

Barriers for Implementation of E-pharmacy Policy: Views of Pharmacy Authorities, Public Institutions and Societal Groups

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ABSTRACT

Malaysian government has established National Digital Economy Policy to promote e-commerce adoption among small to medium enterprises (SMEs). Although this national policy has expanded to community pharmacists for providing e-pharmacy services, only a few independent pharmacies have adopted e-pharmacy practices. As such, it is important to critically investigate the implementation of e-pharmacy policies in promoting online pharmaceutical services in Malaysia. This study explores the barriers in implementing e-pharmacy policies from the perspective of pharmaceutical authorities, public agencies and societal groups. The Consolidated Criteria for Reporting Qualitative Research (COREQ) was employed in this study. Interview data were collected from key pharmaceutical authorities, agencies governing e-commerce and consumer affairs, health professionals and consumer societal groups. Thirty-three key actors participated in this study.

Themes focusing on factors that impede the implementation of e-pharmacy policies were identified using an open-axial coding approach. Eight emerging themes were identified to be influencing policy inaction and policy barriers towards e-pharmacy implementation for empowering community pharmacists: (1) policymakers' inattention to private business interests; (2) authoritarian administrative action unsuitable for

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e-pharmacy businesses; (3) deficit of trust towards community pharmacies practising e-pharmacy services; (4) conflicting policy requirements between safeguarding patients and business applications; (5) limited organisational resources and budget constraints; (6) policy incompatibility and different jurisdiction requirements; (7) unfriendly e-pharmacy requirements; and (8) dominant interest groups opposing e-pharmacy policies. Clear and consistent policies will benefit both patients and consumers as they acquire improved access to professional consultation and various options for quality medicine at competitive prices.

Keywords: Community pharmacy, digital health, e-pharmacy, pharmaceutical policy, pharmacy practice, policy implementation

INTRODUCTION

Communication technology has revolutionised the conventions of retail business by adopting e-commerce as a platform for the promotion, buying and selling of products over the internet. E-commerce is growing in popularity in consumerist markets because it features a variety of benefits to consumers (Khatibi et al., 2006). It is also no longer complicated, and consumers feel secure utilising online banking to make purchases (Akhter, 2015). With this in mind, the government encourages small to medium enterprises (SMEs) to join the digital economy by utilising internet facilities (Zain et al., 2015).

The government has recognised the internet as an essential utility service for

the public (Economic Planning Unit, 2020). Furthermore, the government is empowering the digital economy by providing e-commerce training programmes and microfinance funding to SMEs (Malaysia Digital Economy Corporation, n.d.). The government is focusing on SMEs to help them grow their businesses in the digital sector and prepare for the challenges of the 4.0 Industrial Revolution (Economic Planning Unit, 2020).

The government's objective in creating a digital economy has enticed a number of healthcare investors to venture into the digital health market. Digital Health Malaysia (DHM) is a non-profit organisation that promotes communication technology and digital equipment connected to the internet (Internet of Things). DHM has created various public awareness campaigns on the advantages of adopting digital health technologies to improve health practices over time (Digital Health Malaysia, n.d.). DHM's activities have piqued the government's interest in digitally empowering the healthcare economy. Various government agencies have collaborated with DHM and other stakeholders to find a policy equilibrium between proper health practices, technological standards and legislative reform (Ministry of Health Malaysia, 2020).

The pharmaceutical community is among the most important healthcare providers in a community setting (Ong et al., 2020). Pharmacies provide patients with access to medicine at competitive prices (Ooi et al., 2017). Pharmacies also provide rudimentary diagnoses using basic medical

equipment, as well as health consultations to patients, in which they are provided with crucial information on their medication and how to use it correctly (Hassali et al., 2009). Pharmacies are venturing into the domains of e-commerce and e-health to provide reliable online pharmaceutical services (Orizio et al., 2011). Based on online observations, various online pharmacy platforms provide patients with attractive offers. Big chain pharmacy firms have proper e-pharmacy platforms with pharmaceutical service features, such as visual consultation, e-prescription applications and online medication adherence programmes. Most small to medium-sized pharmacies use e-commerce platforms, such as Lazada and Shopee, to sell their pharmaceutical products.

The Pharmaceutical Services Programme (PSP) is a government agency responsible for consolidating federal government policies to empower community pharmacies to venture into the digital health economy. In this regard, together with relevant stakeholders who are directly and indirectly involved with pharmaceutical policies, PSP has joined together to establish appropriate pharmaceutical practice standards for online pharmaceutical services. Among the policies developed to empower e-pharmacy services is the use of e-prescriptions (Halid, 2020). The e-prescription policy was made to ensure that transparency and reliability of the e-prescription system between prescribers, pharmacists and patients were maintained. The PSP also specifies that controlled medicine (prescription

medicine and pharmacy medicine) cannot be promoted online to protect the public from counterfeit medicine and fraudulent health services (Fong, 2020). PSP prohibits the online sale of controlled medicine, reducing community pharmacists' advancements in online retail business (Pharmaceutical Services Programme, 2020).

E-pharmacy policies were intended to empower community pharmacies to venture into the e-health economy. However, e-pharmacy policies have been inactive due to numerous challenges posed by public and social actors. PSP has yet to reform legislation and remains indolent about setting-up proper requirements to protect consumers and patient safety when subscribing to e-pharmacy services. PSP inaction regarding promoting e-pharmacy adoption in a community setting has caused misperception about online pharmaceutical services being retail businesses only.

The study on policy implementation barriers is important to provide valuable insight into and improve policymaking. Therefore, the current study aims to explore and understand the challenges of e-pharmacy policy implementation from the perspectives of pharmacy authorities, relevant agencies and societal groups.

METHODOLOGY

An inductive research approach was employed in this study to implement a qualitative research guideline of Consolidated Criteria for Reporting Qualitative Research (COREQ, Tong et al., 2007).

Research Team and Reflexivity

Five investigators were involved in the study: AAB, MAHA, SCO, GSO and CYT. AAB was the principal investigator. MAHA, SCO and GSO were experts in a qualitative and quantitative study in social and administrative pharmacy, while CYT is a pharmacist working at the Sarawak State Health Department, MOH. All investigators have vast knowledge and experience in qualitative studies. AAB, MAHA, SCO, GSO and CYT were involved in the study design, interview protocol and data analysis stages.

Study Design

A semi-structured interview (Appendix 1) was employed for data collection. Articles related to policy implementation from official websites and various open-access journals were screened by AAB, MAHA, SCO and GSO to design the study. Similar qualitative studies from various fields of policy research, such as environmental policy (Tuokuu et al., 2018), health policy (Havers et al., 2019) and energy policy (Gauthier & Moran, 2018), were adopted based on the following policy dimensions: (1) policy features, (2) policy compatibility, (3) policy limitation and (4) policy environment (see Appendix 1). All investigators were involved in designing the interview questions to be in line with the research aims, while AAB and CYT designed the interview protocol (Appendix 2) to explore the 'what,' 'why' and 'how' of the phenomenon affecting

policy implementation (Berg & Lune, 2017).

This study was registered under the National Medical Research Register (NMRR ID: NMRR-19-3171-50049 (IIR)) and obtained ethical approval from the Medical Research and Ethics Committee (MREC), Ministry of Health Malaysia and the Human Ethics Research Committee of Universiti Sains Malaysia (JEPeM USM).

Participant Characteristics and Recruitment

AAB and CYT identified relevant respondents for the interview. These respondents were among the public and social actors directly involved in e-pharmacy policies. Public actors were defined as executives who worked in government institutions as regulators or enforcement authorities in either pharmaceutical practices or e-commerce faculties. Social actors were defined as individuals or groups that may be directly affected by implementing e-pharmacy policies. Accordingly, social actors were identified as pharmacy interest groups, community pharmacists, medical interest groups, private general practitioners and consumer interest groups.

A formal invitation was sent via email by AAB to the potential respondents with the help of MAHA, SCO and GSO. AAB reminded the potential respondents to give feedback after one week from the first email sent to their official email addresses.

Various government departments and organisations sent relevant officers and committee members to attend the interview sessions. E-health Development

Section (EHS) is a department under MOH that oversees digital health policies. PSP is a pharmaceutical division under MOH that administers policies related to pharmaceutical practices. The Malaysian Communication and Multimedia Commission (MCMC) is an authority that regulates internet content and network providers. The Department of Personal Data Protection (DPDP) is a government agency that supervises consumers and sensitive health data. The Ministry of Domestic Trade and Consumer Affairs (MDTCA) is a government institution that regulates e-commerce standards and consumer protection. The Malaysian Pharmaceutical Society (MPS) and the Malaysian Community Pharmacy Guild (MPCG) are organisations that protect the interests of the pharmaceutical profession. The Malaysian Medical Association (MMA) is an organisation that protects the interest of medical doctors. Community pharmacists who took part in this study were registered pharmacists with a Type A license to conduct business as retail community pharmacists. Private general practitioners are individuals who own or manage private clinics. The Malaysian Cyber Consumers Association (MCCA) is a non-government organisation to protect online consumer interests.

Invitations to participate in the study were also disseminated to two community pharmacists and two general practitioners who agreed to participate. In addition to that, another two community pharmacists agreed to take part in the study after being identified via snowballing from the respondents.

Interview Session

Face-to-face interviews were conducted with the respondents by AAB at their convenience in terms of date, time and place, according to the interview protocol. Respondents were first briefed about the study and informed of their rights to withdraw from the interview at any time during the study process. The interview only commenced after the respondents' consent to participate in the study and record their interviews. AAB took field notes during the interview. The study was deemed complete after the data reached saturation, as determined by the investigation team. A saturation point is defined as a point where no new or additional data can be gleaned to support the theme development of the study (Berg & Lune, 2017).

Analysis and Findings

All the data collected (field notes and audio recordings) was stored in Google Cloud under AAB's username and password. The data was downloaded and shared with all the investigators for analysis. Audio data was transcribed and directly translated into text. Thematic analysis was employed in this study through the open-axial coding technique. Transcription text was screened for similar codes and classified (Neuman, 2014). The investigators analysed the group codes to examine relationships, trends and intents (Berg & Lune, 2017). Themes were declared after discrepancies were addressed in the discussion, and a conclusion was agreed upon between all investigators (Nowell et al., 2017).

RESULT

Data were collected from 33 respondents (see Table 1), consisting of representatives from government agencies and social groups directly involved with e-commerce and pharmaceutical practices policies.

The study found eight themes that influence policy inaction and policy barriers towards e-pharmacy policy implementations aimed at empowering community pharmacists adopting e-pharmacy practices, which are (1) policymakers’ inattention towards private business interests, (2)

authoritarian administrative action unsuitable for e-pharmacy businesses, (3) deficit of trust towards community pharmacies practising e-pharmacy services, (4) conflicting policy requirements between safeguarding patients and business applications, (5) limited organisational resources and budget constraints, (6) policy incompatibility and different jurisdiction requirements, (7) unfriendly e-pharmacy requirements and (8) dominant interest groups opposing e-pharmacy policies, as shown in Table 2.

Table 1
Study participants

Institution	Organization	Number of Participants
Ministry of Health	E-health Development Section (EHS)	4
Pharmaceutical Services Programme (Pharmacy Authority)	Pharmacy Enforcement Division (PED)	9
	Pharmacy Practice and Development Division (PPDD)	1
	Pharmacy Policy and Strategic Planning Division (PPSPD)	2
E-Commerce and Consumers Relevant Authority	Malaysian Communications and Multimedia Commission (MCMC)	2
	Ministry of Domestic Trade and Consumers Affair (MDTCA)	1
	Department of Personal Data Protection (DPDP)	2
Pharmacy and Medical Profession Group	Malaysian Pharmaceutical Society (MPS)	1
	Malaysian Community Pharmacy Guild (MCPG)	2
	Malaysian Medical Association (MMA)	1
	Community pharmacists (CP)	4
	General practitioners (GP)	2
Consumer Societal Group	Malaysian Cyber Consumer Association (MCCA)	2
Total		33

Table 2
Themes of e-pharmacy policy implementation barriers

Themes	Barriers
1. Policymakers’ lack of attention towards private business interests	● Lack of political interest
2. Authoritarian administrative enforcement unsuitable for e-pharmacy businesses	● Authoritarian admission

Table 2 (continue)

Themes	Barriers
3. Deficit of trust towards community pharmacies practising e-pharmacy services	<ul style="list-style-type: none"> ● Trust issues towards community pharmacies' virtual dispensing practice ● Trust issues towards community pharmacists' ethics concerning profit orientation
4. Conflicting policy requirements between safeguarding patients' safety and business applications	<ul style="list-style-type: none"> ● Inconsistency policy requirements
5. Policy incompatibility and different jurisdiction requirements	<ul style="list-style-type: none"> ● Policy incompatibility between institutions ● Inadequate expertise to formulate technology-related policies ● Different technical requirements between e-commerce and pharmacy practices
6. Limited organisational resources and budget constraints	<ul style="list-style-type: none"> ● Limited resource capacity
7. Unfriendly e-pharmacy requirements	<ul style="list-style-type: none"> ● Lack of stakeholder involvement in the policy formulation process ● Unfriendly requirements affecting business sustainability
8. Dominant interest groups opposing e-pharmacy policies	<ul style="list-style-type: none"> ● Lack of government support to reduce tensions in market competitiveness

Theme 1: Policymakers' Inattention Towards Private Business Interests.

Respondents stated that the e-pharmacy policy was established to facilitate community pharmacies providing e-pharmacy services for patients. This policy was expected to encourage community pharmacists to participate in the digital health economy. Respondents also clarified that e-pharmacy-related policies do not receive special attention from policymakers because e-pharmacy is a policy comprising of private business interests.

“Currently, the old Poison Act 1952 is adequate in taking action against individuals selling medicines online without an authorised pharmacist's license. We are in the midst of formulating the best course of

action to facilitate community pharmacists venturing into online health services. But, due to certain circumstances, the policymakers in Parliament do not make it a priority to amend pharmaceutical laws.” – PED01 (59 years old, Pharmaceutical Enforcement Division).

Theme 2: Authoritarian Administrative Action Unsuitable For e-Pharmacy Businesses.

Since the regulation is pending amendment, PSP resorts to administrative action to allow community pharmacists to provide online services.

“We exercise administrative control on pharmacists providing online services. If they are found to be

contradicting the code of conduct, we revoke their pharmaceutical license and take action against them.” – PED02 (59 years old, Pharmaceutical Enforcement Division).

The respondents stated that PSP is currently formulating propositions to ensure that investigation and prosecution can be imposed against impropriety and misconduct in online pharmaceutical services.

“At the moment, community pharmacies must comply with the existing regulations. We concentrate on the investigation and prosecution of rogue pharmacists.” – PED06 (46 years old, Pharmaceutical Enforcement Division).

The findings show that, although PSP leans towards planning requirements that are enforceable and favourable to the enforcement of e-pharmacy services, they are less suited for e-pharmacy attributes and are in conflict with the national policy’s intent.

“PED policymaking always leans towards enforcement power without considering the impact on the community pharmacy market.” – MCPG01 (63 years old, Malaysian Community Pharmacy Guild).

Theme 3: Deficit Of Trust Towards Community Pharmacies Practising e-Pharmacy Services. Respondents felt that e-pharmacy would become a health

trend in Malaysia. They also believe that community pharmacy services are more efficient when providing online services. Although e-pharmacy provides convenience, e-pharmacy services can be abused for profit and neglect patient safety without adequate control and supervision. Respondents also claimed that they find it difficult to trust community pharmacists who can maintain the quality of their e-pharmacy services if policy enforcement is limited.

“Can community pharmacies ensure that online dispense has the same effect as physical face-to-face interaction? We are concerned that e-pharmacy may be misused and abused to gain profit rather than providing proper health services to patients.” – PED04 (59 years old, Pharmaceutical Enforcement Division).

Theme 4: Conflicting Policy Requirements Between Safeguarding Patients and Business Applications. E-pharmacy is a hybrid faculty of e-commerce and online pharmacy practices. Respondents from PSP admitted that they are not familiar with the e-pharmacy business concept, as they only specialise in pharmaceutical practices, not commerce. Respondents voiced their concern that too much emphasis is being placed on the requirements intended to safeguard the interests of patients’ health without considering the fact that e-commerce features can conflict with e-pharmacy attributes.

“Formulating a policy without proper research has caused many e-pharmacy requirements to be rejected by stakeholders.” – BDPSF02 (38 years old, Pharmacy Policy and Strategic Planning Division).

Theme 5: Limited Organisational Resources and Budget Constraints. Each institution has certain areas of expertise depending on its objectives and mandates. Hence, cooperation between institutions is needed for strategic policy implementation. However, respondents stated that complications arise when cooperation between agencies must be limited by allocating operations and the development of relevant institutions. Intra-institution agencies strategically accommodate their resources but constrain them to certain portfolios.

“PED’s digital lab budget is limited, but we have to accommodate other enforcement agencies within the MOH organisation in order to produce digital evidence for investigation and court processes. With our limited budget, we must be careful to spend the budget according to case priority.” – PED08 (45 years old, Pharmaceutical Enforcement Division).

Theme 6: Policy Incompatibility and Different Jurisdiction Requirements. Government institutions enforce businesses’

online transactions to safeguard the interests of the public, customers and service providers. E-pharmacy has adopted e-commerce features efficiency when providing pharmaceutical services that are still of value to community pharmacists. The different jurisdiction requirements between governmental institutions trigger technocracy and create a value gap.

“We take so much time formulating guidelines for community pharmacies providing online services because we are not familiar with online attributes. Other agencies regulate and govern internet content and customer safety. We want them to get involved with the policymaking process, but their technical input conflicts with our policy’s interest. Our concern is from the health and pharmaceutical perspective. We set requirements within our jurisdiction.” – PED02 (59 years old, Pharmaceutical Enforcement Division).

Theme 7: Unfriendly e-Pharmacy Requirements. Respondents from the social actors’ group claimed that the existing pharmacy regulations are insufficient to encourage community pharmacists to invest in e-pharmacy services. The unclear requirements ease enforcement action rather than facilitate innovative pharmaceutical practices. With the community health services business shrinking due to competitive market shares, unfriendly

e-commerce pharmacy policies can diminish business sustainability.

When asked about the policy that affects community health services, a respondent gave an example of the requirement of a digital signature for e-prescriptions, which he perceived to be over-regulated without considering its effects on the market.

“The government has put unnecessary requirements to prescriptions, where a GP has to issue out prescriptions upon patient’s request ... and if my clinic subscribes to the e-prescription system, then the system should comply with the Digital Signature Act 1997 requirements, which is costly ... The signature is to identify who issued out the prescription. There are alternatives to compensate for a digital signature. For example, a username and password. The government should consider empowering the business environment rather than focusing solely on law interpretation. Those pharmacy laws are outdated and should have been reformed yesterday...” – GPP01 (51 years old, medical practitioner).

Theme 8: Dominant Interest Groups Opposing e-Pharmacy Policies. Respondents from the pharmacy profession believed that dispensing separation could be imposed on GPs because e-pharmacy provides better options for patients to

choose their medicines, whether generic or innovator, at better retail prices.

“With e-pharmacy, patients can get better options to buy medicines, according to their preference, at reasonable prices ... rather than hopelessly accepting whatever GPs have in their stock. I think with e-pharmacy, we can move a motion for dispensing separation.”
– MPS01 (65 years old, Malaysian Pharmaceutical Society).

However, GPs perceived that e-pharmacy services would worsen the already tough business competition in the community setting. GPs opposing community pharmacists were operating virtual and distance dispensing affect e-pharmacy policy implementation politically.

“Even though e-pharmacy services intended to facilitate health and increase access to medical treatment, the business model never met the standard requirements of fundamental medical practices.” – MMA01, (44 years old, Malaysian Medical Association).

DISCUSSION

This study analysed the perceptions of public and social actors with regard to the policy implementation process of e-pharmacy services by community pharmacies in Malaysia. Based on the description of

public actors, we identified policy priority, organisation attitude, budget constraints and technocracy as barriers to e-pharmacy policy implementation. Meanwhile, descriptions of social actors identified hostile business requirements and business competitiveness as challenges limiting the investment in e-pharmacy services from a socio-economic environment perspective.

Policy Priority

The findings are consistent with the policy theory, which recognises that a political agenda has a significant influence on dictating policy features and implementation direction (Cairney & Oliver, 2017). Policies receive priority concern when the policy environment is favourable for political mileage (Heo & Seo, 2021). This study derived that the inattention of political executives and policymakers towards the business interests of community pharmacists has impeded policy action that enables business-friendly requirements for community pharmacies to provide e-pharmacy services.

Organisation's Attitude

An organisation's attitude affects policy implementation. According to Van Meter and Van Horn (1975), a lack of understanding of policy intent will reduce the organisation's motivation to enforce that policy. Hence, this study discovered that the intent of e-pharmacy policies conflicts with their content. E-pharmacy policies are intended to facilitate community pharmacies

providing online services. However, the required settings for e-pharmacy services are not business-friendly for community pharmacies. PED is an enforcement agency that focuses on compliance requirements rather than the business interests and facilitation of policy content. Lack of input from stakeholders (social actor groups) can result in impracticable e-pharmacy requirements in business settings (Elmore, 1979).

Policy development is challenging if an organisation is heavily grounded in a specific practice (Thomas & Grindle, 1990). The Pharmacy Authority, as a pharmaceutical administrator, is grounded in traditional pharmacy practices and distrusts virtual health consultation. The authority is obliged to ensure that community pharmacies emphasise patients' safety instead of profiting from patients' health. Even though e-pharmacy is a new norm in health services, it is still in its infant stage (Kuzma, 2011).

There has been little research evaluating the effectiveness of professional pharmaceutical conduct in providing e-pharmacy services (Orizio et al., 2011). Over time, e-pharmacy services will gain traction from patients and consumers, and more licensed pharmacists will adopt e-pharmacy into their pharmacy services. As such, to improve policy action, PED must consider investing in professional training for e-commerce applications and research better strategic compliances to e-pharmacy attributes.

Policy Incompatibility

This study found similarities to the Van Meter and Van Horn (1975) study, where policy incompatibility impeded policy implementation due to different institutions having different jurisdictions and policies. In the case of e-pharmacy, incompatibility occurs due to the different commerce standards for pharmaceutical products. While the MCMC and MDTCA stress consumer rights and safety, PSP focuses on the obligations of pharmacists to dispense medicine according to patients' health requirements. Medicine should not be sold as an ordinary good, as it can potentially cause deleterious health effects if not properly administered. In order to enable e-pharmacy services, a new set of standards should be established to ensure effective communication, compliance with patient safety requirements and professional conduct. Thus, inclusive policies should reach the ministry administration and relevant agencies to promote clear intent and requirements to enforce compliance. Allocation for strategic resource collaboration can facilitate better policy implementation.

Opposition by Dominant Groups

This study is consistent with Gable (1958), who indicates that dominant social groups could influence policy agenda and implementation. The competitive private health market for medication dispersal is deterring the acceptance of community pharmacists and GPs for

providing online services. E-pharmacy can trigger dispensing separation initiatives, as it promotes the use of e-prescription for patients to acquire better choices of medicine brands at competitive prices. As such, this study found that the GP fraternity strongly opposes the idea of community pharmacies providing e-pharmacy services due to the perceived risks towards medical ethics in commerce and the fear that market dominance of prescription medicines will shift to community pharmacies. The GP fraternity, comprising a large number of health professionals, has a voice in policy determination and plays a pivotal role in the development of e-pharmacy policies. The opposition stance taken by GP groups towards dispensing separation may become an external barrier to e-pharmacy policy implementation. However, the GP fraternity respects the significant role of pharmacists as medical experts that provide access to affordable medicines and health services in a community setting (Hassali et al., 2009).

CONCLUSION

This study critically analysed the barriers to policy implementation from the perspectives of public and social actors. This study identified a lack of policymakers' attention towards private interests, unclear policy features, organisations' negative attitudes, limited resources and funding and excessive requirements as barriers to e-pharmacy policy implementation. Clear policy intent, in tandem with inclusive e-pharmacy policies, benefits patients in terms of better access to affordable medicines and

acknowledges the role of pharmacists in the digital health economy market. Private and business-related policies rarely attract the attention of policymakers, leading to many challenges in policy agenda and implementation. Overcoming these barriers requires serious commitment and perseverance from public and social actors to improve policy implementation. This study advocates five recommendations based on the research findings, which are (1) allocating strategic resources in evidence-based research to justify policy reform or change necessities, (2) positioning experts in the field to fill in the void of knowledge for better policy formulation and execution, (3) focusing on stakeholders' insights into the issues and challenges faced by community pharmacies in providing e-pharmacy services, (4) reforming policies with business-friendly requirements to encourage community pharmacies to invest in e-pharmacy services and (5) creating a collaborative partnership under the public-private economy initiative programme of the PSP between them and business stakeholders to enable prosperity in the digital health market.

Research Limitations and Future Prospects

This study is empirical with an inductive research approach using interviews as its data collection method. Most of the study's participants were senior officers with numerous years of experience in policymaking. However, their insights in

this study were restricted to their expertise in their respective fields. It would be an advantage if this study could be extended to a higher level—political executives at top tier policymaking levels. Despite study limitations, this research has generated new knowledge that can serve as a constructive reference to improve the implementation process of technology-related health policies in Malaysia and other countries with similar policies.

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REFERENCES

- Akhter, S. H. (2015). Impact of internet usage comfort and internet technical comfort on online shopping and online banking. *Journal of International Consumer Marketing*, 27(3), 207-219. <https://doi.org/10.1080/08961530.2014.994086>
- Berg, B. L., & Lune, H. (2017). *Qualitative research methods for the social sciences* (Ninth Edition) Global Edition. Pearson.
- Cairney, P., & Oliver, K. (2017). Evidence-based policymaking is not like evidence-based medicine, so how far should you go to bridge the divide between evidence and policy? *Health Research Policy and Systems*, 15(1), 1-11. <https://doi.org/10.1186/s12961-017-0192-x>
- Digital Health Malaysia. (n.d.). *About DHM*. <https://www.digitalhealthmalaysia.org/about-dhm>
- Economic Planning Unit. (2020). *National Fourth Industrial Revolution (4IR) Policy*. <https://www.epu.gov.my/sites/default/files/2021-07/National-4IR-Policy.pdf>
- Elmore, R. F. (1979). Mapping: Backward and implementation policy decisions. *Political Science Quarterly*, 94(4), 601-616.
- Fong, L. F. (2020, April 29). RM60mil in unapproved Covid-19 med, products seized in global Interpol operation. *The Star Online*. <https://www.thestar.com.my/news/nation/2020/04/29/rm60mil-in-unapproved-covid-19-med-products-seized-in-global-interpol-operation>
- Gable, R. W. (1958). Interest groups as policy shapers. *The Annals of the American Academy of Political and Social Science*, 319(1), 84-93. <https://doi.org/10.1177/000271625831900110>
- Gauthier, C., & Moran, E. F. (2018). Public policy implementation and basic sanitation issues associated with hydroelectric projects in the Brazilian Amazon: Altamira and the Belo Monte dam. *Geoforum*, 97(February), 10-21. <https://doi.org/10.1016/j.geoforum.2018.10.001>
- Halid, S. (2020, September 22). Syor pinda akta, hukuman lebih berat [Recommendation to amend the Act, severe penalties]. *BH Online*. <https://www.bharian.com.my/berita/nasional/2020/09/733952/syor-pinda-akta-hukuman-lebih-berat>
- Hassali, M. A., Awaisu, A., Shafie, A. A., & Saeed, M. S. (2009). Professional training and roles of community pharmacists in Malaysia: Views from general medical practitioners. *Malaysian Family Physician*, 4(2-3), 7.
- Havers, S. M., Russo, P. L., Page, K., Wilson, A., & Hall, L. (2019). Clinician perspectives of policy implementation: A qualitative study of the implementation of a national infection prevention policy in Australian hospitals. *American Journal of Infection Control*, 47(4), 366-370. <https://doi.org/10.1016/j.ajic.2018.09.029>
- Heo, K., & Seo, Y. (2021). Applying foresight to policy agenda-setting: A successful case in South Korea. *Futures*, 127(December 2020), Article 102701. <https://doi.org/10.1016/j.futures.2021.102701>
- Khatibi, A., Haque, A., & Karim, K. (2006). E-commerce: A study on internet shopping in Malaysia. *Journal of Applied Sciences*, 6(3), 696-705. <https://doi.org/10.3923/jas.2006.696.705>
- Kuzma, J. (2011). Web vulnerability study of online pharmacy sites. *Informatics for Health & Social Care*, 36(1), 20-34. <https://doi.org/10.3109/17538157.2010.520418>
- Malaysia Digital Economy Corporation. (n.d.). *SMEs Digitalisation*. <https://mdec.my/digital-economy-initiatives/for-the-industry/sme/>
- Ministry of Health Malaysia. (2020). *Annual Report Ministry of Health Malaysia 2020*. <https://www.moh.gov.my/moh/resources/Penerbitan/>

- Penerbitan%20Utama/ANNUAL%20REPORT/
Annual_Report_MOH_2020.pdf
- Neuman, W. L. (2014). *Social research methods: Qualitative and quantitative approaches* (Seventh Edition). Pearson, Essex.
- Nowell, L. S., Norris, J. M., White, D. E., & Moules, N. J. (2017). Thematic analysis: Striving to meet the trustworthiness criteria. *International Journal of Qualitative Methods*, 16(1). <https://doi.org/10.1177/1609406917733847>
- Ong, S. C., Ooi, G. S., Shafie, A. A., & Hassali, M. A. (2020). Knowledge, attitude and disposing practice of unused and expired medicines among the general public in Malaysia. *Journal of Pharmaceutical Health Services Research*, 11(2), 141-148. <https://doi.org/10.1111/jphs.12333>
- Ooi, G. S., Hassali, M. A., Shafie, A. A., Kong, D. C. M., Mak, V. S. L., & Chua, G. N. (2017). Consumers' perspectives of Malaysian community pharmacists as health educators: A qualitative insight. *Journal of Pharmacy Practice and Research*, 47(3), 186-192. <https://doi.org/10.1002/jppr.1219>
- Orizio, G., Merla, A., Schulz, P. J., & Gelatti, U. (2011). Quality of online pharmacies and websites selling prescription drugs: A systematic review. *Journal of Medical Internet Research*, 13(3), Article e74. <https://doi.org/10.2196/jmir.1795>
- Pharmaceutical Services Programme. (2020, December 24). Panduan pembelian ubat "online" [Medicine online purchasing guide]. *Ministry of Health Malaysia*. <https://www.pharmacy.gov.my/v2/ms/entri/panduan-pembelian-ubat-online.html>
- Thomas, J. W., & Grindle, M. S. (1990). After the decision: Implementing policy reforms in developing countries. *World Development*, 18(8), 1163-1181. [https://doi.org/10.1016/0305-750X\(90\)90096-G](https://doi.org/10.1016/0305-750X(90)90096-G)
- Tong, A., Sainsbury, P., & Craig, J. (2007). Consolidated criteria for reporting qualitative research (COREQ): A 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*, 19(6), 349-357. <https://doi.org/10.1093/intqhc/mzm042>
- Tuokuu, F. X. D., Gruber, J. S., Idemudia, U., & Kayira, J. (2018). Challenges and opportunities of environmental policy implementation: Empirical evidence from Ghana's gold mining sector. *Resources Policy*, 59(August), 435-445. <https://doi.org/10.1016/j.resourpol.2018.08.014>
- Van Meter, D. S., & Van Horn, C. E. (1975). The policy implementation process: A conceptual framework. *Administration & Society*, 6(4), 445-488. <https://doi.org/10.1177/009539977500600404>
- Zain, J., Ismail, S., & Najib, N. A. A. (2015). *DESA: Growing the digital economy from a national perspective*. Department of Statistics, Malaysia. https://www.dosm.gov.my/v1/uploads/files/7_Publication/Technical_Paper/MyStats/2015/4.%20DESA%20Growing%20the%20Digital%20Economy%20from%20a%20National%20Perspective.pdf

APPENDIX

Appendix 1

Interview Questions

Dimension	Objective	Question
Policy features	To understand political will	How does political agenda impact policy implementation?
Policy compatibility	To explore compatibility policy between inter- and intra- agencies	How do policy requirements affect policy implementation?
Policy limitation	To understand the limitations towards policy implementation	What impedes policy implementation?
Policy environment	To explore the competitive environment that influences policy implementation	How does policy environment affect e-pharmacy businesses?

Appendix 2

Interview Protocols

Attribute	Procedure	Remarks
Greet and Meet	Provide comfort to the respondents to share their thoughts and opinions on the subject matter	Ask respondents how to make them feel comfortable during the interview session. Good gestures will provide good rapport.
Informed study and consent	Brief the respondents on the study and their right to withdraw from participating in the study.	Respondents must give their consent to study participation and audio recording before commencement of the interview session
Asking interview questions	Respondents should answer the questions with <i>bona fide</i> answers	Let the respondents digest the question, and give them ample time to respond. However, the investigator must ensure that the respondents do not divert from the research questions
Audio recording	To store data for thematic analysis	Must ensure that the audio recorder is turned on and can capture clear sound. Respondents must acknowledge that the recorder is used throughout the interview session.
Open questions	To provide respondents avenue to add any statements outside of the interview questions but relevant to the study	Towards the end of the interview session, ask the respondents to share their thoughts about the study subjects and discuss their inputs for a few minutes. This will fill a void in our insight.
End interview sessions	Brief the respondents about how the audio recording (interview data) will be used for qualitative analysis. Give a token of appreciation (if any) to the respondents for their time spent participating in the study	Inform the respondents that the investigator will contact the respondents if he needs further clarification on the interview statement given during the interview session.