EFFECTIVENESS OF USING ONLINE PAYMENT METHODS AMONG UNIVERSITY STUDENTS

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Abstract. This study explores the effectiveness of online payment methods among university students in Malaysia, with particular attention to lifestyle compatibility, perceived ease of use, and privacy and security concerns. The expansion of digital payment systems, especially following the COVID-19 pandemic, has significantly influenced consumer behavior, particularly among younger users. A quantitative approach was employed using a structured questionnaire distributed to 269 students from the Faculty of Business and Management at UiTM Puncak Alam. Data were analyzed using descriptive statistics, correlation, and regression analysis. The findings indicate that perceived ease of use and lifestyle compatibility are significant factors shaping students' preferences for online payment methods. In contrast, privacy and security concerns, while still relevant, demonstrate a comparatively weaker. The results suggest that convenience and the ability of payment platforms to integrate into students' daily routines are central to their adoption. This study contributes to the understanding of digital payment behavior among university students and offers practical insights for policymakers and financial service providers in designing payment systems that are both user-friendly and secure.
Keywords: *online payment, e-wallet, university students, ease of use, security*

Introduction

The rapid advancement of digital technology has significantly transformed the way financial transactions are conducted, particularly through the adoption of online payment systems. In Malaysia, the shift towards a cashless society has accelerated in recent years, driven by increased internet penetration, smartphone usage, and the growth of e-commerce platforms. Online payment methods, including internet banking, mobile banking, and e-wallets, have become integral to daily financial activities due to their convenience, speed, and accessibility. The COVID-19 pandemic further intensified the adoption of digital payment systems as movement restrictions encouraged consumers to shift towards contactless transactions. University students, in particular, represent a key demographic in this transition due to their familiarity with technology and reliance on digital platforms. As digital natives, students are more inclined to adopt innovative financial technologies that align with their lifestyle and preferences. Despite the growing popularity of online payment systems, several challenges remain. Concerns related to privacy and security, as well as differences in user experience, continues to influence adoption decisions. While some users prioritize convenience and ease of use, others remain cautious due to potential risks such as data breaches and fraud. Therefore, understanding the factors that influence the effectiveness and preference of online payment methods is essential.

This study aims to examine the effectiveness of online payment methods among university students by focusing on three key factors: lifestyle compatibility, perceived ease of use, and privacy and security. By identifying the relationship between these factors and students' preferences, this study contributes to the growing body of literature on digital payment adoption and provides insights into improving financial

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technology services. The percentage of cashless payment methods used in Malaysia for 2023. To be seen, online banking and debit cards are the most preferred payment used by people in Malaysia in the year of 2023 which is 35% respectively, followed by e-wallet at 26% and the least payment method used is credit card, which is 9% (Seraj, 2024). This study extends the application of the Technology Acceptance Model (TAM) by incorporating lifestyle compatibility and security factors to better explain online payment adoption among university students. These additional constructs were selected due to their relevance in the context of online payment systems among university students, where convenience, lifestyle integration, and security concerns play significant roles in technology acceptance.

Problem statement

The world is becoming more advanced, and the advances indirectly expose people to a variety of modern things. It indirectly affected people's ability to be more comprehensive and compatible with adapting to new technology, skills, and ways of thinking for everything that happens. In addition, one of the most critical and serious advancements that we can research is online payment. Online payment methods are becoming mainstream in today's economy due to the revolution in how people and businesses conduct transactions brought by the development of digital payment technologies. Digital transactions have expanded due to technology, which makes them more convenient than traditional payments. But because of the complex and security issues, some customers are still cautious. Furthermore, university students are most likely to use online payment which is using digital transactions like e-wallets to pay for their expenses either in university or shopping at the mall. This is because it is more perceived to use. It aligns with the situation where we are moving towards digital payment systems in recent years. In other words, the younger population was born into a society known as the society of electronic, technological, and wireless environments. It shows that the younger generation has grown up surrounded by digital technology, and fundamental technologies like computers, smartphones, and the internet have become a part of their daily existence. As a result, university students prefer to use online payment methods in their daily lives as it becomes easier and more transparent as it crosses the boundaries of traditional payment methods.

Certainly, the biggest obstacles to the widespread use of online payment methods are still privacy and security concerns. Following worries about privacy issues, data breaches, and the exploitation of their financial information, many consumers are reluctant to use online payment systems. Additionally, the use of online payment methods may lead to excessive spending by people then can encourage scammers to do things that can harm us. Overall, online payment method gives advantages and disadvantages for everyone. Therefore, the study aims to investigate several significant variables, like lifestyle compatibility, perceived ease of use, and privacy and security concerns that continue to influence how effective the online payment method is.

Literature review

The adoption of online payment methods has grown significantly in recent years, particularly among younger populations such as university students. This trend is largely driven by rapid technological advancement, increased internet accessibility, and the expansion of digital financial services. In the Malaysian context, the transition

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towards a cashless society has been further accelerated by the COVID-19 pandemic, which reshaped consumer behavior and increased reliance on contactless transactions (Seng et al., 2023). Online payment methods refer to electronic systems that facilitate financial transactions without the use of physical cash, including internet banking, mobile banking, and e-wallet platforms (Stripe et al., 2023). Prior studies have consistently shown that university students are among the most active users of such technologies due to their familiarity with digital tools and preference for convenience. However, the effectiveness and continued use of online payment systems are influenced by several key factors. One important factor is lifestyle compatibility, which reflects the extent to which a technology aligns with users' daily routines and social environment. Studies suggest that when online payment systems integrate seamlessly into users' lifestyles, they are more likely to be adopted and frequently used (Yang et al., 2021). For instance, digital payment platforms that support everyday activities such as online shopping and transportation services tend to gain higher acceptance among students. This finding is consistent with previous research indicating that compatibility with users' lifestyles positively influences behavioral intention towards technology adoption (Gan et al., 2023). However, some studies argue that lifestyle influence alone may not sustain long-term usage without complementary functional benefits.

Another critical determinant is perceived ease of use, which refers to the degree to which a system is free from effort. Rooted in the Technology Acceptance Model (TAM), ease of use has been widely recognized as a key predictor of technology adoption (Davis, 1989). Empirical findings indicate that users are more likely to adopt online payment systems when they are simple, user-friendly, and require minimal effort to operate (Ahmad et al., 2021; Abdullah et al., 2020). Among university students, ease of use enhances efficiency and reduces transaction time, making it a highly influential factor. Systems that offer intuitive interfaces and seamless navigation contribute significantly to user satisfaction and continued usage (Lim et.al, 2023). Compared to other variables, ease of use is often found to have a stronger and more consistent influence on adoption behavior. In contrast, privacy and security remain significant concerns in the adoption of online payment methods. These factors relate to users' perceptions of how well their personal and financial information is protected during transactions. Strong security measures are essential in building trust and encouraging adoption (Teo et al., 2020). However, previous studies present mixed findings regarding their influence. While some research highlights security as a major determinant of adoption, others suggest that users particularly younger individuals may prioritize convenience over security concerns (Ahmad et al., 2021). This indicates that although security is a necessary condition, it may not always be the primary driver of usage. *Figure 1* shows the conceptual framework of the study. The independent variables of this study are lifestyle compatibility, perceived ease of use and privacy and security towards the dependent variable; preferences of online payment method.

H1: Lifestyle compatibility has a significant positive relationship with the effectiveness of online payment methods among university students.
H2: Perceived ease of use has a significant positive relationship with the effectiveness of online payment methods among university students.
H3: Privacy and security have a significant positive relationship with the effectiveness of online payment methods among university students.

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Furthermore, existing literature highlights that the relationship between these factors and user preferences is not uniform. While ease of use and lifestyle compatibility consistently demonstrate positive relationships with adoption, the role of privacy and security appears to be more complex and context-dependent (Gan et al., 2023). This suggests the need for further empirical investigation, particularly within specific populations such as university students in Malaysia. Based on the reviewed literature, this study proposes that lifestyle compatibility, perceived ease of use, and privacy and security are key factors influencing students' preferences for online payment methods.

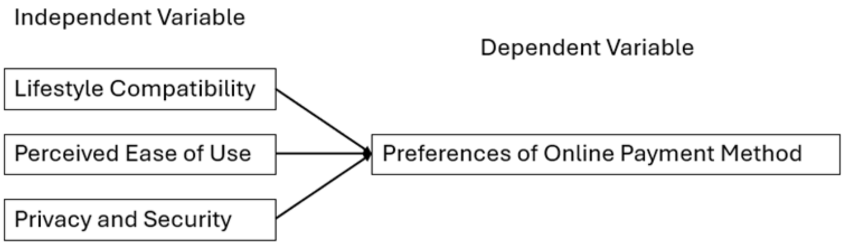

Figure 1. *Conceptual fraemwork of the study.*

Materials and Methods

This study adopts a quantitative research approach to examine the factors influencing the effectiveness of online payment methods among university students. A descriptive and correlational research design was employed to identify the relationships between the independent variables which are lifestyle compatibility, perceived ease of use, and privacy and security, and the dependent variable, namely students' preferences for online payment methods. The target population of this study consists of students from the Faculty of Business and Management at Universiti Teknologi MARA (UiTM) Puncak Alam. These students were selected due to their high exposure to digital technologies and frequent use of online payment systems. A non-probability sampling technique, specifically convenience sampling, was utilized due to accessibility constraints and time limitations. A total of 269 respondents participated in the study, which aligns with the recommended sample size based on Krejcie and Morgan's sampling table. Data were collected through a structured questionnaire distributed via online platforms such as Google Forms, WhatsApp, and Telegram. The questionnaire was divided into five sections: demographic profile, lifestyle compatibility, perceived ease of use, privacy and security, and preferences for online payment methods. Measurement items were adapted from previous studies to ensure content validity (Seng et al., 2023; Teo et al., 2020; Lim, 2023). Responses were measured using a five-point Likert scale ranging from 1 (strongly disagree) to 5 (strongly agree), which is widely used in behavioral research for capturing attitudes and perceptions. To assess the reliability of the measurement instrument, Cronbach's alpha coefficients were calculated for each construct. All variables achieved acceptable reliability levels, exceeding the recommended threshold of 0.70, indicating internal consistency of the items.

Results and Discussion

This section presents the findings of the study and discusses the relationships between lifestyle compatibility, perceived ease of use, and privacy and security with students' preferences for online payment methods.

Descriptive findings

The demographic analysis shows that the majority of respondents were female (55.9%), while males accounted for 44.1%. Most respondents were aged 18–22 years (64.8%), followed by those aged 23–27 years (33.7%), indicating that the sample was predominantly composed of young adults. In terms of academic programmes, Human Resource students represented the largest group (39.6%), followed by Finance and International Business (16.3% each), Islamic Banking (14.1%), and Health Administration (13.7%). Most respondents were in Semester 5 (50%), suggesting a concentration of students in the later stages of their studies. Regarding monthly expenses, the majority spent less than RM300 (42.6%) or between RM300 and RM500 (38.5%). The findings also revealed a high frequency of online payment usage, with 64.4% of respondents using online payment methods more than 10 times per week. Online banking was the most preferred payment method (60.7%), followed by e-wallets (24.8%), while online shopping (52.6%) and food ordering (28.9%) were the most common situations in which online payment methods were used. Overall, the demographic profile indicates that the respondents were active users of online payment systems, making them suitable participants for examining preferences toward online payment methods.

Lifestyle compatibility

The ranking of items related to the relationship between lifestyle compatibility with the preferences for using online payment methods was analysed using the descriptive statistics. "I feel certain online payment methods are trending/popular among students" is ranked first with a mean of 4.704. On the other hand, the ranking of the lowest position is "I easily get influenced by online payment habits around me (family, friends)," with a mean of 4.519. The most ranked second statement is "Using online payment methods fits well with my daily lifestyle", with a mean of 4.696. Then, followed by "Online payment methods are convenient for my routine expenses and purchases," with a mean of 4.644. "People who are close to me expect me to use online payment method" ranked fourth with a mean of 4.626 and the second last with a mean of 4.58 is "Online payment options save my time compared to traditional methods".

Perceived ease of use

This section describes the ranking of items related to the relationship between perceived ease of use with the preferences for using online payment methods. "It helps reducing my worry if I have insufficient cash" is ranked first with a mean of 4.715. On the other hand, the ranking of the lowest position is "I can easily use cashless payment no matter where I am" with a mean of 4.567. The ranked second statement is "I find it can save time without drawing a cash," with a mean of 4.707. Then, followed by "Online payment system are straightforward and simple to navigate," and "I can easily keep track of the transaction record" with a mean of 4.700 respectively. "I find it easy to learn how to use new online payment methods" with a mean of 4.674 ranked the second last.

Privacy and security

The item of privacy and security was ranked to assess the relationship between privacy and security and the preferences for online payment methods. "Online payment method guarantee a hygiene as no human touch" is ranked first with a mean of 4.633. On the other hand, the ranking of the lowest position is "I reduce the risk of financial loss" with a mean of 4.348. The second statement ranked as "I can reduce the risk of theft" with a mean of 4.478. Then, followed by "I satisfied with the security system of online payment" and "I trust online payment methods can protect my data privacy" with a mean of 4.444 and 4.393 respectively. "I feel comfortable providing personal information to online payment services" with a mean of 4.356 ranked the second last.

Preferences of online payment method

The ranking of items related to the preferences for online payment methods was assessed. "I would suggest online payment methods to others" is ranked first with a mean of 4.653. On the other hand, the ranking of the lowest position is "I reduce the am satisfied with the online payment system" with a mean of 4.578. The second statement ranked as "Would you consider using online payment method to promote benefits like discount, cashback, and loyalty?" with a mean of 4.653. Then, followed by "I trust/prefer online payment methods that are well-known and widely used" and "I prefer using online payment method that can be linked to my bank account for easier transaction" with a mean of 4.626 and 4.644 respectively. "I value the abilities to use online payment method that work seamlessly across different devices (smartphone, tablets, computers)" with a mean of 4.622 ranked the second last.

Reliability analysis

The reliability test results show that all constructs achieved Cronbach's alpha values exceeding the recommended threshold of 0.70, indicating a high level of internal consistency among the measurement items. This confirms that the instrument used in this study is reliable for further statistical analysis. The first independent variable is lifestyle compatibility. The result for this independent variable is 0.897 and indicates a good internal consistency. Meaning that it has a reliable measurement instrument. The result of Cronbach's Alpha for the second independent variable which is perceived ease of use is 0.870. The scale also indicates a good internal consistency. Next, the last independent variable privacy and security. The variable result is 0.922 has an excellent level of internal consistency and for the dependent variable preferences of using online payment method which is 0.919. The overall internal consistency shows as an excellent. Thus, all of the measuring instruments that we used were reliable.

Correlation analysis

Correlation analysis was conducted to examine the strength and direction of the relationships between the independent variables and the dependent variable. The results indicate that all three variables which are lifestyle compatibility, perceived ease of use, and privacy and security, have positive relationships with students' preferences for

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online payment methods. Among these variables, perceived ease of use demonstrates the strongest correlation with online payment preferences, followed by lifestyle compatibility. Privacy and security, although positively related, show a comparatively weaker relationship. These findings suggest that students are more influenced by functional and convenience-related factors rather than security concerns when adopting online payment systems. Pearson correlation analysis was conducted to examine the relationship between the independent variables and students' preferences for using online payment methods. The results showed that all variables were positively and significantly related to the dependent variable. Perceived ease of use recorded the strongest correlation ($r = 0.786$), followed by lifestyle compatibility ($r = 0.774$) and privacy and security ($r = 0.677$). These findings indicate that students are more likely to prefer online payment methods when they are easy to use, compatible with their lifestyles, and perceived as secure. Based on the correlation strength guidelines, both perceived ease of use and lifestyle compatibility demonstrated strong positive relationships with online payment preferences, while privacy and security showed a moderately strong positive relationship. Overall, the results confirm that all three factors are significant determinants of online payment preferences among university students.

***Table 1**. Correlation analysis.*

Variable	Correlation and significant value
Lifestyle Compatibility	0.774 (0.000)
Perceived Ease of Use	0.786 (0.000)
Privacy And Security	0.677 (0.000)

Regression analysis

The multiple regression analysis revealed that perceived ease of use and lifestyle compatibility are significant predictors of students' preferences for online payment methods, with perceived ease of use emerging as the strongest factor. This suggests that students are more likely to adopt payment systems that are simple, efficient, and compatible with their daily lifestyles. Although privacy and security remain important, their influence is comparatively weaker, indicating that convenience and usability are prioritised over security concerns. The model explained 71% of the variance in online payment preferences ($R^2 = 0.71$), while the remaining 29% may be attributed to other factors not included in the study. These findings support the Technology Acceptance Model (TAM) and highlight the importance of usability and lifestyle integration in encouraging the adoption of online payment methods among university students. From the *Table 2*, since the significant F-value is 0.000 which is less than 0.05 significant level. Thus, the overall model is valid. The multiple regression analysis indicated that all independent variables (lifestyle compatibility, perceived ease of use, and privacy and security) significantly influenced the effectiveness of online payment methods among university students ($p < .001$). Among these factors, perceived ease of use emerged as the strongest predictor ($\beta = 0.389$), followed by lifestyle compatibility ($\beta = 0.293$) and privacy and security ($\beta = 0.261$). The positive regression coefficients suggest that higher levels of these factors are associated with greater perceived effectiveness of online payment systems. These findings highlight the importance of user-friendly features, alignment with students' lifestyles, and adequate security measures in promoting the adoption and effectiveness of online payment methods (*Table 3*).

***Table 2**. ANOVA.*

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Model	Sum of Squares	Degree of Freedom (df)	Mean Square	F	Sig.
Regression	1671.913	3	557.304	216.649	0.000
Residual	684.254	266	2.572		
Total	2356.167	269			

Table 3*. Coefficients.*

Model	Unstandardize Coefficients		Standardize Coefficients	t	Sig.
	B	Standard Error	Beta		
(Constant)	2.361	1.041	-	2.267	0.024
Lifestyle compatibility	0.296	0.061	0.293	4.880	0.000
Perceived ease of use	0.430	0.065	0.389	6.611	0.000
Privacy and security	0.190	0.031	0.261	6.046	0.000

The findings indicate that perceived ease of use and lifestyle compatibility significantly influence the effectiveness of online payment methods among university students, with lifestyle compatibility emerging as the strongest predictor. This suggests that students prefer payment systems that align with their daily routines, mobile usage, and digital lifestyles. Although privacy and security remain important, their influence is comparatively weaker, indicating that users may prioritise convenience and usability while assuming a basic level of security. The study extends the Technology Acceptance Model (TAM) by demonstrating that technology adoption is influenced not only by system usability but also by contextual factors such as lifestyle compatibility and security expectations. These findings highlight the importance of user-centred design, lifestyle integration, and adequate security measures in promoting sustained adoption of online payment systems.

Conclusion

This study examined the effectiveness of online payment methods among university students and found that perceived ease of use and lifestyle compatibility significantly influence adoption, with ease of use emerging as the strongest factor. The findings suggest that students prefer payment systems that are simple, convenient, and aligned with their daily activities. Although privacy and security positively influence preferences, their impact is comparatively weaker, indicating that users may place greater emphasis on convenience and efficiency. The study contributes to the literature on digital payment adoption and provides practical implications for financial service providers, fintech companies, and policymakers to enhance usability while maintaining adequate security measures. However, the study is limited by its use of convenience sampling and its focus on students from a single faculty at UiTM Puncak Alam, which may restrict the generalisability of the findings. Future research should involve more diverse samples, incorporate additional variables such as trust and financial literacy, and employ longitudinal approaches to better understand changes in online payment adoption over time. Overall, the study highlights that the successful adoption of online payment systems among university students depends primarily on ease of use and lifestyle compatibility, supported by effective security measures.

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Conflict of interest

The authors confirm that there is no conflict of interest involved with any parties in this research study.

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