the genders differ significantly. No differences between males and females could be found regarding entertainment, escape, relaxation, and timepass.

Although previous studies had pointed out multiple drawbacks of binge-watching, such as depression, anxiety, stress, obesity, reduced social interaction, loneliness, decrease in productivity, loss of sleep, and obsessive-compulsive disorder, among others, the research focused on only four primary issues as there were some overlapping between the different constructs. The four variables chosen for the present research were Sleep Disorder, Obesity, Depression, and Productivity

Issues. Findings revealed that Sleep Disorder and Obesity were reported to be more of an issue than depression and productivity issues. Considerable literature has suggested that Depression (A. A. M. Ahmed, 2017; Raza et al., 2021; Rosen et al., 2012; Sun & Chang, 2021) and a decrease in Productivity (Anghelcev et al., 2022; Dandamudi & Sathiyaseelan, 2018; Kroese et al., 2016) are serious negative outcomes of binge-watching but the findings of the present research did not corroborate this. On the other hand, findings concerning Obesity (Dandamudi & Sathiyaseelan, 2018; Divya, 2020; Karim et al., 2020; Kroese et al., 2016) and sleep-related problems (Anghelcev et al., 2022; Karim et al., 2020; Kroese et al., 2016; Raza et al., 2021) were supported by the findings of the research.

Keeping in view the main objectives of the study, when differences were explored, it was revealed that there were significant differences between males and females in productivity, such that males believed their work output was more negatively influenced than females. Another difference was found in Sleep Disorder; females reported more sleep-related issues than males. However, no differences could be observed regarding Depression and Obesity.

CONCLUSION

Binge-watching is an emerging phenomenon of modern digital society, which needs to be investigated deeply to determine its impact on society. Most users of streamed content are the youth, who are vulnerable to a larger extent compared to the older generations.

The present study thus focused on the youth alone to find out how they used these streaming sites and how they influenced them. Findings based on the responses of 300 male and female teenagers revealed that Entertainment, Escape, and Excitement was the primary gratifications for binge-watching. However, it was found that Fear of Missing Out (FOMO) and Social Interaction were more important for females, while Excitement was deemed an important motivation by the males. The research also aimed to examine the negative outcomes of binge-watching, such as Sleep Disorders, Obesity, Depression, and Productivity related problems. Findings revealed that Sleep Disorder and Obesity were reported to be more of an issue than depression and productivity issues. However, regarding gender differences, it was found that male binge-watchers reported a reduction in their productivity while female binge-watchers reported a disturbance in their sleeping patterns, thus showing that binge-watching has different types of impacts on males and females.

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A Teacher-Lecturer Virtual Collaborative Lesson Study for Teaching Social Sciences in a Libyan Junior High School: An Experimental Study

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ABSTRACT

In Libya, social sciences teachers at Junior High Schools are known for their unattractive, traditional, text-based teachings. As a result, their students' grasps of social sciences tend to be lower. This research using experimental research aims at evaluating and analyzing a teacher-lecturer collaboration on the Lesson Study approach to enhance the quality of teaching social sciences to JHS students in Libya. The students experiment Al-Bernawi Libyan JHS as subjects with a pre-and-post-test design in a quantitative method, where one-way ANOVA tests compare the reflections of Lesson Study variations on three groups of students: Group A (Lesson Study involving only teachers), Group B (Lesson Study involving only lecturers), and Group C (Lesson Study involving a collaboration of teachers-lecturers). The findings reveal that (1) Once Lesson Study is introduced into the teaching process in any of the Groups, the students' learning system eventually improves their accomplishment, (2) In Al-Bernawi School Libya, the collaboration between teachers and lecturers (Group C) has been the most effective in the students' learning as compared to the other variations (Group A and B). The one-way ANOVA test above shows that the lesson study approaches are efficient with teachers and lecturers (F = 78.14; p = 0.00 0.01). The Post Hoc test findings revealed that the combined

approach of teachers and lecturers was more successful than the combined technique of teachers and lecturers alone (MD = -8.28; p> 0.05).

Keywords: Junior high school, learning, lesson study, planning, social sciences learning

INTRODUCTION

In any country, education relies on the country's circumstances and is improved along with its social, monetary, and political conditions, i.e., its dependability and stability. The changing political conditions have given the Libyan Government chance to adopt and give importance to educational programs and the goals sought from education (Libya Ministry of Education, 2012; Tamtam et al., 2011). Libyan education system involves the basic, 9-year school program, which is mandatory and free of charge. The program incorporates Arabic/Islamic Languages, Jamahiriya/Social Sciences, Mathematics, Natural Sciences, History, Geography, Arts, Music, and Technical and Physical Education.

Students in basic education often, meanwhile, perceive social sciences as useless and uninteresting subjects. On some points, social sciences learning has become unattractive owing to the teachers themselves. There have been field problems where social sciences teachers have not come from social sciences education backgrounds but from only one of the scientific fields contained in social sciences, be it History, Geography, Sociology, or Economics, while the teachers' tasks cover

all the fields. It is probably based on the general assumption that Social Science is a subject that one can teach without previously receiving special education on how to carry out social sciences teaching (Copriady, 2013; Setyawan et al., 2019). In addition, there have been results on social sciences teachers' general attitude that they have heavily relied on books and traditional methods in their educational institutions. This finding is consistent with the results of several other studies (Abukhattala, 2016; Drent & Meelissen, 2008), despite being contrary to some others (Nneji, 2014; Sarfo & Ansong-Gyimah, 2010).

In basic education, students ideally learn social science within integrations of Eco pedagogy and eco-cultural literacy. However, these concepts have still been difficult to achieve if they have not progressed slowly. Teachers are accustomed to applying the old teaching style (Wasino et al., 2020; Riyani et al., 2021). Social facts are different from the world of ideas that normally become the objects of philosophical research. They cannot be studied and understood only by speculative thinking and pure mental activities, but they must be supported by empirical research.

According to van Werven et al. (2021), basic schoolteachers now face the demands to complete the necessary competencies to perform a wide range of tasks appropriately to prepare their students for the global framework. As a result, experienced teachers and educators are looking to Global Citizenship Education (GCE) and related global teaching competencies in

the latest literature in various national and international contexts. Results have shown that the broad profile of core competencies, facilitation and curriculum development, and the definitions in Global Citizenship Education (GCE) are the best fit for the morality and description of a global citizenship culture.

For effective learning management, personal factors, e.g., professional commitment, have become important traits (Khan, 2012). Research has developed ways to boost professionalism in teachers through training sessions to improve their students' learning qualities, one of which is *Lesson Study*. Originating in Japan, Lesson Study is an approach to support the sustainable professional development of teachers (Leavy & Hourigan, 2016) by collaborating with educators to immerse in repeated evaluations and planning of teaching strategies to improve student's learning qualities. Learning classes, therefore, become the models for teachers' professional development through collaborative and sustainable learning, guided by the principles of collaboration and mutual learning, to help build learning communities.

Media use in learning will assist students in receiving learning messages; as Gafur (2012) stated, learning media serves to overcome communication problems that arise in learning. In addition, the media can arouse students' curiosity; stimulate performance physically and emotionally. Moreover, if the media is varied, the learning atmosphere becomes more lively, enjoyable, and not boring. According to Tafonao et al.

(2020), if the teacher uses a variety of media, it will require adjustment of the student's senses, increasing students' attention, motivating them to learn, encouraging thinking, improving learning abilities, and then increasing student learning outcomes. Using variation is defined as the teacher's actions in the learning process to overcome student boredom so that students always depend on perseverance and enthusiasm and play an active role (Musonef et al., 2020).

One other alternative that can be achieved through the development of learning models that match the characteristics of the citizens continuously is considered a strategy in an effort to increase motivation and learning outcomes of learning residents, namely through collaborative learning models. The development of this model is expected to be useful to implement in the learning that is carried out and will have an impact on increasing the enthusiasm for learning, so of course, it will also impact the learning outcomes of learning residents continue to increase. The development of collaborative learning models can empower learning citizens to increase their enthusiasm and learning outcomes, not as objects but as subjects. However, what happens in the field, according to the results of observations made by researchers, generally tutors still use conventional learning models. It means that most tutors still use the lecture method, which includes material, without sufficient time for 24 students to reflect on the materials presented, tutor-centered learning, less interaction among learning residents, and no groups to work together. The learning

outcomes of learning residents are in accordance with the document study; the average score is in to lower middle. So that conditions like this become an opportunity to be able to develop a collaborative learning model. With collaborative learning, a learning activity can be established where learning residents are involved in teamwork and support each other in small groups to achieve a goal, namely, improving learning outcomes together (Hossain et al., 2012).

According to Dillenbourg (1999), collaborative learning is when two or more people learn or try to learn something together. Collaborative learning demands positive interdependence, mutually supportive interactions between students, individual and group responsibility, team skill development, and group activities (Barkley, 2012). Therefore, collaborative learning makes learning more meaningful, encourages students to be responsible for learning, becomes more creative, and ultimately can improve cognitive learning outcomes as expected. Hari Srivinas stated that collaborative learning can achieve high learning outcomes for both teachers and students and is relevant to the development of values of caring, hard work, discipline, honesty, and openness, which are targets in learning (Mofield, 2019). There are many techniques or methods used by teachers in implementing collaborative learning (Barkley, 2012). Of the many learning techniques that have been implemented in learning, in summary, collaborative learning techniques are classified into five types: (1) discussion, (2) reciprocal

learning by friends, (3) problems, (4) managing graphic information, and (5) writing.

In relation to social sciences, especially for junior high school students, researchers have successfully adopted collaborative efforts of teachers and lecturers to deal with teachers' gaps to boost students' learning qualities. However, another gap is that in practice, some junior high school students still do not meet the criteria to make the optimal learning process by the teachers because of other problems, such as the collaborative methods cannot meet their intention to learn. Also, the differences in results from previous studies make this analysis more interesting. However, since the implementation is very time-consuming for teachers and lecturers, no scientific study has been conducted in Libya to determine how the process is carried out in a Libyan JHS and to what extent it is effective for the students. Therefore, our research aims to evaluate and analyze a virtual collaboration between Libyan teachers and Indonesian lecturers in a Lesson Study to enhance the quality of teaching social sciences to JHS students in Libya. An experiment is done using the students at Al-Bernawi Libyan JHS as subjects with a pre-and-post-test design in a quantitative method, where one-way ANOVA tests compare the reflections of Lesson Study variations on three group of students: Group A (Lesson Study involving only teachers), Group B (Lesson Study involving only lecturers), and Group C (Lesson Study involving a collaboration of teachers-lecturers).

LITERATURE REVIEW

Learning is essentially a process of regulating and organizing the environment around students so that it can grow and encourage students to carry out the learning process. Learning is also said to provide guidance or assistance to students in the learning process. According to Pane and Dasopang (2017), learning is a complex aspect of activity and cannot be fully explained. In simple terms, learning can be interpreted as a product of continuous interaction between development and life experience. In essence, learning in a complex sense is a conscious effort from a teacher to teach his students (directing students' interactions with other learning resources) with the aim that the goals can be achieved. Learning can also be said to be a system because learning is an activity with a goal: providing students with knowledge. Learning is a process of delivering information through interaction between teachers to students. It is also a planned guidance process that conditions or creates students so that they can learn well. Learning activities can be characterized by educational interactions, namely teachers to students or students to teachers pedagogically. In addition, teachers must also generate enthusiasm in an innovative manner that is able to arouse students to carry out learning activities.

Lesson study is a model for fostering the teaching profession through collaborative and sustainable learning studies based on collegiality and mutual learning principles to build a learning community. In addition, Stigler and Hiebert (1999) said that Lesson study is a collaborative process in a group of teachers when identifying learning problems, designing a learning scenario (which includes activities to find books and articles on the topic to be taught), teaching students according to scenarios (one teacher carries out learning while the other observes), evaluates and revises learning scenarios, re-learns revised learning scenarios, re-evaluates learning and shares the results with other teachers (disseminates). Lesson study, which is the development of teacher professional competence, certainly has advantages that distinguish lesson study from other ways of developing teacher professional competence. Rusman (2010) said that "The virtue of lesson study is that it can improve skills or abilities in carrying out learning activities carried out by teachers through lesson study activities, namely learning from a lesson" (p. 229). Lesson study, which is a collaborative work between teachers, is expected to make a major contribution to improving the quality of education, in this case, improving the professional quality of teachers. Thus, the benefits of implementing the lesson study can be used as a reference in increasing teacher professionalism.

Designed as a coaching activity for teachers, Lesson Study consists of four subsequential, connecting stages: making preparation (plan), implementation (do), reflection (check or see), and follow-up (act). In the 'plan' stage, teachers work together to design the best tools and strategies used in a certain learning context, of which the main idea is to create student-centered,

active participation. The second stage, or the 'do' stage, is when teachers implement this design in real class settings. In this stage, they have their colleagues observe and record certain points in the class while the students are in active learning processes. In the 'reflection' stage, these records are then analyzed, evaluated, and discussed in relation to the student's learning processes and results to project developmental ideas for future follow-ups in the 'act' stage. The learning models can be situational, small group discussion, cooperative learning, project-based learning or simulation, discovery learning, self-directed learning, and problem-based learning (Murata, 2010; Rahardjo, 2012).

Cerbin and Kopp (2006) have made a description of a complete Lesson Study in a college lecturing setting consisting of 6 stages as follows:

1. Formatting Team: A team is set up consisting of 3 to 6 participants, involving instructors and other competent people, all bearing similar interests to the lesson.
2. Developing Student Learning Goals: The team discusses what ideas to generate from the Lesson Study.
3. Planning the Research Lesson: The lecturers make learning designs to achieve the specified learning goals and anticipate students' responses in the classroom.
4. Gathering Evidence of Student Learning: One of the lecturers implements the plan (becomes a model teacher) in a real class setting, while others make observations and record evidence of students' learnings (becomes observing lecturers).
5. Analyzing Learning Evidence: The team discusses observations and evidence and evaluates student progress toward learning goals.
6. Repeating the Process: The team revises necessary aspects of the lecturing, repeats the stages from stage 2 to stage 5 above, and then shares their findings.

In addition, the teaching-learning activities in the classroom should not be disturbed by the large number of observers involved in the Lesson Study. The classroom process takes place and appears as is, and therefore is not made up in spite of being observed. The process needs to appear and be perceived as naturally as possible by the teacher and students to allow observers to completely capture all aspects of learning and use them unambiguously in the reflection process (Yoshida & Fernandez, 2012).

Perry et al. (2009) described lesson study as a strategy of professional development based on "learning through practice". Teachers design long-term learning and development objectives and collaborate on "learning research" to attain learning goals, monitor, document, and discuss student reactions to learning, and assess and enhance the learning strategies throughout the lesson study.

Nevertheless, Lesson Study has become practical means for both the teacher and

the observers in mining competence. In the reflection stage, the teachers will get valuable inputs from observers about the conducted teachings and develop throughout students' learning processes. At the same time, the observers, including teachers and invited visitors, also profited directly from gaining a serving model for future cases. Even in the case where the teacher performs poorly in creating classroom interactions, problems will continuously be coped with until reaching difference, more participatory learning methods and strategies are finally seized. Lesson Studies may also be used to integrate new learning innovations that keep changing and developing (Fernandez, 2010; Hernández et al., 2017).

For social science, the teaching and learning methods are similar to those used in other subjects: help students acquire the skills they need; teach scientific, vocational, social, and cultural skills rather than rote memorization; and project, problem-solving, and scientific survey methods in teaching. Methodical variation impacts both genders in Libya (Tamtam et al., 2011). Essentially, teachers work with many students using the classical teaching method, but online courses can be more beneficial for certain students, e.g., with their time flexibility. Virtual courses can be useful for students whose schools do not provide certain subjects, for example, statistics studies (Imleesh et al., 2020).

The result from one of the largest universities in Libya on teachers' general attitude towards social sciences showed that they had been heavily relying on books

and traditional methods in their educational institutions. This finding is consistent with the results of several other studies (Abukhattala, 2016; Drent & Meelissen, 2008), despite being contrary to some others (Nneji, 2014; Sarfo & Ansong-Gyimah, 2010). Humans have cognitive, emotional, and psychomotor domains of skills that represent the full dimensions of the Attitude Scale. Teachers should recognize that these cannot be fully developed depending on textbooks. With computerized and technological advances in education nowadays, e.g., using a web-based project model, students now have bigger chances to grasp the full potential of the things they learn at school and to harness them in their communities in their daily lives practically.

In this case, lesson study can be the means for Libyan teachers to adjust to these students' learning needs. Teaching can be so developed that students are encouraged to learn actively, creatively, effectively, and in fun ways through hands-on and minds-on activities, daily life, and local materials. The development using Lesson Study in classroom learning practice by some Indonesian universities has great potential to use as a leadership model to enhance the professionalism of Libyan teachers, as it has been proven effective in the Indonesian case.

METHODOLOGY

In this research, quasi-experiment is used as the main method. According to Creswell (2014), experiments are the best quantitative design for determining plausible cause-and-effect relationships. He emphasized a

quasi-experiment method which involves taking a group of participants as is rather than randomly grouping them. Experimental research includes methods to find the effects of treatment variations on certain elements in a controlled environment (Sugiyono, 2013). It is congruent with the research's goal to investigate three independent factors (lesson study approaches involving only teachers, only lecturers, and a combination of teacher-lecturer for social sciences learning) on the dependent variable (lack of knowledge of social sciences).

The sources used in this study are primary data obtained from the results of questionnaires distributed directly to respondents. The reason for using primary data sources in this study is to obtain an objective picture of Collaborative Learning Virtual Lesson Study Social Studies Learning at Al-Bernawi Junior High School in Libya.

The data analysis technique was carried out after the data was collected using the applied method. Data analysis is a very important part of research activities because, at this stage, research conclusions will be obtained. After the data is collected, the next step is to organize and analyze the data to achieve the research objectives that have been formulated. In this study, researchers used quantitative data analysis techniques, namely data that can be realized by numbers obtained from the field. Quantitative data were analyzed by researchers using statistics. The analysis used is a two-way ANOVA analysis, named after and before using the SPSS 25.0 for windows programs.

The ANOVA test is used to analyze the relationship between one or more variable factors and covariates with two or more dependent variables.

In the analysis, the experiment is designed with pre-and-post-tests to compare students' achievements before and after Lesson Study among the groups. The results are then analyzed quantitatively using a one-way ANOVA program. The research procedure of this study adopted a case study suggested by Yoshida (1999). Its implementation has significantly impacted teachers and the quality of education, and this concept has been adopted in other countries to improve the quality of teachers and education.

Classes Sampling

Each of the three classes (Group A, B, and C) was randomly picked from Al-Bernawi JHS. A different teacher was assigned for each class, with different variations. Group A was handled by only a teacher, Group B by a lecturer, and Group C by a teacher-lecturer combination. Each group received interventions of Lesson Study and was given pre-and post-tests, of which results were then compared to examine to what extent the variations would give results to students' achievements.

The Running of Lesson Study

Our experiment began with taking data on the last social science exam results of the three randomly picked classes as starting values (pretests), which were later compared with the tests after Lesson

Study interventions (post-tests). In our experiment, the lesson study consists of 4 stages described in Table 1.

Stage 1, designing lesson plans and observational measurement tools, is done virtually between the Indonesian lecturers and the Libyan teachers through video conferences. The design covers five strategic actions considering the aspects to be achieved.

In stage 2, teaching & observation, the class teacher (a teacher in class A, a lecturer in class B, and a combination in class C) performs teaching activities and is observed (by teachers (class A), lecturers (class B),

and a combination of teachers-lecturers (class C). Teachers and observers in all groups play roles and use tools according to the lesson plans. Teachers attempt as much as possible to achieve lesson plans' targets and goals. In relevance, observers measure to what extent teachers have succeeded in achieving these targets and goals and find possible causes for failure.

In stage 3, the reflection on teaching and revision of lesson plan, the teacher and observers of each group gathered to engage in a discussion to review instructional materials, develop teaching methods, explore ideas to improve thinking, and

Table 1
Four stages of the lesson study program

Stage	Lesson Study Program	Actions
One	Designing lesson plans and observational measurement tools through video conferences of Libyan Teachers and Indonesian Lecturers	1) Think of a long-term goal, fostering a spirit of learning and appreciation for one another. 2) Consider the targets of each subject, section, or instructional material. 3) Design the classroom instructions in relation to the targets and long-term goals. 4) Set necessary tools for student responses, including learning, intervention, and interaction with one another. 5) Set necessary tools for observation to measure teaching-learning achievement and failure.
Two	Teaching & Observation	The lesson plans are then carried out in the three groups (classes) at school (real-time). Group A: A teacher teaches while observed by teachers; Group B: A lecturer teaches (virtually) while observed by lecturers (virtually); Group C: A combination of teacher-virtual lecturer teaches while observed by teachers and lecturers. Both teachers and observers in all groups play roles and use tools according to the lesson plans.
Three	Reflection on teaching and revision of lesson plan	Engage in a discussion to review instructional materials, develops teaching methods, explore ideas to improve thinking, and help teachers find solutions to problems, understand topics, and expand their understanding, skills, and abilities.
Four	Making and Testing revised Lesson plans	Each group's teacher and observers make new session plans and implement them into teachings. After the teachings, each group of subjects (students) will have post-tests. The pre-and-post tests are then analyzed using a one-way ANOVA statistical program to find out which Lesson Study combination provides the best result.

help find solutions to problems, understand topics, and expand their understanding, skills, and abilities. Again, it was the moment where the observers' findings were being collided with the teachers' experiences. In this stage, it is important to separate the subjective findings and experiences from the objective. It is fairly understood that those teachers might have had teaching experiences for years, but what is outlined in this stage is how far they have met the targets and goals in lesson plans objectively. It is also possible for them to think of ideas they missed out on when making the first lesson plans in relation to targets and goals.

Stage 4 is based on the discussion findings in stage 3. In this stage, each group's teacher and observers make new session plans and implement them into teachings. After the teachings, each group of subjects (students) will have post-tests. The pre-and-post tests are then analyzed using a one-way ANOVA statistical program to determine which Lesson Study combination provides the best result.

RESULTS AND DISCUSSION

Pre- and post-tests data were calculated to find mean, standard deviation, and t-values

for each test for each group are presented in Table 2. Based on Table 2, it can be seen that the post-test scores calculation of Group A (Lesson Study with only social sciences teachers) results in M=91.43, SD=3.56, and T= -10.38, with p = 0,05. Post-test scores calculation of Group B (Lesson Study with only social sciences lecturers) results in M = 92.71, SD = 4.53, T = -31.59, with p = 0.05. Meanwhile, the post-test scores calculation of Group C (Lesson Study with the combination of teachers-lecturers) was substantially higher than those of the other two Groups (lesson study for social sciences with a combination of instructors and lecturers), with M = 93.71, SD = 4.37, T = -33.22, p = 0.05. This data also supports the hypothesis that the combined approach is more successful than the techniques in groups A and B.

The one-way ANOVA test above shows that the lesson study approaches are efficient with teachers and lecturers (F = 78.14; p = 0.00<0.01). As a result, a follow-up exam (Post Hoc Test) is required to establish the size of the difference in developing student knowledge between each set of experimental subjects. The Post Hoc test findings revealed that the combined approach of teachers and lecturers was more successful than

Table 2
Mean, SD, and ANOVA test results

Techniques	Pretest		Post-test		T	Gain Score		F
	M	SD	M	SD		M	SD	(3,55)
T (Group A)	81.86	3.85	91.43	3.56	-10.38**	9.57	2.44	
L (Group B)	79.43	4.58	92.71	4.53	-31.59**	13.28	1.11	78.14***
TL (Group C)	72.14	5.14	93.71	4.37	-33.22**	21.57	1.72	

*Note. ** < 0.05 means significance level at 5%*

the combined technique of teachers and lecturers alone (MD = -8.28; p> 0.05).

Lesson study is learning on a lesson. A teacher can learn about a particular lesson through the existing learning display (live/real or video recording). Teachers can adopt methods, techniques, or learning strategies, use media, and so on that are appointed by performing teachers to be imitated or developed in their respective classes. Other teachers or observers need to analyze the lesson's positive or negative side from minute to minute. The results of this analysis are very much needed as input for performing teachers for improvement, or through the learning profile, the teacher or observer can learn from learning innovations made by other teachers. Although it is a simple idea, lesson study is a complex process. Lesson study is a process that collaborates teachers in small groups to plan, teach, observe, review, and report the results for application in individual teaching. The innovation of the teaching and learning process designed and developed in this lesson study activity is active, practical, fun, and effective. In its implementation, lesson activities. This study is not an instructional or single school, group of teachers in the same field in the MGMP, groups of teachers in a group, groups of teachers in a field, and lecturers in a field in one area (Juano et al., 2019).

CONCLUSION

This result revealed that once lesson study is introduced into the teaching process in any of the Groups, the students' learning system eventually improves their

accomplishment; in Al-Bernawi School Libya, the collaboration between teachers and lecturers (Group C) has been the most effective in the students' learning as compared to the other variations (Group A and B). Lecturers' teaching styles, as well as teachers' and lecturers' teamwork, have a substantial impact on students' grasp of social sciences materials. The one-way ANOVA test above shows that the lesson study approaches are efficient with teachers and lecturers (F = 78.14; p = 0.00 0.01). As a result, a follow-up exam (Post Hoc Test) is required to establish the size of the difference in developing student knowledge between each set of experimental subjects. The Post Hoc test findings revealed that the combined approach of teachers and lecturers was more successful than the combined technique of teachers and lecturers alone (MD = -8.28; p> 0.05). So based on this result, it can be concluded that the combination approach of teachers and lecturers was more successful than the combined technique of teachers and lecturers alone, and this also supported the new rules that it takes a reciprocal relationship between students and teachers to always work together in achieving optimal achievement or learning outcomes and cannot be from one side only; therefore, the combination between the two is the best.

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