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E-Wallet Usage and Its Influence on Financial Literacy, Spending Behavior, Stress, and Well-Being Among Malaysian Undergraduates

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ABSTRACT

The rise of digital payment platforms such as Touch ‘n Go, Boost, and GrabPay has transformed the way Malaysian undergraduates manage their finances, raising questions about their influence on financial literacy, spending behavior, stress, and well-being. This study investigates these relationships using a quantitative, cross-sectional design involving 200 students from public and private universities. Data analyzed through SPSS 26 included descriptive, correlation, and multiple regression analyses. The model predicting financial well-being was significant ($F = 82.193$, $p < 0.001$) with $R^2 = 0.628$. Results showed that e-wallet usage significantly improved financial literacy ($\beta = 0.559$, $p < 0.001$) but had no direct effect on spending behavior, financial stress, or financial well-being. Financial literacy enhanced spending behavior ($\beta = 0.746$, $p < 0.001$) and financial stress ($\beta = 0.757$, $p < 0.001$), and it was the strongest predictor of financial well-being ($\beta = 0.751$, $p < 0.001$). Spending behavior also increased financial stress ($\beta = 0.145$, $p < 0.05$). Financial stress and spending behavior, however, did not significantly predict financial well-being. These findings highlight that financial literacy mediates the benefits of digital payment adoption, emphasizing the need for financial education to strengthen responsible e-wallet use and student financial well-being.

Keywords: E-Wallet Usage; Financial Literacy; Financial Stress; Financial Well-Being; Spending Behavior

INTRODUCTION

Malaysian financial systems are experiencing a quick transformation through financial technology adoption that includes widespread e-wallet adoption. Malaysian undergraduates incorporate digital payment platforms such as Touch 'n Go, Boost, and GrabPay into their daily activities because they provide quick transactions with mobile integration and easy access. With Malaysia's ongoing push toward a cashless society intensified during the COVID-19 pandemic, undergraduates, as digital natives, are leading this transformation (Koay et al., 2024). E-wallets provide convenience, which changes student finance patterns to affect their buying choices and budget planning alongside their money management skills.

However, users remain uncertain about how e-wallets alter their monetary habits and their sustained management of funds. The abstract nature of digital money can lead to impulsive spending and reduce awareness of financial limits (Lee et al., 2022a). Young consumers are particularly vulnerable to overspending due to the seamlessness of e-wallet transactions (Amron et al., 2024). The seamless nature of this transaction system makes customers lose their sense of money loss, which leads them to make many seemingly unimportant purchases that stack up into significant financial consequences. Financial literacy acts as a crucial factor in interpreting these behavioral developments. Despite federal government efforts to promote financial education throughout Malaysia, several student populations remain deficient in both financial learning and self-regulating abilities. University students' continued use of e-wallets is influenced more by perceived usefulness and ease of use than by informed financial awareness (Yeoh, 2022). The intention to use digital wallets does not always correlate with responsible financial behavior, particularly among students who do not actively track their expenses or set financial goals (Sultana et al., 2023).

Student financial well-being is negatively impacted by the lack of proper financial discipline. An increase in e-wallet usage among Malaysian undergraduates is linked to heightened financial stress, especially when combined with poor money management (Koay et al., 2024). Financial stress can significantly affect a student's academic performance, mental health, and overall life satisfaction. It shows that e-wallet features such as perceived enjoyment, visual appeal, and satisfaction contribute to impulsive purchases among Gen Y and Gen Z Malaysians (Lee et al., 2022b). According to the Stimulus-Organism-Response (S-O-R) model, the e-wallet application serves as an environmental trigger that creates emotional states that drive people to make impulsive choices (Zhu et al., 2020). Students who lack adequate financial awareness, together with weak control systems, are prone to excessive spending and bad financial practices that boost their financial pressure.

Although various studies have explored the adoption of e-wallets using models such as the Technology Acceptance Model (TAM) and Technology Continuance Theory (TCT), much of the current literature focuses on usage intention and system usability, rather than behavioral and psychological outcomes (Amron et al., 2024). For example, research has yet to clarify the effects that sustained smartphone usage has on college students' financial conduct and money management capabilities, as well as their anxiety levels and overall health outcomes. As college students establish their financial autonomy, these behaviors produce long-lasting consequences.

Therefore, the current research investigates the relationship between e-wallet usage and its effect on financial literacy and spending behaviors, and financial stress and financial wellness for Malaysian undergraduate students. The research looks at how these variables influence each other to discover advantages as well as disadvantages through digital payment systems. This study gains its importance through its findings, which enable academic institutions to create specialized financial education programs for student success. This study stands out because it combines research on technological interaction with behavioral finance data and psychological effects. The research outcomes aim to generate valuable contributions to both organizational behavior fields and financial education practices in Malaysia.

LITERATURE REVIEW

E-Wallet Usage

An e-wallet is an application that facilitates users to make transactions via a mobile device without the need to use cash. Boost, GrabPay, and Touch ‘n Go eWallet are popular among Malaysians. Digital wallets allow users to be convenient, safe, and access many banking and merchant systems (Ariffin et al., 2021). Due to government incentives, along with cashback and discounts, students are using mobile payments much more.

Because of improvements in technology, e-wallets are being noticed by and are now easier for young people to understand and try out (Hoo et al., 2023). At the same time, a lot of students are gaining financial knowledge because of school programs. With more knowledge of finance and being tech-savvy, students might use e-wallets to control their finances as well as for convenient purchases. With an e-wallet, it becomes easy to track your spending and control your finances. The Malaysian government supports cashless payments, which helps students understand how digital payments work. In this way, undergraduates may develop better money management skills by using e-wallets.

Many students use mobile wallets to monitor their spending in real time, helping them with budgeting (Kaim et al., 2024). At the same time, their accessibility can make people buy things they did not plan for. While e-wallets can support better financial management, they may also encourage overspending, as found in a study about Gen-Y and Gen-Z consumers in Malaysia that found people enjoyed using e-wallets, and this enjoyment increased their tendency to buy things on impulse (Lee et al., 2022b). So, e-wallets may help students budget, but it is up to the users to make sure they do not overspend.

Using e-wallets has made students worry about money matters. Using e-wallets for instant funding means people may end up in financial trouble if they are not responsible. IF students find it hard to manage their money, they might get nervous whenever their expenses go beyond what they can afford (Dango et al., 2024). Not having to spend cash could make it easier to overspend. Some students miss out on the spending summary, alerts, and transaction history tools because they aren’t fully aware of how to use them. So, the way someone uses e-wallets and the effects on financial stress partly depend on the choices, knowledge, and use of available digital resources.

Also, the influence of e-wallets is not limited to personal spending and stress related to money. According to Khan and Surisetti (2020), having e-wallets is thought to help improve financial well-being. According to what was mentioned, e-wallets may support budgeting and help users notice their spending habits, which can benefit their finances. For example, the ability to monitor transactions as they happen and classify spending can help users handle their finances well. It means that using e-wallets properly assists students in making routine financial choices and also supports their financial future.

H1: E-wallet usage has a significant effect on spending behavior among Malaysian undergraduates.

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H2: E-wallet usage has a significant effect on financial stress among Malaysian undergraduates.
H3: E-wallet usage has a significant effect on financial well-being among Malaysian undergraduates.
H4: E-wallet usage has a significant effect on financial literacy among Malaysian undergraduates.

Financial Literacy

When someone has financial literacy, they know the worth of money and how to gain the most from how they use it (Kadoya & Khan, 2019). Among its elements are financial products, risk management, and long-term financial planning, which are necessary for reaching financial stability. During the digital finance age, being financially literate plays a big role in the decisions individuals take regarding their money, their stress around money matters, and keeping their finances in order (Rahman et al., 2021).

Financial literacy helps influence the way individuals handle their spending (Din & Rashid, 2023). Those who have knowledge about finance tend to buy what they need after considering it, avoid impulse purchases, and ensure that their main expenses come first (Perdana et al., 2024). People who are financially literate use various tools to plan their budgets, watch their expenses, and know how important money is, which makes it easier for them to manage their finances. Alternatively, if someone lacks financial literacy, they can end up spending more, lacking money management skills, and depending more on credit, which is common among students trying to become financially independent.

Having financial literacy skills may lessen stress because people manage their finances more successfully. If learners are unaware of basic money principles, they may find themselves with debt, struggle to budget, and this can make their financial life more stressful. People who understand finance well are likely to budget, save money, and better manage their finances. Therefore, they manage their finances more easily.

A higher level of financial literacy can shape a person's finances positively when they can make choices that are good for their long-term financial plans (Lone & Bhat, 2022). Knowing more about saving, budgeting, and income protection allows individuals to keep their finances steady and stop doing anything that could damage their future earnings. Being well-prepared financially boosts people's financial health. People who are financially literate usually deal with less financial stress since they adopt better financial practices and behaviors (Rahman et al., 2021).

H5: Financial literacy has a significant effect on spending behavior among Malaysian undergraduates.
H6: Financial literacy has a significant effect on financial stress among Malaysian undergraduates.
H7: Financial literacy has a significant effect on financial well-being among Malaysian undergraduates.

Spending Behavior

Spending behavior describes the act of expending money so that needs and wants can be met (Bugheanu & Străchinaru, 2020). Personal income, someone's needs, what they like, how they feel, and how much they know about finances all play a role in someone's finances. Following a budget and paying attention to necessary expenses are important for good spending, whereas poor spending habits may encourage excess spending on things that are not needed.

Financial stress and financial well-being are impacted by how people handle their money. Anyone who tends to make unplanned purchases often has trouble handling their expenses and ends up with more debt, so they feel more financial stress (Abrantes-Braga & Veludo-De-Oliveira, 2020). On the other hand, budgeting, putting money into savings, and smart spending encourage a stable and controlled financial life.

H8: Spending behavior has a significant effect on financial stress among Malaysian undergraduates.
H9: Spending behavior has a significant effect on financial well-being among Malaysian undergraduates.

Financial Stress
When major parts of the financial sector run the risk of large losses and people have a higher sense of uncertainty and anxiety, it is known as financial stress (Butters & Brave, 2025). Experiencing work-related stress results in negative mental consequences, including depression and anxiety, and impairs a person's well-being. A study done by Nasir et al. (2025) revealed that high financial stress among young Americans is connected to greater psychological distress.

Dealing with financial stress makes it harder for people to take care of their finances, which results in worry and a lower quality of life. In their study, Zhang and Chatterjee (2023) discovered that people with high incomes also suffer from poor job performance and decreased psychological strength when facing financial stress, caused by factors such as inflation and an unstable economy. It is also shown in the study that people may turn to harmful strategies to manage their finances, which only makes the situation worse and affects overall well-being.

H10: Financial stress has a significant effect on financial well-being among Malaysian undergraduates.

Financial Well-Being
Financial well-being was recently introduced to measure a person's current financial views and their expectations for the future (Collins & Urban, 2021). To succeed in personal finance means being able to handle daily finances well, handle surprising changes, and accomplish your financial dreams, all of which help with life satisfaction. For Malaysian undergraduates, the state of their finances is shaped by their knowledge of finances, the way they spend, and how much stress they experience related to money. When these factors are managed better, students' financial, school, and mental health can all improve.

Conceptual Framework
Figure 1. Research Framework

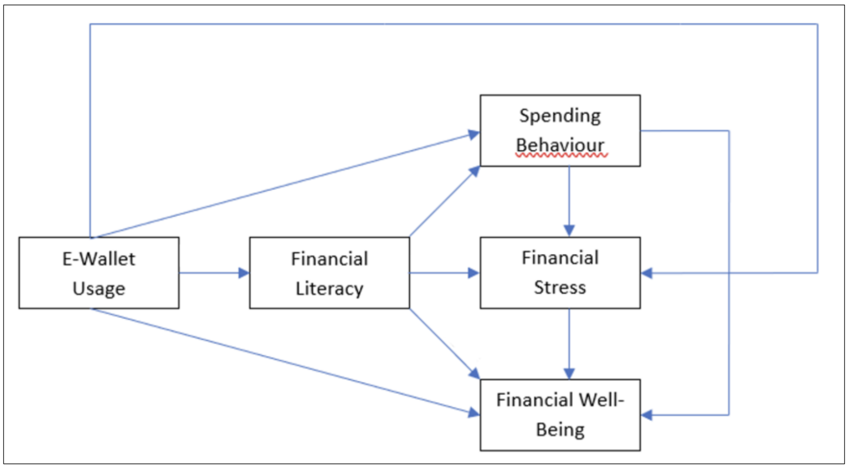

Figure 1 presents the conceptual framework illustrating the hypothesized relationships among e-wallet usage, financial literacy, spending behavior, financial stress, and financial well-being, highlighting the direct and indirect pathways through which digital financial engagement influences students' overall financial outcomes.

RESEARCH METHOD

Sample and Procedure

This study, which explores the relationships among e-wallet usage, financial literacy, spending behavior, financial stress, and financial well-being among Malaysian undergraduates, adopted a quantitative, cross-sectional survey design. The target population comprised undergraduate students from various public and private universities in Malaysia. Due to time and resource constraints, the study employed a convenience sampling method, allowing for easy access to participants who were readily available and willing to participate. The main criterion for participation was that respondents must have used e-wallets within the past six months, ensuring relevance and recent experience with digital payment platforms.

Data were collected using an online self-administered questionnaire created via Google Forms, which was distributed through digital channels, including WhatsApp, university portals, and student networks. This approach enabled broad outreach across different student communities, enhancing the diversity of the sample. The survey was conducted, and a total of 200 valid responses were collected, achieving the target sample size for statistical analysis. Participation was voluntary and anonymous, and the questionnaire was made available in both English and Bahasa Malaysia to cater to the linguistic preferences of Malaysian students.

Additionally, the collected data were analyzed using IBM SPSS Statistics 26, which provided comprehensive statistical outputs to support the examination of relationships among variables. Analysis methods included descriptive statistics to summarize the demographic data, correlation analysis to assess the strength of associations between variables, and multiple regression analysis to determine the predictive power of e-wallet usage, financial literacy, spending behavior, and financial stress on financial well-being. Reliability tests were also conducted to confirm the internal consistency of the measurement scales.

Measures

This research administered a seven-section questionnaire to measure the main variables employed in this study. All constructs, except demographic information, were assessed using a 5-point Likert scale, ranging from 1 (Strongly Disagree) to 5 (Strongly Agree).

This scale enabled respondents to indicate the degree to which they agreed or disagreed with each statement, ensuring consistency in interpretation.

E-Wallet Usage

A 5-item scale was adapted from Ariffin et al. (2021), Dango et al. (2024), Hoo et al. (2023), Kaim et al. (2024), and Lee et al. (2022a) to assess e-wallet usage among university students. The scale reported a Cronbach's alpha of 0.869. Participants responded to statements such as: I use e-wallets for various purposes (e.g., food and shopping); I find e-wallets more convenient than cash; I prefer using e-wallets over other payment methods; I feel confident using different e-wallet apps; I am familiar with using e-wallets in different situations.

Financial Literacy

A 5-item scale was adapted from Din & Rashid (2023), Kadoya & Khan (2019), Perdana et al. (2024), Rahman et al. (2021), and R & Vasudevan (2024) to assess financial literacy. The scale reported a Cronbach's alpha of 0.909. Items included: I understand how to manage my budget; I track my expenses regularly; I understand the importance of saving and investing; I make informed decisions before making purchases; I know how digital payments can impact my financial well-being.

Financial Attitudes

A 5-item scale was adapted from Rahman et al. (2021) and Kadoya & Khan (2019) to assess financial attitudes. The scale reported a Cronbach's alpha of 0.803. Statements included: I believe it is important to save money regularly; I think twice before spending on non-essential items; I feel anxious when I spend beyond my means; I try to avoid debt whenever possible; I consider long-term consequences before making financial decisions.

Spending Behavior

A 4-item scale was adapted from Abrantes-Braga & Veludo-De-Oliveira (2020) and Bugheanu & Străchinaru (2020). The scale reported a Cronbach's alpha of 0.867. Participants responded to statements such as: I often make impulse purchases through e-wallets; I tend to overspend when using e-wallets; I rarely plan my purchases and stick to my budget; I believe my spending habits have changed since I started using e-wallets.

Financial Stress

A 5-item scale was adapted from Butters & Brave (2025), Nasir et al. (2025), and Zhang & Chatterjee (2023). The Cronbach's alpha was 0.933. Statements included: I often feel anxious about my financial situation; I worry that I will not be able to afford basic necessities; I feel overwhelmed by my financial responsibilities; I am stressed when thinking about managing my money; I often feel uncertain about my financial future.

Financial Well-Being

A 5-item scale was adapted from Collins & Urban (2021) and Khan & Surisetti (2020) to assess perceived financial well-being. The scale reported a Cronbach's alpha of 0.914. Items included: I feel confident in managing my personal finances; I am able to meet my monthly financial obligations without difficulty; I have control over my day-to-day financial decisions; I feel financially secure about my future; I am satisfied with my current financial situation.

RESULTS

Table 1. Respondents' Profile Summary (N=200)

Category	Frequency	Percentage (%)

Gender		
Female	110	55
Male	90	45
Age Group		
18–20	32	16
21–23	155	77.5
24–26	11	5.5
Above 26	2	1
Race		
Chinese	92	46
Indian	17	8.5
Malay	87	43.5
Sikh	2	1
Yemeni	2	1
Student Status		
Local	195	97.5
International	5	2.5
Year of Study		
Year 1	30	15
Year 2	134	67
Year 3	20	10
Year 4	16	8
University Affiliation (Public or Private)		
INTI College	1	0.5
IPG Teknik	2	1
Monash University	1	0.5
Multimedia University	1	0.5
Polytechnic Sultan Abdul Halim Muadzam Shah	1	0.5
Sunway University	1	0.5
Taylor University	2	1
Universiti Malaysia Sarawak	1	0.5
Universiti Kebangsaan Malaysia	4	2
Universiti Malaya	8	4
Universiti Malaysia Perlis	1	0.5
Universiti Malaysia Sabah	1	0.5
Universiti Malaysia Terengganu	1	0.5
Universiti Pendidikan Sultan Idris	1	0.5
Universiti Putra Malaysia	4	2
Universiti Sains Malaysia	144	72
Universiti Sultan Zainal Abidin	1	0.5
Universiti Teknologi Malaysia	1	0.5
Universiti Teknologi MARA	4	2
Universiti Tun Hussein Onn Malaysia	1	0.5
Universiti Utara Malaysia	19	9.5
Monthly Allowance (RM)		
Below RM500	84	42
RM500–RM1,000	86	43
RM1,001–RM1,500	21	10.5
Above RM1,501	9	4.5

Table 1 shows the Cronbach's alpha coefficients for all variables, which range between 0.867 and 0.933. These values exceed the minimum reliability threshold of 0.70, confirming strong internal consistency for all constructs. This indicates that the measurement scales used for E-wallet usage, financial literacy, spending behavior, financial stress, and financial well-being were reliable for hypothesis testing. The high reliability levels validate the accuracy of the questionnaire items in capturing each construct. It also presents the demographic characteristics of the 200 respondents who participated in the study on e-wallet usage. In terms of gender, the sample consisted of 55% females (n = 110) and 45% males (n = 90), indicating a slightly higher representation of female participants. The age distribution shows that the majority of respondents were within the 21–23 age group (n = 155, 77.5%), followed by those aged 18–20 (n = 32, 16%), 24–26 (n = 11, 5.5%), and above 26 (n = 2, 1%), reflecting the typical age range for university students in Malaysia. In terms of race, the largest proportion of respondents were Chinese (n = 92, 46%), followed closely by Malay (n = 87, 43.5%), Indian (n = 17, 8.5%), and smaller representations of Sikh and Yemeni (n = 2, 1%), respectively. The majority of the participants were local students (n = 195, 97.5%), with only a small percentage being international students (n = 5, 2.5%), indicating that the findings primarily reflect the experiences of local undergraduates. In terms of year of study, the highest representation was from Year 2 students (n = 134, 67%), followed by Year 1 (n = 30, 15%), Year 3 (n = 20, 10%), and Year 4 (n = 16, 8%), suggesting a strong concentration of participation among second-year students.

Regarding university affiliation, a significant majority of respondents were from Universiti Sains Malaysia (USM) (n = 144, 72%), with Universiti Utara Malaysia (n = 19, 9.5%) and Universiti Malaya (n = 8, 4%) being the next most represented institutions, while other universities accounted for smaller proportions, reflecting the study's primary connection with USM. Finally, the monthly allowance data indicates that most respondents received a monthly allowance between RM500 and RM1,000 (n = 86, 43%), followed closely by those receiving below RM500 (n = 84, 42%), with smaller groups receiving RM1,001 to RM1,500 (n = 21, 10.5%) and above RM1,501 (n = 9, 4.5%), highlighting the typical financial capacity of undergraduate students, which may influence their e-wallet usage patterns.

Table 2. Descriptive Statistics, Cronbach's Coefficient Alpha, and Zero-order Correlations for All Study Variables

Variables		1	2	3	4	5
1	E-Wallet Usage	0.869				
2	Financial Literacy	0.690**	0.909			
3	Spending Behavior	0.403**	0.240**	0.867		
4	Financial Stress	0.309**	0.214**	0.689**	0.933	
5	Financial Well-Being	0.559**	0.777**	0.318**	0.310**	0.914**
Number of Items						
Mean		4.21	4.15	3.22	3.19	3.87
Standard Deviation		0.83	0.84	1.09	1.11	0.88

Note: N = 200; *p < 0.05, **p < 0.01, ***p < 0.001. The diagonal entries represent Cronbach's Coefficient Alpha.

Table 2 provides a comprehensive overview of the descriptive statistics, internal consistency reliability, and intercorrelations among the five main variables in this study: e-wallet usage, financial literacy, spending behavior, financial stress, and financial well-being. The table serves as a preliminary statistical validation of the model before conducting regression analyses.

The Cronbach's alpha coefficients, displayed along the diagonal, range from 0.867 to 0.933, which far exceeds the commonly accepted minimum value of 0.70. This indicates excellent internal reliability for all constructs, confirming that the items used to measure

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each variable are consistent and dependable. Specifically, financial stress (α = 0.933) and financial well-being (α = 0.914) demonstrate particularly high internal consistency, reflecting the robustness of these measurement scales.

Regarding descriptive statistics, the mean values for all variables range from 3.19 to 4.21, signifying generally moderate to high levels of agreement among Malaysian undergraduates toward the measured constructs. E-wallet usage records the highest mean (M = 4.21, SD = 0.83), suggesting that mobile payment systems are widely adopted and frequently used among respondents. Financial literacy (M = 4.15, SD = 0.84) also scores high, implying that most students possess a good understanding of financial concepts. In contrast, spending behavior (M = 3.22, SD = 1.09) and financial stress (M = 3.19, SD = 1.11) show relatively lower averages, indicating that students display moderate control over their expenditure and experience some degree of financial tension. Financial well-being (M = 3.87, SD = 0.88) falls slightly above the midpoint, reflecting a generally positive perception of financial satisfaction and stability among the participants.

The zero-order correlation matrix reveals significant and positive relationships across all variables at the $p < 0.01$ level. The strongest association is observed between financial literacy and financial well-being (r = 0.777), highlighting that individuals with greater financial knowledge are more capable of managing their finances effectively and achieving higher levels of financial satisfaction. Similarly, e-wallet usage correlates positively with financial literacy (r = 0.690) and financial well-being (r = 0.559), suggesting that exposure to digital financial platforms may enhance financial understanding and overall well-being. Meanwhile, the relationships between e-wallet usage and financial stress (r = 0.309) as well as financial stress and financial well-being (r = 0.310) are relatively weaker but still significant, implying that while financial technology adoption may influence emotional aspects of financial life, its effects are more complex and possibly mediated by other variables such as literacy and spending habits.

In summary, Table 2 demonstrates that the measurement instruments used in this study are both reliable and valid. The positive intercorrelations among all constructs support the theoretical proposition that digital financial behavior, literacy, and emotional responses are interconnected components of students' overall financial well-being. These findings provide a strong empirical foundation for the subsequent regression and mediation analyses, which aim to further disentangle the direction and magnitude of these relationships within the conceptual framework.

Table 3. Summary of Regression Analysis

	Variables	Financial Well-Being	Financial Stress	Spending Behavior	Financial Literacy
1	E-Wallet Usage	-0.022	-0.022	0.044	0.559***
2	Financial Literacy	0.751***	0.757***	0.746***	
3	Spending Behavior	0.074	0.145*		
4	Financial Stress	0.105			
R^2		0.628	0.622	0.604	0.312
F Value		82.193	107.482	150.468	89.919
Durbin-Watson Statistic		1.817	1.882	1.848	1.686

Note: N = 200; *p < 0.05, **p < 0.01, ***p < 0.001

Table 3 summarizes the regression analyses assessing the relationships among e-wallet usage, financial literacy, spending behavior, financial stress, and financial well-being. The model explaining financial well-being is statistically significant (F = 82.193, $p < 0.001$) with an R^2 of 0.628, indicating a strong explanatory power.

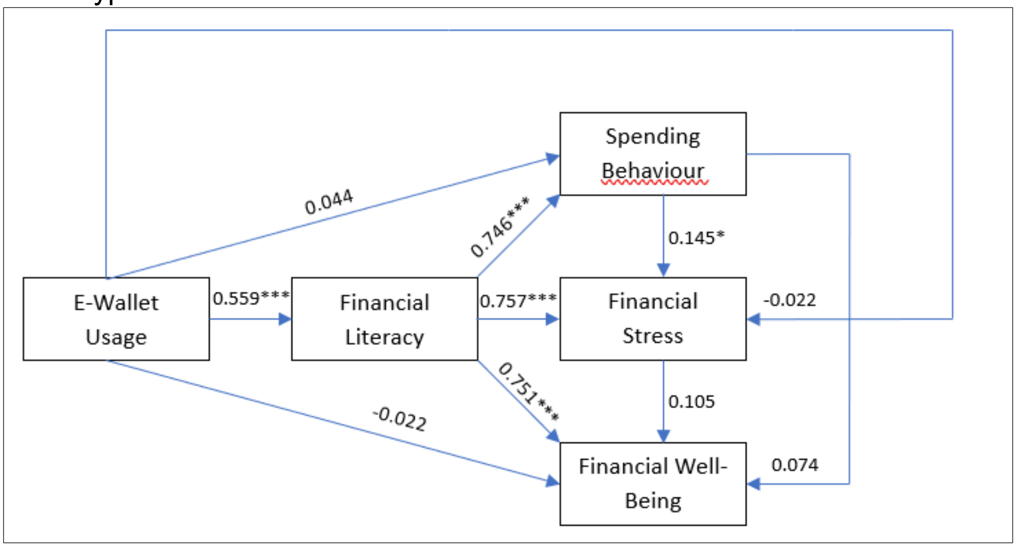
The results reveal that financial literacy (β = 0.751, $p < 0.001$) significantly enhances financial well-being, supporting H7, while spending behavior (β = 0.074, p = 0.213) and financial stress (β = 0.105, p = 0.191) show no significant effects, rejecting H9 and H10. E-wallet usage (β = –0.022, p = 0.278) also does not directly affect financial well-being, thus rejecting H3.

However, financial literacy (β = 0.746, $p < 0.001$) significantly improves spending behavior, supporting H5, and financial literacy (β = 0.757, $p < 0.001$) also increases financial stress, supporting H6. Spending behavior (β = 0.145, $p < 0.05$) positively affects financial stress, confirming H8. Additionally, E-wallet usage (β = 0.559, $p < 0.001$) significantly boosts financial literacy, supporting H4, but shows no significant influence on spending behavior (H1) or financial stress (H2).

In summary, five hypotheses (H4, H5, H6, H7, and H8) are supported, while the rest are rejected. The findings suggest that while e-wallet usage indirectly contributes to financial well-being through financial literacy, the benefits are maximized when users possess strong financial knowledge and maintain healthy spending control. Thus, financial education remains the key factor linking digital payment adoption to financial well-being.

Figure 2 illustrates the final structural model summarizing the regression results of this study. The figure visually represents the relationships among e-wallet usage, financial literacy, spending behavior, financial stress, and financial well-being among Malaysian undergraduates.

Figure 2. Hypothesized Model



DISCUSSION

E-Wallet Usage and Financial Literacy (H4 Supported; H1, H2, H3 Rejected)

The findings reveal that e-wallet usage significantly enhances financial literacy among Malaysian undergraduates (H4 supported). This aligns with Ariffin et al. (2021) and Hoo et al. (2023), who emphasized that digital payment adoption among young users encourages learning about budgeting, transaction management, and money tracking. The exposure to e-wallet interfaces, cashback systems, and transaction records makes students more financially aware and capable of monitoring their spending. The result also echoes Khan and Surisetti (2020), who argued that e-wallets can indirectly strengthen financial capability by improving awareness of spending habits.

However, e-wallet usage does not significantly affect spending behavior, financial stress, or financial well-being (H1, H2, and H3 rejected). This indicates that merely adopting e-wallets does not guarantee better financial management or reduced stress. As Lee et al. (2022b) found, e-wallet enjoyment can encourage impulsive buying, suggesting that technological convenience alone is insufficient for positive financial outcomes. Similarly, Dango et al. (2024) observed that irresponsible e-wallet use could cause overspending and financial anxiety. Hence, e-wallets serve as facilitators of literacy rather than direct determinants of behavioral or emotional financial outcomes.

Financial Literacy and Spending Behavior (H5 Supported)
The study confirms that financial literacy significantly improves spending behavior (H5 supported). Students who are financially literate are more cautious, avoid impulse purchases, and prioritize essential expenses, consistent with Din & Rashid (2023) and Perdana et al. (2024). Financial literacy enables individuals to utilize financial tools and budgeting methods effectively, contributing to rational decision-making and financial discipline. This result reinforces the notion that financial literacy forms the foundation for responsible consumption patterns.

Moreover, this finding validates Rahman et al. (2021), who stated that financial literacy equips individuals to manage their money more effectively in the digital era. Thus, higher financial literacy not only empowers undergraduates to use e-wallets wisely but also encourages prudent financial practices that limit unnecessary spending.

Financial Literacy and Financial Stress (H6 Supported)
Interestingly, the results show that financial literacy increases financial stress among undergraduates (H6 supported). While this may seem counterintuitive, it supports the argument of Lone & Bhat (2022) and Rahman et al. (2021) that greater financial awareness can heighten sensitivity toward financial challenges and long-term stability. In other words, individuals who better understand financial risks and obligations may feel more pressure to manage their finances responsibly.

This finding also complements Dango et al. (2024), who noted that awareness of financial mismanagement can lead to anxiety among students struggling to maintain control over their expenses. Thus, financial literacy serves as a double-edged sword. It encourages better financial management yet may elevate stress by increasing awareness of potential financial inadequacies.

Financial Literacy and Financial Well-Being (H7 Supported)
The strong positive effect of financial literacy on financial well-being (H7 supported) underscores its central role in shaping students' financial resilience. This supports Collins & Urban (2021) and Kadoya & Khan (2019), who identified financial literacy as a core predictor of financial satisfaction and future stability. Well-informed individuals are more capable of budgeting, saving, and planning for emergencies, resulting in enhanced well-being.

This result implies that while financial literacy might initially heighten financial stress (as seen in H6), its long-term effect contributes positively to overall financial wellness. The finding also supports the Malaysian government's financial education initiatives, which aim to integrate digital literacy with financial planning skills among young adults. Therefore, enhancing financial literacy remains the most effective way to achieve sustainable financial well-being among university students.

Spending Behavior, Financial Stress, and Financial Well-Being (H8 Supported; H9 and H10 Rejected)

The study finds that spending behavior significantly increases financial stress (H8 supported), consistent with Abrantes-Braga and Veludo-De-Oliveira (2020), who noted that impulsive and unplanned spending leads to greater financial anxiety and reduced control over personal budgets. Students who often engage in spontaneous purchases or exceed their financial limits experience higher stress, validating the behavioral–psychological linkage in personal finance.

However, spending behavior and financial stress do not significantly influence financial well-being (H9 and H10 rejected). This contradicts Nasir et al. (2025) and Zhang & Chatterjee (2023), who found that stress and poor spending habits negatively affect well-being. The nonsignificant findings in this study suggest that while stress and spending habits affect students emotionally, they may not yet substantially harm their overall financial satisfaction, likely due to their limited financial responsibilities and dependency on parental or scholarship support. Thus, financial well-being among undergraduates may be more strongly shaped by cognitive factors (literacy) rather than behavioral or emotional ones.

Implications

Collectively, the results highlight that financial literacy is the most critical determinant of financial well-being, while e-wallet usage plays an indirect role by enhancing financial knowledge. Digital payment systems like e-wallets can serve as educational platforms when paired with proper financial education initiatives. For policymakers and educators, this means integrating financial literacy modules into higher education curricula and promoting responsible digital finance habits.

Moreover, as financial literacy can raise stress awareness, counseling and support programs should accompany financial education to help students manage anxiety linked to money management. Lastly, since spending and stress do not directly affect financial well-being, long-term strategies should focus on developing financial habits and confidence rather than merely curbing expenses.

CONCLUSION

This study set out to investigate how e-wallet usage, financial literacy, spending behavior, and financial stress collectively shape the financial well-being of Malaysian undergraduates. Grounded in behavioral finance and digital consumption perspectives, the research aimed to identify the direct and indirect pathways through which digital financial tools influence students' financial outcomes in an increasingly cashless economy.

The findings demonstrate that e-wallet usage enhances students' financial literacy but does not directly influence their spending behavior, financial stress, or overall financial well-being. Financial literacy emerged as the most powerful driver of financial outcomes, significantly improving both responsible spending and financial well-being, while paradoxically increasing financial stress, likely due to heightened financial awareness and self-monitoring. Spending behavior was found to elevate financial stress but did not translate into higher well-being, suggesting that disciplined financial habits may not immediately alleviate financial anxiety. Similarly, financial stress itself showed no significant impact on financial well-being, indicating that emotional strain alone does not dictate financial satisfaction among undergraduates. Collectively, these patterns highlight that cognitive competence in financial management, rather than digital convenience or emotional stability, is the primary determinant of financial health in this population.

The implications of these findings are both theoretical and practical. Theoretically, the study contributes to understanding how financial literacy mediates the relationship between technological adoption and financial outcomes, reinforcing that digital engagement alone is insufficient without adequate knowledge and self-regulation. Practically, the results underscore the need for targeted financial education programs integrated with digital payment platforms to strengthen students' budgeting, analytical, and decision-making skills. For policymakers, educational institutions, and FinTech developers, fostering responsible digital finance behavior through financial literacy curricula, interactive learning tools, and transparent e-wallet features is critical to cultivating sustainable financial well-being among youth.

Future research should employ longitudinal and cross-cultural designs to examine the long-term behavioral adjustments associated with e-wallet use and financial literacy development. Collaboration between academia, government, and financial technology providers could further ensure that the benefits of digital payment systems are maximized through education and behavioral guidance, helping Malaysian undergraduates transition from digital convenience to enduring financial resilience.

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