

The Influence of Financial Literacy and Attitude Towards Financial Behaviour Amongst Undergraduate Students: A Cross-Country Evidence

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ABSTRACT

Undergraduate students should be able to manage their finances wisely while they are living apart from their parents. Therefore, good financial literacy and attitude should be developed during college to instil positive financial behaviour. It is a cross-country study to analyse the influence of financial literacy and attitude toward financial behaviour amongst Indonesian and Malaysian undergraduate students. This research involved 204 students from the Faculty of Human Ecology, IPB University, Indonesia, and Universiti Putra Malaysia. Data were collected through a self-report questionnaire with a convenience sampling technique. In general, the results revealed that the student's level of financial literacy was recorded as moderate, while financial attitude and behaviour were categorised as poor. This study identified that Indonesian students scored higher in financial literacy, whereas Malaysian students recorded better financial attitude and behaviour scores. Multiple regression results showed that financial attitude had a significant positive effect on financial behaviour amongst Indonesian and Malaysian students and the group. In contrast, financial literacy had a negative effect on financial behaviour amongst the respondents, except in Malaysia. Moreover, students' characteristics, such as age, grade point average (GPA), and income, had no significant impact on financial behaviour. The presence of financial education and socialisation to enhance financial behaviour are needed not only to focus on cognitive areas

but also to encourage a positive attitude. Stronger support and regulation from the government and stakeholders are vital to ensure the programme's success.

Keywords: Cross-country, financial attitude, financial behaviour, financial literacy, Indonesia, Malaysia, undergraduate students

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INTRODUCTION

As they live away from their parents and begin to gain independence, undergraduate students often experience more significant responsibilities, particularly concerning their finances. This greater financial freedom, however, also poses a challenge. Students must be wary of their consumption habits, as wisely managing their finances becomes increasingly essential to making ends meet. As the cost of living tends to increase significantly annually, and as students grow into adults with financial independence, these increasingly adult mindsets and emotions should be balanced by positive financial behaviour. Positive financial behaviour developed during college can increase later opportunities to achieve a higher quality of life after graduation (Xiao et al., 2009). This kind of good financial behaviour involves budgeting and cash flow management, account ownership, credit usage, savings behaviour, and asset accumulation. This behavioural pattern is often further associated with financial literacy. For instance, Appleyard and Rowlingson (2013) and Johan et al. (2021) argue that, in addition to shaping financial behaviour, financial knowledge can be gained through interactions with socialisation agents and that it is ideal for carrying these out from childhood. Moreover, Worthy et al. (2010) demonstrate that students' problematic financial behaviour can negatively impact their future financial well-being.

According to the Organisation for Economic Co-operation and Development (OECD, 2020), younger individuals

lack financial literacy and demonstrate largely negative financial attitudes and behaviour. Previous studies have revealed that a student's monthly spending is mostly allocated to pleasure and lifestyle rather than savings or educational needs, with students spending roughly 46% of their income on shopping (Dewi, 2017). Female students, in particular, were found to be more likely to spend their money on consumptive activities (Ridhayani & Johan, 2020). Similarly, around 47% of youth have experienced excessive debt on credit cards, and those under the age of 34 accounted for 26% of all bankruptcy cases in Malaysia. Most of these cases occur due to an inability to repay large amounts of debt owed to install purchases, personal loans, and credit institutions (Mohamad, 2020).

Financial literacy refers to knowing and understanding matters that support financial decision-making. It includes interest rates, inflation, risks, and returns (Lusardi & Mitchell, 2005). Those who have good financial literacy are more likely to engage in more positive financial behaviour, such as paying bills on time, using credit cards responsibly, saving, and investing (Lusardi et al., 2010; Urban et al., 2015). According to Johan et al. (2021), Khoirunnisaa and Johan (2020), Susan and Djajadikerta (2017), and Yahaya et al. (2019), financial behaviour can also be influenced by financial attitude. Individuals who do not treat financial matters promptly and with a sense of urgency are thus more prone to poor financial behaviour. In certain studies, demographic and socioeconomic characteristics had significant effects on financial behaviour,

such as those conducted by Loke (2017) and Herawati et al. (2018). Other studies have demonstrated how income affects the level of financial behaviour (Johan et al., 2021; Klapper & Panos, 2011), while higher grades and Pambudhi (2015) claimed that students with a higher grade point average (GPA) demonstrate a larger proportion of positive financial behaviour.

Numerous studies which explore financial behaviour have been undertaken worldwide, including in Indonesia and Malaysia. In 2020, the OECD published a study on certain countries' financial literacy, attitude, and behaviour. From 1 to 100, Indonesians were rated 53.2 for financial literacy, 66.8 for financial attitude, and 69.7 for financial behaviour, whereas Malaysians scored 52.3 for financial literacy, 54.9 for financial attitude, and 68.1 for financial behaviour (OECD, 2020). Based on these results, it can be inferred that Indonesians slightly outperform Malaysians in these specific facets of financial behaviour. In addition to the larger OECD investigation, several local studies were carried out in both countries. For instance, Johan et al. (2021) investigated financial capability amongst university students in Indonesia, while Herawati et al. (2018) explored the determinant factors of financial behaviour amongst accounting students in Bali, Indonesia. Suryanto (2017) probed financial behaviour amongst students more generally, and Sabri et al. (2008) considered financial behaviour and problems amongst students in Malaysia. Finally, Yahaya et al. (2019) evaluated the effects of financial behaviour amongst Malaysian students.

However, despite these numerous related studies, a gap exists in our understanding of financial literacy, attitude, and behaviour as a comprehensive concept across university students. Currently, minimal research has been undertaken which compares these financial behaviours between various countries, particularly in developing economies. The majority of extant studies have focussed on specific areas such as financial knowledge or behaviour, others otherwise on a specific geographical location. Comparative studies in this field are relatively limited, even though they enable countries to learn valuable lessons from each other moving forward. Indonesia and Malaysia, for example, are neighbouring countries, and both have demonstrated similar characteristics and areas of concern over the development of personal finances. Furthermore, both countries possess a large proportion of young people. In Indonesia, there were around 25.8 million young individuals aged between 19 to 24 (Badan Pusat Statistik [BPS], 2020), and in Malaysia, there were approximately 3 million young individuals (Department of Statistics Malaysia [DOSM], 2021). These younger individuals will play increasingly central roles in economic growth. As a result, they should be equipped with the relevant skills and abilities that will enable them to properly manage financial challenges, such as financial knowledge, attitude, and behaviour.

This study aims to address this gap by analysing financial literacy, attitude, and behaviour amongst a group of university

students. The findings of this study can be used as an important input for both government and other relevant stakeholders, such as schools and families. It also offers recommendations for developing effective policies and programmes that will benefit students as they seek to overcome financial challenges, develop financial responsibility, and become financially independent. This study also investigated the effects of certain characteristics concerning undergraduate students' financial behaviour in Indonesia and Malaysia. The findings of this study are expected to help students develop healthy financial capabilities.

This paper is divided into seven sections. Following the introduction, a literature review is conducted in Section 2, examining previous studies on financial literacy, attitude, and behaviour. Section 3 then discusses the study's methodology, including design, data, sampling, variables, measurement, and data analysis. Section 4 provides empirical results and interprets our findings, while Section 5 discusses the relevant results. Finally, Section 6 concludes the study and discusses the potential implications of these findings and possible avenues for further research. Finally, Section 7 describes the research limitations.

LITERATURE REVIEW

Tricomponent Model

The discipline of consumer behaviour has provided a framework for better understanding consumers' decision-making process. In the context of this

study, the financial process covers financial knowledge, attitude, and behaviour. Ajzen (1991) argued that attitude plays a significant role in understanding consumer behaviour. We, therefore, foreground the theory of attitude in this study. Solomon (2013) later outlined a model of consumer analysis termed the Tricomponent Attitude Model, which consists of cognition, affect, and behaviour. This model demonstrates how a consumer's affective and cognitive areas make up the mental responses to their environment. The cognitive area includes knowledge possessed about the given object or product. In this context, knowledge is the understanding and all other relevant information an individual possesses about those products and services. Meanwhile, the affective element includes a consumer's emotions concerning a given product. Furthermore, the cognitive element demonstrates a consumer's actions or behavioural tendencies towards the objects (Engel et al., 1995). The model thus asserts that these three dimensions are interrelated (Figure 1).

This construct theory was applied in this study. Throughout this study, the cognitive element refers to financial literacy, the affective element refers to a financial attitude, and the behaviour element refers

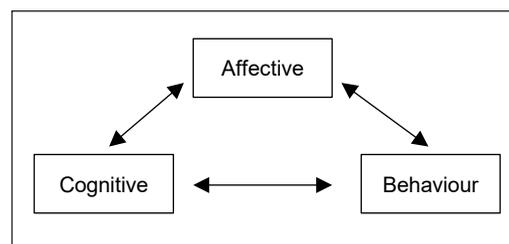


Figure 1. The tricomponent model (Solomon, 2013)

to financial behaviour. The following discussions will present the research development and examine studies related to these three areas.

Financial Literacy

There exist a wide range of definitions of financial literacy. Some focus on specific areas of financial literacy, such as the concept developed by Lusardi and Mitchell (2005), which covers the understanding of inflation, interest rates, and risk diversification. Others have described financial literacy in broader terms, such as Sohn et al. (2012), which defined it as the ability to understand and manage personal financial matters, such as managing money, savings and loans, future planning, and making sound financial decisions.

When they begin studying at a university, undergraduate students encounter several new financial challenges: budgeting, bill payments, credit card usage, and managing savings. Individuals are more likely to confidently navigate financial problems and react appropriately to new development if they understand basic financial concepts and numeracy skills (OECD, 2020). Certain studies have demonstrated that the ability to overcome these challenges can be reliant on their financial literacy (Ameliawati & Setiyani, 2018). A rigorous understanding of finances can also contribute to wider economic growth. On the other hand, individuals with low levels of financial literacy tend to make poorer financial decisions, are more likely to engage in inappropriate financial behaviour, and are

less able to manage unexpected financial challenges properly. It negatively impacts financial resilience, both personally and on a macro level (Programme for International Student Assessment [PISA], 2019).

In demographic and socioeconomic terms, Sabri et al. (2021) revealed that men tend to possess greater financial literacy than women, while Ramasawmy et al. (2013) and Shaari et al. (2013) found no significant differences in terms of gender. On the other hand, Harrison et al. (2016) identified that women are less confident than men when making financial decisions. It is especially caused for concern because difficulties in managing finances can create challenging situations for students, especially those who live apart from their parents.

Parents can nurture financial knowledge and teach formal education, such as in schools. School et al. (2018) added that financial education should be included in schools and college curricula. Furthermore, parents are responsible for being excellent role models for their children's financial behaviour from an early age (Fan & Chatterjee, 2018; Gerrans & Heaney, 2016). Besides family and formal education, there are several information sources obtainable, including seminars and training programmes, as well as other informal sources, such as friends and work experiences (Bucher-Koenen & Lusardi, 2011; Ida & Dwinta, 2010; Klapper & Panos, 2011).

Financial Attitude

Attitude is how an individual thinks and feels before acting (Schiffman & Kanuk, 2010).

The term 'financial attitude' thus describes an individual's state of mind, opinion, and judgment towards their finances (Humaira & Sagoro, 2018). A positive financial attitude can be assessed by evaluating the attitude concerning managing cash flow, investments, or planning (Budiono, 2020). Financial attitude can differ according to an individual's economic status, psychological health, occupational psychology, and lifestyle (Abdullah et al., 2019; Sabri et al., 2020). However, various studies have found that financial attitude also affects financial behaviour and plays a role in financial decision-making (Serido et al., 2013; Shih & Ke, 2014; Yap et al., 2018).

A study on Vietnamese individuals conducted by Ameliawati and Setiyani (2018), Khoirunnisaa and Johan (2020), and Mièn and Thao (2015), demonstrated similar findings. In addition, Selcuk (2015) found that their attitude toward money influences college students' financial behaviour and that individuals with a positive attitude can better plan out their monthly bill payments, remain within their budget, and effectively manage their future savings. According to Sabri and Aw (2020), individuals with this positive financial attitude are more careful with their expenditures, implemented through rigorous budgeting and planning for upcoming financial necessities.

Financial attitude is measured using several tools, including the Money Attitude Scale (MAS) developed by Yamauchi and Templer (1982) as well as the Money Ethic Scale (MES) developed by Tang (1992). Both of these instruments are pioneers in the development of financial attitude

measurement. The MES consisted of twelve items and was constructed based on 740 samples and six primary factors that were then classified into three components: emotional (good and evil), cognitive (achievement, respect, and freedom/power), and behavioural (budget). Conversely, the MAS comprises five money-attitude factors: power-prestige, retention-time, distrust, quality, and anxiety. The power-prestige factor describes how individuals use the money to impress and influence others and demonstrate success. The retention-time factor refers to future-oriented activities that require careful planning. The distrust factor is associated with doubts and suspicions regarding financial conditions, and the quality factor points to consumers who purchase products based on quality. Meanwhile, Yamauchi, however, dropped this factor because of its similarity to the power-prestige factor and argued that they shared a strong conceptual link. Finally, the anxiety factor assumes that money is a source of stress for individuals.

Financial Behaviour

Financial behaviour refers to the behaviour related to money management (Xiao, 2016). In the context of this study, university students who are entering a phase in which they begin to manage their money were considered independently. They begin budgeting, paying bills, managing credit, and dealing with other financial issues. Students' financial behaviour during these years can influence the decisions they make in the future (Shim et al., 2009). An inability

to manage financial issues can ultimately lead to inappropriate financial decisions and create burdens for their future.

Factors that can influence this behaviour are education, social environment, parental influence, values, personality, habit factors, attitude, and locus of control (Lusardi et al., 2010; Mutlu & Ozer, 2021; Putri & Simanjuntak, 2020). In addition, an individual's attitude toward managing their income and expenses as well as loans and investments can also reveal their financial behaviour (Laily, 2013; Sabri et al., 2020). According to Dew and Xiao (2013), four aspects of financial behaviour can be revealed: consumption or expenditure, cash flow management, savings and investments management, and credit or debt management. Meanwhile, Jacob (2002) noted that account ownership could also be leveraged to measure financial behaviour. Financial behaviour can also be assessed by how individuals conduct their activities, such as what they purchase and why (Ida & Dwinta, 2010). Other factors include

whether an individual pays bills on time, records expenses makes financial budgets, plans ahead, saves for unexpected needs, and compares prices before purchasing (Dwiastanti, 2015; Hilgert et al., 2003; Nababan & Sadalia, 2012).

Research Framework

Given the extant research in this field, a conceptual model was developed to structure this research (Figure 2). This study examines whether students' characteristics, financial literacy, and attitude are the drivers of the financial behaviour of university students in Indonesia and Malaysia. This research also investigates how each of these variables varies within each group.

This study is underpinned by twelve hypotheses (Table 1).

The following section will discuss the methods employed throughout this study. It explains the justification behind which techniques were employed and explores the details of our data collection and data analysis.

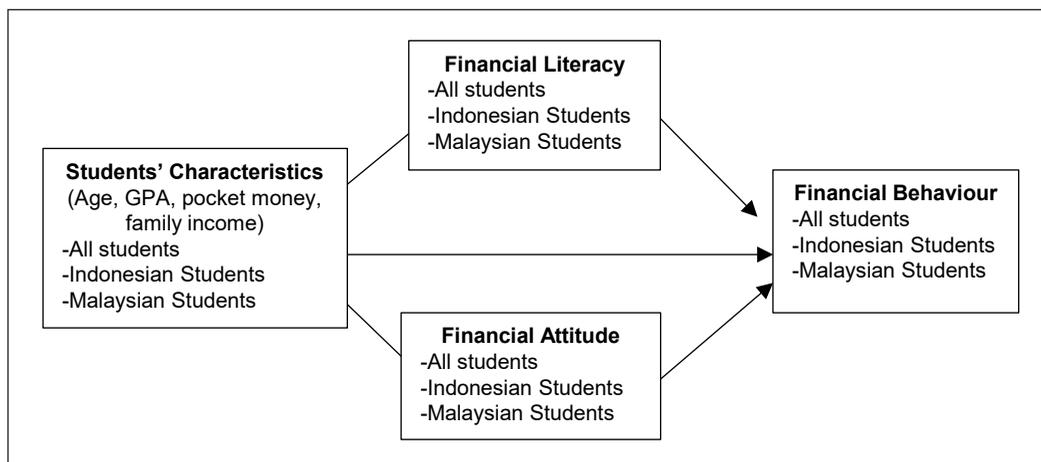


Figure 2. Research framework

Table 1
Hypotheses of study

No	Hypothesis
H1	There is a significant difference in financial literacy between Indonesian and Malaysian students.
H2	There is a significant difference in financial attitudes between Indonesian and Malaysian students.
H3	There is a significant difference in financial behaviour between Indonesian and Malaysian students.
H4	Financial literacy has a positive effect on financial behaviour among all students.
H5	Financial literacy has a positive effect on financial behaviour among Indonesian students.
H6	Financial literacy has a positive effect on financial behaviour among Malaysian students.
H7	Financial attitude has a positive effect on financial behaviour among all students
H8	Financial attitude has a positive effect on financial behaviour among Indonesian students.
H9	Financial attitude has a positive effect on financial behaviour among Malaysian students.
H10	Students' characteristics (gender, age, GPA, students pocket money) and family income have a positive effect on financial behaviour among all students.
H11	Students' characteristics (gender, age, GPA, students' pocket money) and family income have a positive effect on financial behaviour among Indonesian students.
H12	Students' characteristics (gender, age, GPA, students' pocket money) and family income have a positive effect on financial behaviour among Malaysian students.

METHODOLOGY

Data and Sample

This research was a cross-sectional study that utilised the survey method. The study was conducted at the Institut Pertanian Bogor (IPB University), Indonesia, and Universiti Putra Malaysia (UPM), Malaysia. The research locations were chosen based on several factors. Besides the ease of access, both are well-recognised public universities with students from various socio-demographic backgrounds. Moreover, both universities should have certain similarities in terms of academic programmes to be comparable. Both IPB and UPM offer a joint programme, the Faculty of Human Ecology (FEMA-IPB and FEM-UPM), which is the faculty with a focus on the interrelationship between humans and the environment. Each faculty

provided a variety of courses, including those related to social and economics, such as personal finance courses. These reasons make it plausible for the research to be carried out in these universities.

A total of 240 students responded to the research; however, after eliminating the incomplete responses and removing the outliers, 204 respondents were chosen for further analysis (Figure 3). In the data collection, self-administered questionnaire surveys were employed. Data were collected offline between October and November 2019. In addition, a pilot study with 36 respondents was conducted prior to this study to assess the suitability of the research instruments.

Samples were selected using a convenience sampling technique. Ideally, a probability sampling technique would make the results more generalised. Unfortunately,

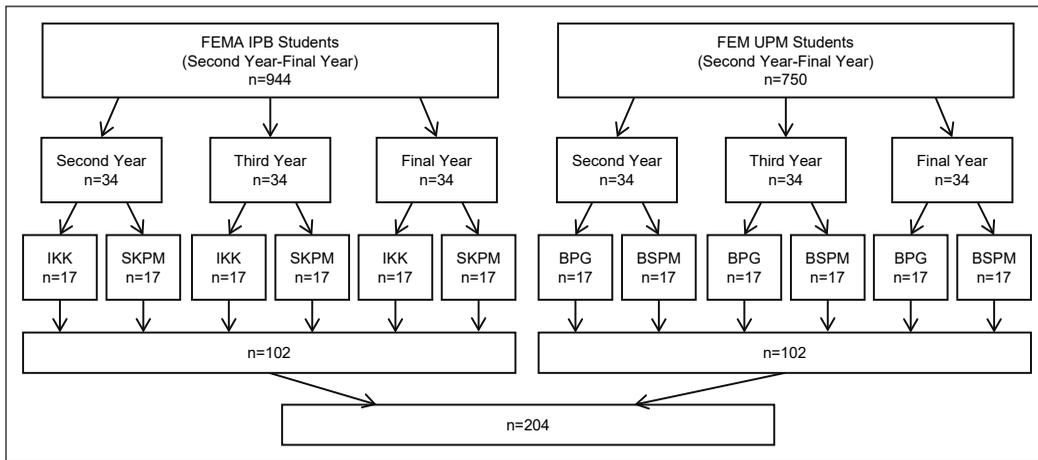


Figure 3. Research sampling method

this was unfeasible due to several limitations, such as different university academic schedules, complex admission requirements, and time constraints. Therefore, a convenience sampling technique was used for both countries. There were 34 students from each level of study; therefore, the total number of respondents was 102 students in each country. The first-year students were excluded from this study because they were still in the preparation stage. In IPB, a sample was selected from the Department of Family and Consumer Sciences (IKK) and the Department of Communication Sciences and Community Development (SKPM). Meanwhile, at UPM, a sample was chosen from the Department of Consumer Studies (BPG) and the Department of Human Development with Family Studies (BSPM).

Variables and Measurement

In this study, financial literacy refers to knowing and understanding financial concepts. Financial literacy was measured using the questionnaires developed by Sabri

and Aw (2019) and Lusardi and Mitchell (2011). The questionnaire contained seven domains: cash flow management, credit management, savings and investments, retirement planning, risk management, Islamic products, and taxation. In addition, The Three Big Questions by Lusardi and Mitchell (2011) was included in the savings and investments domain. There were 18 items with two answer options for the respondents, ‘true’ or ‘false’. Moreover, ‘1’ was applied for the correct answers, while ‘0’ for incorrect.

Financial attitude is described as the students’ opinions regarding money and financial matters. The Money Attitude Scale developed by Yamauchi and Templer (1982) measured financial attitude. There were four factors: power-prestige, retention-time, distrust, and anxiety, with 29 total items in the origin measurement. For this research, 17 items used a 4-point Likert scale, ranging from 1 (strongly disagree) to 4 (strongly agree), to measure financial attitude with a Cronbach’s alpha value of 0.682.

Financial behaviour in this study refers to how the students act concerning their finance. This study measures financial behaviour using a questionnaire adapted from Dew and Xiao (2013), Jacob (2002), and Mokhtar et al. (2020). There were four domains to measure financial behaviour: managing money, planning, choosing financial products, and staying informed. The Cronbach's alpha value was 0.807 with

16 total items. This study applied a 4-point Likert scale, ranging from 1 (never) to 4 (always).

The score of each variable was calculated by first adding the sum of each response to generate the overall score to measure levels of financial literacy, attitude, and behaviour. After that, the score was transformed into an index form using a formula as shown below:

$$Index = \frac{\text{obtained score} - \text{minimum score}}{\text{maximum score} - \text{minimum score}} \times 100$$

The index was then categorised according to the predefined class intervals. Following the computation of the index, the cut-off was decided by identifying the category. The variable indices were classified as low ($0 \leq \text{Financial Literacy Index} \leq 60$), moderate ($60 < \text{Financial Literacy Index} \leq 80$), and high ($\text{Financial Literacy Index} > 80$) (DEFINIT et al., 2013). Finally, it was applied to financial literacy, financial attitude, and financial behaviour variables.

An analysis via the Statistical Package for the Social Sciences (SPSS) 25.0 was utilised. Descriptive analyses were used to describe the patterns of responses. The demographic characteristics and variables were described as frequency, percentage, minimum, maximum, mean, and standard deviation. An independent sample t-test was conducted to compare the Indonesian and Malaysian students' financial literacy, financial attitude, and financial behaviour. Furthermore, multiple regression analyses were conducted to analyse students'

characteristics (age, GPA, monthly income), family characteristics (family income), financial literacy, and financial attitude on financial behaviour. Finally, a classic assumption test was performed to confirm that the data met the requirements of the regression analysis and that all criteria had been met.

Three regression models were developed. The independent variables were student and family characteristics, financial literacy, and financial attitude, while the dependent variable was financial behaviour (Table 2).

This methodology section showed the chosen study design, data collection, and rigorous methods employed in this research. Moreover, it provided rich quantitative data from surveys across undergraduate students in two universities in Indonesia and Malaysia. The following section will present the empirical data, covering the students' characteristics, financial literacy, attitude, and behaviour across both countries.

Table 2
Equation model of regression

Model	Equation
1	$Y_1 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots + \beta_8 X_8 + \varepsilon$
2	$Y_2 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots + \beta_8 X_8 + \varepsilon$
3	$Y_3 = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \dots + \beta_8 X_8 + \varepsilon$

Note. Y_1 = Financial Behaviour (all students) (index); Y_2 = Indonesian’s Students Financial Behaviour (index); Y_3 = Malaysian’s Students Financial Behaviour (index); X_1 = Student’s Age (years old); X_2 = Students’ GPA; X_3 = Students Pocket Money (Rp/RM); X_4 = Family Income (Rp/RM); X_5 = Financial Literacy (index); X_6 = Financial Attitude (index); β_{1-6} = Regression Coefficient; α = Constant; ε = Error

RESULTS

Demographic Characteristics

Across the 204 respondents from both countries, the number of female students was dominant (Table 3). The average age of the Malaysian students was 1.7 years older than the Indonesian students. Generally, undergraduate students range from 18 to 25 years old. In terms of their educational achievements during college, the GPA of Malaysian students was 0.18 higher than Indonesian students. The average GPA in Indonesia and Malaysia were 3.28 and 3.46, respectively.

In terms of students’ pocket money, half of the students in Indonesia had pocket money of less than or equal to Rp1,000,000¹. In contrast, a similar number of students in Malaysia had pocket money ranging from Rp1,000,000 to Rp1,500,000. Meanwhile, concerning family income, in the Indonesian context, the income level was classified into three categories based on the respondents’ average income, which were high, moderate, and low. The family income that exceeded Rp10,623,786,20 was considered ‘high’. Family income in the ‘middle

¹ 1 USD equal to approximately Rp14,000

Table 3
Profile of respondents

Variables	Indonesia	Malaysia
	(n=102) %	(n=102) %
<u>Gender</u>		
Male	20.6	16.7
Female	79.4	83.3
<u>Age</u>		
18	4.9	0
19	29.4	0
20	29.4	10.8
21	31.4	31.4
22	4.9	39.2
23	0	13.7
24	0	3.9
25	0	1.0
<u>GPA (maximum of 4.00)</u>		
≤ 2.50	0.9	0
2.51 - 3.00	17.7	12.7
3.01 - 3.50	63.7	47.1
3.51 - 4.00	17.7	40.2
<u>Students Pocket Money per Month (in Indonesian Rupiah (Rp/IDR))</u>		
≤ Rp1.000.000	50.0	16.7
Rp1.000.001 - Rp1.500.000	28.4	50.0
Rp1.500.001 - Rp2.000.000	16.7	16.7
≥ Rp2.000.0001	4.9	16.7
<u>Family Income per Month</u>		
Low	40.2	61.8
Middle	40.2	25.4
High	19.6	12.8

category' was between Rp4,279,703,96 and Rp10,623,786,20. For the Malaysians, income was classified into three categories: (1) bottom 40% (B40) (less than Rp14,824,000 [RM4,360]); (2) middle 40% (M40) (between Rp14,824,000 [RM4,360] and Rp32,708,000 [RM9,620]); and (3) top 20% (T20) (more than Rp32,708,000 [RM9,620]) (DOSM, 2016). Furthermore, about 19.6% of the Indonesian respondents came from high-income families, whereas almost 13% of the Malaysian respondents were from high-class society. More details about the respondents' characteristics are presented in Table 3.

Financial Literacy

In terms of financial literacy, this study showed that more than half of Indonesian students (53.9%) recorded a high score, and nearly half of Malaysian students scored moderately. However, only about a third of students in Malaysia recorded a high score on financial literacy. The details are provided in Table 4.

Overall, about four in ten respondents were categorised as moderate in terms of

their level of financial literacy, and a similar proportion was found for the high-level group (Table 4). The average financial literacy index was 80.17 for Indonesian students, 69.49 for Malaysian students, and 74.83 for the overall dataset. The independent sample t-test result showed that significant difference in financial literacy between the Malaysian and Indonesian students ($p < 0.01$). The average financial literacy of Malaysian students was 10.67 lower than Indonesian students.

Table 5 compares average scores in each domain of financial literacy domain amongst Indonesian and Malaysian students. Indonesian students recorded a higher score (85.29) in terms of credit management knowledge than Malaysian students (73.53). Meanwhile, Indonesian students' average score on savings and investments was 10.5 higher than Malaysian students. Similarly, Indonesian students recorded higher scores than Malaysian students in terms of knowledge about Islamic products and taxation. After running the independent t-test, this study found a significant difference in terms of knowledge of credit management

Table 4
The frequency, mean, standard deviation, and independent sample T-Test result of financial literacy

Level of Financial Literacy	Indonesia	Malaysia	Total
	(n=102)	(n=102)	(n=204)
	%	%	%
Low (≤ 60)	4.9	23.5	14.2
Moderate (61 - 80)	41.2	47.1	44.1
High (> 80)	53.9	29.4	41.7
Total	100.0	100.0	100.0
Mean \pm SD	80.17 \pm 11.71	69.49 \pm 16.18	74.83 \pm 15.07
P-Value	0.000***		

Note. ***p-value <0.01

($p < 0.01$), savings and investments ($p < 0.01$), Islamic products ($p < 0.01$), and taxation ($p < 0.01$). Even though some domains showed significant differences between the Indonesian and Malaysian students, other domains, such as cash flow management, risk management, and retirement planning, showed no significant differences ($p > 0.10$). In the cash flow management domain, the average score for Indonesian students was 93.63 and for Malaysian students was 95.59. The average score on knowledge about retirement planning for the Indonesian and Malaysian students was 70.10 and 63.24, respectively. Meanwhile, in terms of knowledge about risk management, the average score was 61.76 for Indonesian students and 58.82 for Malaysian students.

Generally, the Indonesian students scored higher in almost all domains of financial literacy, namely credit management, savings and investments, retirement planning, risk management, Islamic products, and taxation. Meanwhile, Malaysian students knew better about cash flow management than Indonesian students.

Financial Attitude

This study showed that the Indonesian and Malaysian respondents were more likely to have a poor financial attitude, with seven in ten Indonesians in this category and half of the Malaysian respondents in this area. Overall, about 62.7% of the respondents were categorised as poor in financial attitude. Only 4% of respondents had a good financial attitude, as indicated by their high-level index score. The average financial attitude index was 55.47 for Indonesian students, 60.89 for Malaysian students, and 58.18 for the overall dataset. The unpaired t-test result showed a significant difference between Malaysian and Indonesian students ($p < 0.01$). Malaysian students' average financial attitude index was 5.42, higher than Indonesian students. Table 6 describes the category of financial attitudes amongst undergraduate students for both Indonesian and Malaysian students.

Table 7 compares financial attitudes amongst Indonesian and Malaysian university students. Overall, Malaysian students recorded a higher score in

Table 5
Mean and independent sample T-Test results of financial literacy based on each domain

Domains	Indonesia	Malaysia	P-Value
	Mean	Mean	
Cash Flow Management	93.63	95.59	0.413
Credit Management	85.29	73.53	0.008***
Saving and Investment	79.69	69.18	0.000***
Retirement Planning	70.10	63.24	0.131
Risk Management	61.76	58.82	0.670
Islamic Products	72.06	53.92	0.000***
Taxation	90.69	67.65	0.000***

Note. **p-value < 0.05; ***p-value < 0.01

Table 6
The frequency, mean, standard deviation, and independent sample T-Test result of financial attitudes

Level of Financial Attitude	Indonesia (n=102)	Malaysia (n=102)	Total (n=204)
	%	%	%
Poor/Low (≤ 60)	73.5	52.0	62.7
Moderate (61 - 80)	26.5	40.2	33.3
Good/High (> 80)	0	7.8	4.0
Total	100.0	100.0	100.0
Mean \pm SD	55.47 \pm 7.76	60.89 \pm 9.84	58.18 \pm 9.25
P-Value	0.000***		

Note. ***p-value <0.01

Table 7
Mean and independent sample T-test result of financial attitudes based on each domain

Domains	Indonesia	Malaysia	P-Value
	Mean	Mean	
Power-Prestige	36.60	46.07	0.000***
Retention Time	62.65	63.49	0.659
Distrust	57.08	63.94	0.004***
Anxiety	55.88	65.19	0.000***

Note. ***p-value <0.01

all domains than Indonesian students. Regarding the power-prestige domain, the average score was 36.60 for Indonesian students and 46.07 for Malaysian students. Meanwhile, for the distrust domain, the average score for Malaysian students was 6.86, higher than the average score for Indonesian students. Malaysian students scored 9.31 higher on the average index in terms of anxiety.

After running the independent t-test, this study found a significant difference in terms of the power-prestige domain ($p < 0.01$), distrust ($p < 0.01$), and anxiety ($p < 0.01$). However, only the retention-time domain showed no significant difference ($p > 0.10$), and the average score for the Indonesian and

Malaysian students was 62.65 and 63.49, respectively.

Financial Behaviour

Table 8 shows that the respondents in this study were more likely to score low on the level of financial behaviour, which was recorded by 76.5% of Indonesian students, 50.9% of Malaysian students, and 63.7% for the overall dataset. The average financial behaviour indices for Indonesian students, Malaysian students, and the overall dataset were 52.81, 58.00 and 55.41, respectively. The independent sample t-test result showed a significant difference between Malaysian and Indonesian students ($p < 0.01$). The average financial behaviour of Malaysian

students was 5.18 higher than Indonesian students.

The comparison of financial behaviour between the Indonesian and Malaysian students is displayed in Table 9. Regarding the planning ahead domain, the average score was 44.77 for Malaysian students and 34.42 for Indonesian students. While, for the domain of staying informed, the average score for Malaysian students was 20.92 higher than Indonesian students. Overall, Malaysian students had a higher score in all domains than Indonesian students, except in the choosing product’s domain. After running the independent t-test, this study found a significant difference in terms of the planning ahead domain ($p < 0.01$) and

staying informed domain ($p < 0.01$). On the other hand, there were no significant differences ($p > 0.10$) in the managing money and choosing products domains. In the managing money domain, the average score for Indonesian students was 59.43 and for Malaysian students was 60.70. Meanwhile, both the Indonesian and Malaysian students had an equal average score of 68.73.

The Influence of Students and Family Characteristics, Financial Literacy, and Financial Attitude Towards Financial Behaviour

According to Table 10, the regression model for all the respondents’ characteristics, financial literacy, and financial attitude influences was significant, explaining 21.1%

Table 8
The frequency, mean, standard deviation, and independent sample T-test result of financial behaviour

Level of Financial Behaviour	Indonesia	Malaysia	Total
	(n=102)	(n=102)	(n=204)
	%	%	%
Low (≤ 60)	76.5	50.9	63.7
Moderate (61 - 80)	22.5	43.1	32.8
High (> 80)	1.0	6.0	3.5
Total	100.0	100.0	100.0
Mean \pm SD	52.81 \pm 10.80	58.00 \pm 14.51	55.41 \pm 13.02
P-Value	0.004***		

Note. ***p-value < 0.01

Table 9
Mean and independent sample T-test result of financial behaviour based on each domain

Domains	Indonesia	Malaysia	P-Value
	Mean	Mean	
Managing Money	59.43	60.70	0.557
Planning Ahead	34.42	44.77	0.000***
Choosing Products	68.73	68.73	1.000
Staying Informed	30.06	50.98	0.000***

Note. ***p-value < 0.01

of the total variance in financial behaviour (*Adjusted R² = 0.211, F = 10.046, p < 0.01*). This value showed that 21.1% of the undergraduate students' financial behaviour was influenced by the variables examined in this study. Other unexamined factors influenced the remaining 78.9%.

In general, financial literacy had a negative effect on financial behaviour ($\beta = -0.169, p < 0.05$). However, despite the negative effect of financial literacy on financial behaviour, the effect of financial attitude on financial behaviour showed different results. Financial attitude significantly influenced financial behaviour amongst undergraduate students ($\beta = 0.386, p < 0.01$). Meanwhile, age, GPA, students' pocket money, and family income did not affect financial behaviour amongst all the undergraduate students.

The regression model for Malaysian students' financial literacy and financial attitude influences was significant, explaining 16.2% of the total variance in financial behaviour (*Adjusted R² = 0.162,*

F = 4.249, p < 0.01). This value showed that 16.2% of the Malaysian students' financial behaviour was influenced by the variables examined in this study. Other unexamined factors influenced the remaining 83.8%. The financial attitudes amongst Malaysian students had a significant positive effect on financial behaviour ($\beta = 0.352, p < 0.01$). However, this significant effect was not valid for financial literacy. The results showed that financial literacy had no significant effect on Malaysian students' financial behaviour. Furthermore, there was no effect of age, GPA, students' pocket money, and family income on financial behaviour amongst all Malaysian students.

Meanwhile, the Indonesian students' regression model showed that Indonesian students' influences on financial literacy and financial attitude were significant, explaining 19.7% of the total variance in financial behaviour (*Adjusted R² = 0.197, F = 5.128, p < 0.01*). This value showed that 19.7% of the financial behaviour amongst Indonesian students was influenced by

Table 10
Comparison of multiple regression analyses between Indonesian, Malaysian, and total respondents

Variables	Indonesia		Malaysia		Total	
	β	Sig.	β	Sig.	β	Sig.
Age	-.016	.859	.093	.328	.052	.462
GPA	.165	.093	-.101	.321	.011	.874
Students Pocket Money	.153	.139	.025	.827	.017	.817
Family Income	-.069	.494	-.055	.627	-.055	.475
Financial Literacy	-.244	.015**	-.096	.340	-.169	.017**
Financial Attitude	.349	.000***	.352	.000***	.386	.000**
Adjusted R square	.197		.162		.211	
F	5.128		4.249		10.046	
Sig	.000		.001		.000	

Note. **p-value < 0.05; ***p-value < 0.01

the variables examined in this study. The remaining 80.3% was influenced by other unexamined factors, such as motivation, locus of control, lifestyle, peer group, and media. Unlike the Malaysian students, financial literacy and financial attitude had significant effects on financial behaviour amongst Indonesian students. Financial literacy was found to be negative ($\beta = -0.244$, $p < 0.05$), while financial attitude had a significant influence on financial behaviour ($\beta = 0.349$, $p < 0.01$). Similar to other models, no significant impact was found in terms of age, GPA, students' pocket money, and family income on the financial behaviour of Indonesian students.

In general, the findings indicated that students' financial literacy, attitude, and behaviour levels vary across countries. Financial literacy levels were moderate; however, they were less likely to have good financial attitudes and behaviour. This study revealed that Indonesian students outperformed Malaysian students in financial literacy, while Malaysian students were better in financial attitude and behaviour. According to the multiple regression analysis, the driver of financial behaviour in all models was financial attitude. In contrast, financial literacy had a negative effect on financial behaviour amongst the respondents, except in Malaysia. The effects of student characteristics factors, such as age, GPA, pocket money, and family wealth, on financial behaviour, were not significant. The following section will elaborate on the research findings to gain a deeper understanding and discuss the significance of the results.

DISCUSSIONS

The empirical results from this study revealed some interesting findings. Firstly, Indonesian students surpass Malaysian students in financial literacy, whereas Malaysian students exceed Indonesian students in terms of financial attitude and behaviour. The majority of Malaysian students were categorised as having a moderate financial literacy and were only good at understanding cash flow management. It is consistent with Idris et al. (2013), who found that most young individuals had a moderate to a high level of financial literacy. Malaysian students scored poorly on topics related to insurance and savings (Yahaya et al., 2019). In terms of financial attitude and behaviour, Malaysian students performed better than Indonesian students, even though they had a moderate financial attitude and a low level (poor) of financial behaviour. According to Yong et al. (2018), many young Malaysians were affected by a lack of financial literacy and improper financial management practices. Budgeting, practising living within their means, regular expenditure monitoring, the habit of savings and preparing for old age, and unforeseen expenses should all be instilled amongst Malaysians. In addition, Malaysian adolescents experience financial difficulties due to high-cost borrowings, personal loans, and credit card borrowings (Asian Institute of Finance, 2018). They live beyond their means due to a lack of self-control (Loke, 2015). In this study, the Indonesian students were classified as having a high level of financial literacy

and a moderate level of financial attitude, consistent with Susan and Djajadikerta's (2017) findings. A survey of 200 Telkom University students on financial behaviour conducted by Amanah et al. (2016) found that their financial management behaviour was poor because they were more concerned with wants rather than needs, and they sometimes performed poor credit management.

This study found no significant effect of the students' characteristics (age, GPA, and students' pocket money) and family income on financial behaviour across all the respondents. The findings were similar to Laily's (2013) study, which found that gender, age, academic ability, and work experience were not proven to correlate with students' financial behaviour. Ramasawmy et al. (2013) also revealed that gender, age, and income did not affect financial literacy. In terms of gender, Shaari et al. (2013) found similar findings. One plausible reason is that nowadays, males and females have equal opportunities to gain knowledge, access education, and manage income. In addition, Herdjiono and Damanik (2016) mentioned that income did not influence financial management.

Regarding the effect of financial literacy on financial behaviour, this study indicated a significant negative effect on Indonesian students. It is similar to a previous study by Soraya et al. (2021), while for Malaysian students, the regression model showed no significant effect. Previous research supported the findings, whereby having sound financial literacy does not

automatically lead to better financial behaviour (Nababan & Sadalia, 2012). Johan (2021) argued that changing behaviour involves a complex process and usually requires a long period to form a new positive behaviour. Factors such as motivation, self-regulation, and peer groups also play a role in forming a behaviour (Fenton-O'Creevy et al., 2018; Khoirunnisaa & Johan, 2020; Putri & Simanjuntak, 2020; Schiffman & Kanuk, 2010). Especially in the period of age transition, as experienced by the university students, the influence of peer groups could lead to some specific behaviour, including unfavourable ones.

Indeed, financial knowledge is important, but knowledge alone is insufficient to shape good behaviour. Higher financial knowledge is not always followed by good financial behaviour. Students might realise that managing cash flow, saving money, managing credit, managing risk, and paying taxes is important. However, even though they have good knowledge, it turns out that they do not necessarily practise it in their daily lives. It can be caused by other factors, such as a costly lifestyle or a peer group that drives them to avoid wiser choices. In Indonesia, the consumptive lifestyle fosters unfavourable financial habits, such as a lack of savings and investments and budgeting for the future (Ameliawati & Setiyani, 2018). Generally, those with good financial knowledge are more likely to make informed financial judgments and can utilise skills to prevent poor financial behaviour, including impulsive spending (Sabri & Aw, 2019). Additionally, Shinta

and Lestari (2019) argued that individuals with a healthy lifestyle are more likely to have effective financial behaviour. Today, it is easier for individuals to become impulsive buyers, for example, with increasingly widespread online shopping (ease of shopping everywhere, and supported by endless advertising or promotions), the ease of using credit cards, and the growth of 'buy now pay later' facilities. The lack of skills would increase the possibility of mismanaging money.

However, the study's findings amongst Malaysian students were aligned with Yahaya et al. (2019), who found no significant association between financial literacy and financial behaviour amongst Malaysian students. While financial knowledge is necessary, it was discovered that it is not enough to lead to good behaviour. It also follows Herdjiono and Damanik (2016), who found that financial knowledge did not influence financial behaviour. Consumer and Iramani (2013) also found that financial literacy had no direct influence on financial behaviour, while the locus of control mediated the indirect effect of financial literacy on financial behaviour. From the findings in this study, whether they were financially literate or not, students will behave as they desire, whether the results are positive or negative. Further research is needed to analyse more factors related to internal factors, such as self-control or self-efficacy. A major factor influencing consumer behaviour is self-efficacy, which is having the confidence and the ability to deal with a situation without being overwhelmed (Herawati et al., 2018). Self-

efficacy influences attitude and behaviour in students attempting to reach their goals, which can also be applied to financial behaviour.

This paper contributed to the literature in several aspects. Firstly, the current literature regarding the drivers of financial behaviour was extended amongst university students using a comprehensive measure of financial literacy, attitude, and behaviour. This paper goes beyond the existing literature by comparing the effect of financial literacy, attitude, and behaviour in two Southeast Asia countries: Indonesia and Malaysia. Most of the previous studies only examined one single country. Indonesia and Malaysia are interesting cases, as both are neighbouring countries and are dominated by young individuals in their population pyramid.

This study contributed to the existing literature by underlining the significance of financial attitude in changing financial behaviour. This study revealed that financial attitude positively influences financial behaviour amongst undergraduate students, both in Indonesia and Malaysia. A good financial attitude could lead to better behaviour in managing finances. Vice versa, those that are less engaged with a positive attitude toward money tend to be less careful when purchasing things that might be unnecessary and might think that money is a source of happiness. Therefore, they will not worry, even though it might risk their financial security. This research is in line with previous studies conducted by Ameliawati and Setiyani (2018), Herdjiono and Damanik (2016), and Yahaya et al. (2019). A positive attitude towards money

could positively impact students' financial behaviour, such as timely bill payments, savings and investments, and the ability to use credit cards responsibly. However, this study also revealed that students experienced poor financial attitudes, requiring special attention. Many young individuals tend to lack proper financial planning. Therefore, a dedicated effort is required to enhance students' attitudes by encouraging and providing sufficient information to students on the importance of effective money management (Yong et al., 2018).

CONCLUSION AND RECOMMENDATIONS

By comparing financial literacy, attitude, and behaviour across undergraduate students in Indonesia and Malaysia, this study has documented new empirical data and relevant findings. Indeed, developing positive financial behaviour will be increasingly important for undergraduate students, especially those who live apart from their parents. They should be able to wisely manage their finances, as it can further support financial security in the future. To the authors' best knowledge, this study is one of the first attempts to compare undergraduate students' financial literacy, attitude, and behaviour across two countries in Southeast Asia, Indonesia and Malaysia. This study revealed that financial literacy among undergraduate students in Indonesia and Malaysia was moderately high. In other words, they possess a good understanding of money matters. By contrast, financial attitude and financial behaviour levels

demonstrated significantly lower results. It can be inferred from this data that students tend to be less engaged with positive attitudes toward money, such as making non-essential purchases, and tend to be unwise when managing their finances. In addition, many students reported poor financial behaviour and attitude, so integrating financial literacy and attitude towards behaviour will be crucial.

The regression analysis performed as part of this study showed that financial literacy has a negative effect on financial behaviour, especially for Indonesian students. At the same time, there was no significant impact on Malaysian students. Where financial attitude was concerned, this research revealed that financial attitude has a positive effect on financial behaviour amongst both Indonesian and Malaysian undergraduate students. Furthermore, the findings revealed that several students reported poor financial behaviour despite being financially literate. All stakeholders should consider it further in the future to avoid long-term effects that can negatively impact wider economic growth. In addition to stimulating the cognitive area, financial education should include affective aspects, as these demonstrate positive impacts on financial behaviour. Building these behavioural patterns is not achieved instantaneously; rather, time and effort are required to shape individuals capable of responsibly managing their finances. This study suggests that financial socialisation should begin during childhood. Policymakers can develop programmes and interventions which encourage parents to have frequent discussions with their

children about financial matters throughout childhood, such as the importance of savings, having emergency funds, avoiding unsecured loans, and impulsive buying.

The highlighted results demonstrate the poor financial behaviour of undergraduate students. While personal finance courses can help students improve their financial behaviour, this study also suggests including practical lessons in order for students to implement the theories they learn in class, for example, calculating interest rates, taxation, and budgeting. In addition, students should be encouraged to start saving and investing in springing forth positive financial behaviour and securing their financial future. Moreover, students should also be taught the importance of exercising caution before making financial decisions to reduce the risk of scams and frauds. It can include, for example, reading the terms and conditions carefully before signing a contract.

This study has shown interesting findings that financial literacy has a negative effect on financial behaviour. However, it is expected that other factors may also drive financial behaviour. Researchers may investigate other variables that can influence financial behaviour, such as lifestyle, motivation, self-efficacy, psychological factors, and the influence of peers, media, and family.

LIMITATIONS

One of the limitations of this study was that it employed a convenience sampling technique, which implied that the results

could not necessarily be generated throughout the broader population. Future studies are suggested to use a more robust sampling technique, followed by in-depth interviews. Future studies are also expected to be conducted in diversified locations around Indonesia and Malaysia as well as in other countries to provide a more holistic picture of financial behaviour. It is also suggested to involve more samples to obtain further precise results.

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