



B40 Income Earners in Malaysia: How Adoption of Cashless Payment Shapes Customer Satisfaction in Post Covid-19 Outbreak

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Abstract. The emergence of a cashless society and technical innovation has gained substantial global popularity. Cashless cultures have existed since the dawn of human civilisation, relying on barter and other means of exchange. A totally cashless society refers to the process and results of replacing physical currency with digital currency. This implies that legal money exists, is documented, and transmitted in electronic digital form. As payment systems grow more digital, individuals are moving away from traditional cash purchases and toward cashless and contactless solutions. This study focuses on the relationship between cashless payment use and satisfaction among Malaysian B40 income earners. The current study is to assess the factors impacting customer behaviour and satisfaction with cashless payment systems in the post-adoption era. This quantitative study employs a self-administered questionnaire to assess the research model's hypotheses appropriately. The study's target population consisted of 213 low-income people, specifically B40 income earners living in Malacca, Malaysia, based on their monthly income range. A purposive sample approach was used to acquire data using the non-probability sampling technique. To assess the impacts of cashless payment acceptance on customer satisfaction, descriptive analysis, reliability analysis, and multiple regression analysis were carried out using the Statistical Package for the Social Sciences, version 29. The results back up hypotheses 1, 2, 3, 4, 5, and 6. The results emphasised that performance expectancy, social influence, innovativeness, perceived technology security, perceived trust, and perceived cost all have a substantial impact on cashless payment acceptance. Not only that, but the study's findings support H7. First, this study aims to enhance and combine existing theoretical models, such as expectation-confirmation theory and UTAUT 2, by incorporating perceived technological security, perceived trust, and perceived cost for digital payment usage. Second, unlike most contemporary studies, satisfaction is taken into account.

Keywords: Perceived cost, Perceived trust, Perceived technology security, Innovativeness, Satisfaction.

1 Introduction

Digitisation specifically in the fintech business is a key characteristic of the global economy in the early twenty-first century. Financial digitalisation drives technological transformations in retail and wholesale finance, promoting the utilisation of digital cash, open banking and smart contracts. Additionally, it enables the development of new financial products like central bank digital currencies, stable coins and cryptocurrency [12]. In a cashless society, financial transactions are done digitally rather than using real money like banknotes or coins [2]. A cashless society uses digital cards or electronic devices for financial transactions, in line with the Fourth Industrial Revolution. Payment systems for products and services have evolved significantly in recent decades, with a growing global preference for cashless and digital transactions [5]. The COVID-19 pandemic crisis has expedited the trend of cashless payments, which has been growing over the past decade [31]. Therefore, it seems that globally, cashless society and technological innovation are gaining popularity [30].

When shopping online, people throughout the world utilise various payment methods. Cash is the most frequent method of payment, accounting for 85% of all consumer transactions worldwide [2]. Asia is lagging behind Western nations in digital payment usage. Nevertheless, cashless payment systems are widely employed in the Netherlands, Germany, Scandinavian, Kingdom of Bahrain, Sweden, Norway, India, Singapore, Japan and China countries [2, 3, 6, 30]. Cashless payments are described as “*payment transactions that are made using digital payment instruments and digital interfaces, typically involving telecommunication and the Internet, resulting in the diminished use or displacement of physical cash*” [31]. Cashless payments are one of numerous payment systems, including e-wallets, e-money, QR code payments and mobile wallet apps [3]. Cashless payments offer various advantages. There are including increasing payment convenience, advancing information technology, boosting transparency in public transfers and payments, promoting financial inclusion, facilitating access to financial resources, lowering transaction costs, improving personal security, minimising criminal activities like money laundering and the shadow economy, reducing corruption and widespread adoption of smartphones and payment apps. Hence, a cashless economy prevents unlawful activities linked with physical currency, such as counterfeiting, terrorist financing and unauthorised circulation of funds [8, 12].

From the year of 2018 to 2019, global cashless transaction volumes increased by 14% to 708.5 billion, marking the fastest growth rate in a decade. Cheque utilisation has decreased by 13.4% globally. Addition to that, the debit card to credit card ratio has interestingly switched to 90:10 than 59:41 in the last decade [30]. The average annual number of cashless payments per capita increased from 426 to 468 (+10%) in advanced economies nations (AEs) and also in emerging market and developing countries (EMDEs) from 246 to 291 (+18%). AEs had twice the number of cashless transactions compared to EMDEs. In AEs, the cashless payments value as a percentage of nominal GDP climbed by 4%, while in EMDEs, it declined by 2% [22] (see Fig. 1A & 1B). However, Malaysia has a mobile payment adoption rate of 29.4% lower than Hong Kong with 46.7%. It depicts that mobile payment adoption in Asia is still slow. Malaysia was classified in the initial group of 33 countries embracing cashless five years ago, with only 2% of consumer transactions being cashless [30]. That said, the COVID-19 outbreak prompted Malaysians to migrate to Internet purchasing during statewide lockdowns, resulting in a significant increase in mobile payment adoption [5]. The COVID-19 epidemic has led to increased adoption of digital technologies and non-cash payment alternatives among customers and businesses throughout economies [8,12]. A highly developed mobile network infrastructure, clear central bank rules and extensive individual ownership of mobile devices with approved banking accounts permit to create cashless environments. COVID-19 has demonstrated that objectives may be accomplished with minimal funding, perhaps removing the need for funds [8]. The cashless economy helped overcome economic barriers. The Malaysian government established MyDIGITAL, a national project aimed at transforming the nation into a high-income and technology-driven country [24]. Gradually, payment channels in Malaysia have begun to steadily drift from Automated Teller Machines (ATM) to mobile banking from 2019 to 2024. The volume of cashless payments has expanded significantly at 724.5 million (January – March 2024) than 489.8 million (2019). The penetration to population rate for Internet banking and mobile banking increased by 142.9% and 98.7% in March 2024 respectively, compared to 2019 with 97.6% (Internet banking) and 52.9% (mobile banking) (see Fig. 2). This evidence proven that Malaysia has the highest Internet and mobile penetration rates in Southeast Asia, at 96.8% and 83.5%, respectively [7] (see Fig. 3). By 2026, new payment methods will account for around 28% of the entire number of non-cash transactions. Implementing an effective payment system can significantly improve a developing country's economic viability [8]. In accordance with the Malaysia development strategies, the execution of the cashless economy, i.e. MyDIGITAL is to fulfil the shared prosperity vision 2030 and Twelfth Malaysia Plan. The aims are to strengthen digital payments adoption, position Malaysia as a regional leader in cyber security and digital content, and drive inclusive digital transformation. Conversely, worries about the possible risks associated with cashless transactions such as user privacy, network security and data security are a matter. Customers may be hesitant to use cashless payment methods due to security risks like scammers, hackers and phishing emails. Malaysians are inexperienced with digital payment options including Internet transfers and contactless payments. There is a remain barrier for customers to adopt cashless payment systems as the existence of many forms of digital payment systems in the marketplace [24]. Adoption is hampered

in part by privacy worries about mandatory verification, security concerns, technical difficulties such as slow grievance redressal procedures and connectivity problems, gaps in digital awareness and unequal use among rural populations and lower socioeconomic [27]. Therefore, the present study intends to fill these gaps.

Overall, cashless payments are critical to the global economy and seen as a key driver of economic growth. It is required to acquire new descriptive and exploratory knowledge by balancing theoretical advancements and practical realities of cashless payments. It is to assist elucidate the phenomena under study and useful in developing recommendations for business practice and policy in cashless transactions [30]. Satisfying consumer needs is crucial for businesses to thrive. Marketers believe that understanding consumer wants and prioritising customer satisfaction leads to greater success. Satisfied consumers are crucial for a firm's growth and success in a competitive market. For instance, government intervention has pushed banks to strive harder to understand and please their customers. Satisfaction is claimed to benefit companies, including banks, in a variety of ways, one of which is increased client loyalty. Loyalty can lead to higher prices and increased sales from current customers [9]. A study of the literature indicated that the vast majority of researches on cashless payment systems employed the Technology Acceptance approach (TAM) such as [2, 8] and [13]. Contrary, other researches explored on the Unified Theory of Acceptance and Use of Technology (UTAUT) model for digital payments and its expanded forms namely [30, 5] and [24]. Nonetheless, the UTAUT remains primarily a pre-adoption framework, with limited study on attitudes and behaviours that evolve following adoption [14]. Thus, to address this gap, this study focuses on the link that exists between the use behaviour of cashless payments and satisfaction in the context of B40 income earners in Malaysia. The current research aims to evaluate drivers influencing customers behaviour and satisfaction to use cashless payment systems in the post adoption period. The main contribution of this research is divided into two components. First, this study intends to further expand and integrate the existing theoretical models, such as expectation-confirmation theory and UTAUT 2 by including perceived technology security, perceived trust and perceived cost for digital payment usage. Second, unlike most of the current studies, satisfaction is taken into consideration. On the other hand, there are five sections in the present research. Section two discusses an underpinning theory and an overview of the relevant literature on the implementation of cashless payment. The methodology designing is explained in Section three. In section four, this study shows results and discussion. Implications and conclusion of the present study will be discussed in section five.

2 Literature Review

2.1 Theoretical Underpinning

Expectation-confirmation theory explains customers' affirmation of their overall consumption experience and how these experiences influence their intention to continue. The consumer's satisfaction with a product or service is determined by whether its per-

ceived performance satisfies their expectations. There is the link between past and present behaviour and satisfaction. An ex post cognition shows a favourable correlation between satisfaction and intention and actual behaviour. Consumer satisfaction decreases when perceived performance such as amenities, value and customer service falls short or is contradicted [9, 11, 14, 20]. Trust associates with outcomes namely intention to continue and satisfaction is crucial as they can influence long-term use of strategically vital information technologies. Consumers may indicate more happiness and desire to continue using a technology if their hands-on experience meets their technology trust expectations. On the other hand, unmet expectations may have negative implications, leading consumers to avoid or forsake technology. System development success or failure relies on expectation management [21]. Satisfied customers are more likely to continue using the service [11].

The Technology Adoption concept (TAM) is widely recognized as a key concept for understanding how consumers acquire technology. TAM is an important model for determining an individual's willingness to adopt or reject new technologies. A study of 153 Malaysians examined the use of mobile credit cards (MCC) based on perceived risk, personal innovativeness, perceived financial cost and social influence. Their model exhibited a 44.9% predictive power with perceived ease of use and perceived usefulness of use being substantially connected with the intention to adopt MCC [6].

UTAUT is another prominent model for measuring the desire to adopt cashless payment systems. This model highlights four major constructs such as perceived ease of use, social norms, perceived usefulness and facilitating conditions [19] and is initially developed in the context of organisational. This theory was latter expanded to UTAUT2 by introducing perceived risk, social influence, attitude and innovativeness. Studies using UTAUT and UTAUT2 found that social influence, perceived ease of use, innovativeness and perceived usefulness significantly influenced e-wallets uptake in India [6]. UTAUT2 outperforms UTAUT in terms of predictive ability whereby consumers' intention to use technology accounts for 74% of the variance, while its utilisation accounts for 52% [24]. Compared to previous behavioural intention models like TAM, UTAUT2 has a higher explanatory power, almost 70%, for predicting how individuals would use a new technology. UTAUT2 is further expanded in examining the adoption of mobile banking in Jordan by taking into account perceived trust. UTAUT2 is also widely employed in technology-based researches globally, from developed nations, for example, the United States of America to developing nations (i.e., Jordan and India). This demonstrates that this theory's adaptability to many contexts and cultures. However, perceived cost, perceived privacy, perceived security and perceived trust are frequently listed as reasons for the low utilisation of mobile payments [5]. On top of that, UTAUT2 could show customers' utilisation of a specific technique for their financial transactions. Overall, UTAUT2 is more appropriate for the end user technology adoption [30]. Although these theories focused on aspects critical to defining pre-adoption intention, after the adoption of technology is necessary to investigate elements crucial for evaluating consumer intent to maintain usage [20]. Based on these past researches, the current research integrates the expectation-confirmation theory and the UTAUT models to analyse the cashless payment technologies adoption among B40 income

earners in Malaysia. The research model is developed relied on the theoretical base that shown in Fig. 4.

2.2 Performance Expectancy on Adoption of Cashless Payments

Performance expectancy defines as the level of consumers expectation in utilising the system that would help them to achieve their work performance [30]. Performance expectancy is referred to perceived benefits of employing technology. Adopting new technologies will be more willingness among customers if they believe the technology would improve and benefit their present performance. There will be the capacity to transmit personalised banking information if the availability of financial technology services at elsewhere and anytime. Hence, performance expectancy is highly correlated with consumers' inclination to embrace digital payment systems such as mobile banking [24]. Similar observations have been found from [30] and [19] that performance expectancy is a powerful predictor of mobile banking adoption, an effective measure of segmentation and subsequent utilisation behaviour for cashless payment systems. Thus, this research proposes that:

H1: Performance expectancy has a significant relationship on cashless payments adoption among B40 income earners of Malaysia.

2.3 Social Influence on Adoption of Cashless Payments

Social influence is the level of other's influence in using a particular technology [28]. It can also be explained the way of a technology individual feels how important people want you to use the invention, system and technology [19]. Specifically, social influence defines as the way of a person adapts his/her behaviour to match the needs of a social context and the modified individual perceives themselves in relation to other individuals, the society and the influencer [30]. Customers may be influenced by image, knowledge from their social network and perceived social pressure when considering a new technology. Users are more likely to behave in ways that benefit the referent group. Advice from peers, such as coworkers, friends and family members has a significant impact on creating trust and behaviour. Social influence affects users' decision to use internet banking or fintech services [28]. Social influence perceives as a good predictor of behavioural intention and numerous digital payment options adoption among consumers [24]. As a result, based on the literature review, the following hypothesis is formulated:

H2: Social influence has a significant relationship on cashless payments adoption among B40 income earners of Malaysia.

2.4 Innovativeness on Adoption of Cashless Payments

Innovativeness refers to a firm's readiness to adopt and utilise new technology. Personal innovativeness has been associated with increased usage of cashless payments and is defined as the propensity and readiness of an individual to adopt and utilise cutting-edge technologies [6, 8]. Innovativeness is also an extended variable for the

UTAUT theory and determines young customers' inclinations to adopt mobile commerce. This variable is widely assumed that all customers are same when they are willing to absorb new experiences [30]. Based on the individual characteristics, user innovativeness is a crucial factor on consumers behaviour towards creative products/services [16]. Personal innovativeness influences late adopters' perceived ease of use, most likely due to their greater technological expertise. As a result, they are more confidence in their ability to use technology than early adopters [6]. A high degree of consumers' personal innovation in information technology may create more positive opinions regarding the implementation of cashless payment services. In India, innovativeness has a substantial impact on the uptake of e-wallets [5, 30]. The tendency to utilise digital payments appears to be positively correlated with a person's degree of innovation and openness to embracing new technology [8]. Therefore, the following hypothesis is proposed:

H3: Innovativeness has a significant relationship on cashless payments adoption among B40 income earners of Malaysia.

2.5 Perceived Technology Security on Adoption of Cashless Payments

Users' trust in participating in online activities is significantly shaped by security issues around cashless payment services. The current customers are searching for transaction security to avoid losing money or information. Disseminating information and reassuring consumers about payment security can impact their faith in the cashless payments. Consumers may be reluctant to use electronic payment methods if they are unaware of the security precautions that are built into their transactions [8, 19]. The possible financial loss resulting from fraudulent activities or cyberattacks that breaches the security of digital payments is security risk. This risk is one of the most significant hurdles to technology adoption [28]. In relation to perceived technology security, it describes creating methods to safeguard consumer data. Personal/business data as in the technology security system is vital for preventing unwanted access to information sent. Consumer use of digital payment systems may expand due to technological security. If there is robust on perceived technological security, firms will be able to use the knowledge to develop products/services associated with the utilisation digital payments [30]. Prior studies have shown perceived technology security as a pivotal determinant of cashless payment systems adoption such as [5, 8, 24] and [28].

H4: Perceived technology security has a significant relationship on cashless payments adoption among B40 income earners of Malaysia.

2.6 Perceived Trust on Adoption of Cashless Payments

Perceived trust is defined as an individual's willingness to take a risk to meet a need in the absence of past credible experience/knowledge. It serves as a pivotal precursor in utilising e-wallets, particularly for people with no/little information or experience in employing such a service [19]. Customer trust the firm based on its reliability, integrity, honesty, competence and desire to cooperate. These characteristics are a significant aspect in the financial services industry for improving long-term customer relationships. It may reduce the ambiguity or fear of the behaviour and facilitate transactions

with customers [28]. For instance, trust in e-government services is triggered from safe electronic information storage, confidence in technology and the link between risk and electronic transactions. The trustworthiness of users' expectation on e-government services are privacy, data authenticity, overall goodwill, service quality and transaction security. First-time consumers of e-government services are often apprehensive due to unknown risks. People who trust e-government services are most probably to employ and share these services if they believe the services are safe and secure. Building trust can reduce resistance to online services and attract more consumers [26]. Perceived trust and risk have an impact on the mobile payment adoption [5, 28]. Perceived trust increases the likelihood of cashless payment uptake. It is crucial to avoid hacking risks. The risk of financial loss deters the utilise of mobile payments [19]. Based on past research results, the present study suggests the following hypothesis:

H5: Perceived trust has a significant relationship on cashless payments adoption among B40 income earners of Malaysia.

2.7 Perceived Cost on Adoption of Cashless Payments

Perceived cost is the cost of purchasing the goods. Specifically, it illustrates how customers assess the perceived benefits of a given technology-based solution against the cost of utilising it. For instance, using a cashless payment to pay for a certain drink via a machine may be charged more expensive than a cash. In China, it is about 60% of users are worried on the cost of utilising a digital payment system. As compared to Malaysia, the adoption of credit cards using mobile phones is heavily influenced by perceived costs. Perceived cost has a detrimental effect on users' inclination to utilise mobile payments [10, 19]. Loyal customers benefit the economy by driving up premium pricing and improving cost efficiency. Perceived cost can be categorised into two categories which are a ratio between the value that customers obtain, and the expenses incurred when employing and buying a service [17]. Customers weigh the benefits of cashless payment systems against the cost of adoption, including smartphone and internet subscription costs, while considering alternative payment methods [20]. The perceived cost might impact customer satisfaction and retention intentions. The relationship between perceived cost and satisfaction is complimentary. This depicts that customer happiness is impossible if perceived cost is missing. Consequently, the following hypothesis is developed in light of the results of earlier research:

H6: Perceived cost has a significant relationship on cashless payments adoption among B40 income earners of Malaysia.

2.8 Adoption of Cashless Payments and Customer Satisfaction

Satisfaction refers to users' favourable experiences with a product or service following adoption [20]. In simple words, it is a contrast between expectations and actual performance. Customer satisfaction is good perceptions and trends in purchasing based on a comparison of expectations and the direction taken by the product/service. The perceived performance will definitely be validated as good or negative if it is lower or greater than anticipated. When real performance meets expectations, expectations are justified, and customers are pleased. Satisfied customers are the foundation of a thriving

firm since they drive repeat business and brand loyalty, in addition to increasing corporate revenues [17]. Even when ordinary customers evaluate the rapidly evolving product, the core qualities of other similar smartphone apps have a greater impact on the anticipated level of fundamental expectations on emerging technologies of cashless payments. As a result, users of these technologies confirm their expectations and continue to use the gadget even when its real performance during consumption exceeds their initial expectations in terms of usability or performance [14]. The decision to reuse a product/service is determined by the user's level of satisfaction with their past usage experience [14, 20]. A number of studies have highlighted that satisfaction has been linked to increased consumer loyalty [9, 14, 20, 17]. The intention to continue using cashless payments after adoption occurs when its use moves beyond conscious thought and becomes a routine way of payment for the user [14]. Thus, the present research formulates the following hypothesis:

H7: Adoption of cashless payments has a significant relationship on satisfaction among B40 income earners of Malaysia.

3 Methodology

This quantitative study employs a self-administered questionnaire to examine hypotheses of the research model accordingly. A pre-test research is carried out to verify the validity of the measurements items since content validity is necessary for the questionnaire. To evaluate the study's content validity, a pilot test with thirty participants was conducted. It is in line with the suggestion of the study by [5]. Cronbach's Alpha is used for this research during the reliability test. Cronbach's alpha was employed to assess internal consistency of scales with a large number of components. A Cronbach's alpha value greater than 0.70 indicates that the study is appropriate [18, 25]. Data were collected using a non-probability sampling technique. The purposive sample approach is a more realistic way to acquire data for the current investigation. This technique is justified by the assumption that certain individuals may have unique perspectives on the study's problems and theories, making it necessary to include a sample of these people [29]. The questionnaire used for this study consisted of two components. Section A was used to gather participant demographic information and measurement items regarding the participants' performance expectancy, social influence, innovativeness, perceived technology security, perceived trust, perceived cost, adoption of cashless payments and satisfaction. The eight constructs were measured using a five-point Likert scale. 1 for strongly disagreeing, 2 for disagreeing, 3 for neutral, 4 for agreeing, and 5 for strongly agreeing. This scale permitted the evaluation of different levels of disagreement and disagreement with the presented assertions [25]. The target audience of this study was 213 low-income people, specifically B40 income earners who living in a Malacca state of Malaysia based on the type of their monthly income range. The income range was classified into four groups: B1 is less than RM2,500, B2 is from RM2,501 to RM3,170, B3 starts from RM3,171 to RM3,970 and B4 is from RM3,971 to RM4,850 [23]. The B40 group commonly prefers low-and medium-cost dwellings [1]. The performance expectancy (four items), social influence (three items), innovativeness (three items), perceived technology security (three items), and adoption of cashless payments (three items) were adopted from [30]. On the other hand, perceived trust was evaluated utilising five items adopted from [32]. The scales from [10] and [4] were adapted to measure perceived cost (three items) and customer satisfaction (five items) respectively. The Statistical Package for the Social Sciences, version 29, was used to conduct descriptive analysis, reliability analysis and multiple regression analysis to evaluate the effects of adoption of cashless payments on customer satisfaction.

4 Results and Discussion

This section presents the findings and discussion. It starts with the assessments of descriptive results, the reliability and validity of items and research hypotheses results.

4.1 Results

The entire profile of all 213 respondents is displayed in Table 1. It may be seen that 39.40% respondents were male and 60.60% were female respondents. For analysing the age category, 52.60% is the highest age ranging from 25 years old to 44 years old. The lowest age group is from the range 18 years old to 24 years old, that is 20.70%. 52.60% is the remaining age group from 25 years old to 44 years old. 73.30% of respondents have secondary school level of education. 25.80% and 0.90% are respondents who have tertiary education and primary school levels respectively. Income earnings among the respondents are varied, having the largest percentage holding is B2 RM2,501-RM3,170 (29.60%), followed by B3 RM3,171-RM3,970 (29.10%), B4 RM3,971-RM4,850 (28.20%) and B1 less than RM2,500 (13.10%). 42.30% of respondents are from Central Melaka District. However, Alor Gajah District and Jasin District stand for 29.60% and 28.20% respectively. For Table 2, every variable in this study has a Cronbach's alpha value greater than 0.70. As evidenced by reliability research, this implies great internal consistency, ensuring the instruments' high reliability and validity. Mean for each variable is shown as performance expectancy (3.8911), social influence (4.1408), innovativeness (3.7700), perceived technology security (4.0056), perceived trust (3.8808), perceived cost (3.5399), adoption of cashless payments (4.1005) and customer satisfaction (4.0498). Nevertheless, performance expectancy, social influence and innovativeness have 0.74261, 0.66423, 0.58296 standard deviations, respectively. Standard deviations of 0.47540, 0.56356, 0.55600, 0.59925 and 0.55488 are for performance expectancy, social influence, innovativeness, perceived technology security, perceived trust, perceived cost, adoption of cashless payments and customer satisfaction correspondingly. The results of this research model are presented in Table 3. From the findings, it shows that the model explained 76.80% of the variation in customer satisfaction explained by the adoption of cashless payments. According to [15], R square and the path coefficients' level of significance were used to assess the model's effectiveness. Performance expectancy has a significant relationship on cashless payments adoption among B40 income earners of Malaysia (t-values = 3.920, $p < 0.001$), supporting H1. In addition, social influence has a significant relationship on cashless payments adoption among B40 income earners of Malaysia (t-values = 7.378, $p < 0.001$), H2 is supported. The results have shown there are significant association between innovativeness (t-values = 1.802, $p < 0.001$), perceived technology security (t-values = 1.729, $p < 0.001$), perceived trust (t-values = 7.012, $p < 0.001$), perceived cost (t-values = -4.569, $p < 0.001$) and adoption of cashless payments (t-values = 13.43, $p < 0.001$). Thus, the findings substantially confirm hypotheses H3, H4, H5, H6 and H7, demonstrating that innovativeness, perceived technology security, perceived trust and perceived cost are significantly important determinants to adoption of cashless payments. Nonetheless, customer satisfaction is strongly influenced by adoption of cashless payments.

4.2 Discussion

The current research examined the impact of performance expectancy, social influence, innovativeness, perceived technology security, perceived trust and perceived cost on

adoption of cashless payments among B40 income earners of Malaysia. This study also investigated the effect of cashless payments adoption on customer satisfaction for B40 income earners of Malaysia. The findings as illustrated in Table 3 support H1, H2, H3, H4, H5, H6. The results stressed that performance expectancy, social influence, innovativeness, perceived technology security, perceived trust, perceived cost have a major significantly impact on the acceptance of cashless payments. If individuals obtain cashless remuneration, they will perform better at work and be more likely to accept cashless payment systems. This observation is consistent with the results of [24] and [19]. Coworkers, family and friends may influence how customers react when it comes to accepting cashless payments. This discovery confirms the results of a previous study [19, 28]. A person with strong information technology innovation skills may come to view the deployment of cashless payment systems more favourably. This finding is akin to the outcome reported by [8]. Customers would adopt a cashless system faster if they are more comfortable conducting cashless transactions. Consumers will desire to use cashless payments if they believe the cashless payment system is risk free and secure. Cashless payment service providers should upgrade data integrity, confidentiality and high security features on their payment systems to prevent customers be exposed with hackings and scams, in coherent with previous studies [24, 30]. Consumers with a high level of trust are more likely to generate positive feelings and accept new experiences of utilising cashless payment systems. Users prefer reliable and secure cashless payment services. Existing users place a high level of trust in cashless payments. As a result, they are eager to incorporate this payment technology into their daily purchasing habits and have a restricted number of payment service providers. This finding is a same outcome to [19] and [26]. The perceived cost is a substantial hurdle to adopting cashless payment systems. However, the individual customer's personality, particularly their desire for sensations, influences the path from adoption of cashless payment systems to customer satisfaction. This result is supported by the observations of [10] and [20]. Not only that, H7 is also supported by the outcome of this study. To increase customer satisfaction, cashless payment service providers should prioritise upgrading their cashless payment services. Satisfied customers are more likely to repeat purchase or reuse. This outcome is congruent with [14] and [17].

5 Conclusion

Rapid improvements in Internet technology have led to the creation of new web-based services and apps. Modern financial information technology, known as cashless payment systems, allows for recurring payments by acting as a middleman between consumers and service providers. Cashless payment services, which largely use cell phones as interface and transaction technology, provide users with a high level of ease. Cashless payment systems enable customers to use a mobile device to pay for bills, services and goods utilising wireless and other communication technologies. This study contributes much to theory by integrating performance expectancy, social influence, innovativeness, perceived technology security, perceived trust, perceived cost, adoption of cashless payments and customer satisfaction in the expectation-confirmation theory and

the UTAUT models. A comprehensive research model is designed by applying a multiple regression analysis. This empirical study confirms that performance expectancy, social influence, innovativeness, perceived technology security, perceived trust and perceived cost significantly impact on cashless payment systems adoption from B40 income earners in emerging markets such as Malaysia. Additionally, the significant findings add value to this study that customer satisfaction is significantly influenced by adoption of cashless payment services among B40 income earners of Malaysia. It is recommended that service providers not only highlight essential components that promote the spread of cashless payment services, but also work to reduce the negative consequences of not accepting and extending these services. Cashless payment systems providers should incentivise consumers to utilise their services by providing free gifts and minutes for each financial transaction as well as removing setup fees. For consumers who are satisfied with cashless payments, there are additional advantages and perks. On the other hand, dissatisfied customers fail to recognise these benefits and advantages. For this reason, businesses offering cashless payment services need to focus on these customers and devise strategies for inspiring them to achieve the Sustainable Development Goals (SDGs) 2030, specifically SDG 9: industry, innovation and infrastructure and SDG 11: sustainable cities and communities. There are several limitations to this study that offer intriguing avenues for further investigation. This study targeted those who have expertise with cashless payment services than the broader population. More research, such as comparing users and nonusers or focusing on Generations X, Y and Z, might be undertaken to determine whether the results differ. The research employed Likert scales and structured questionnaires. Qualitative studies may be utilised in future research to gather customer perspectives on the cashless economy.

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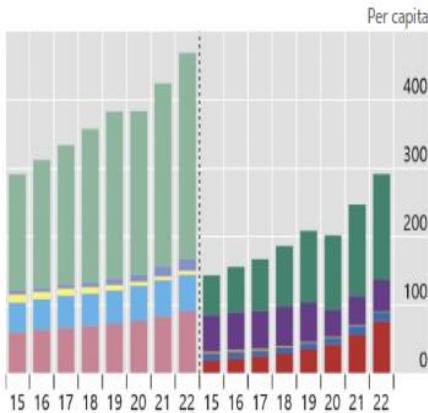
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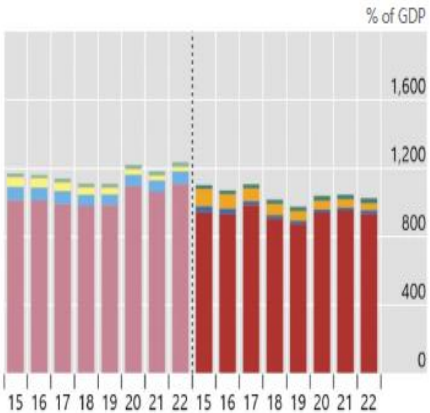
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Appendices

A. Volume



B. Value



AEs:
Credit transfers
Direct debits
Cheques
E-money payments¹
Card payments

EMDEs:
Credit transfers
Direct debits
Cheques
E-money payments¹
Card payments

¹ The distinction between card and e-money payments is not available for CA, CN, GB, MX, SA and ZA. For these countries, e-money payments might be included in card payments.

Fig. 1A. & 1B. Cashless payments in advanced economies (AEs) and emerging market and developing economies (EMDEs) [22]

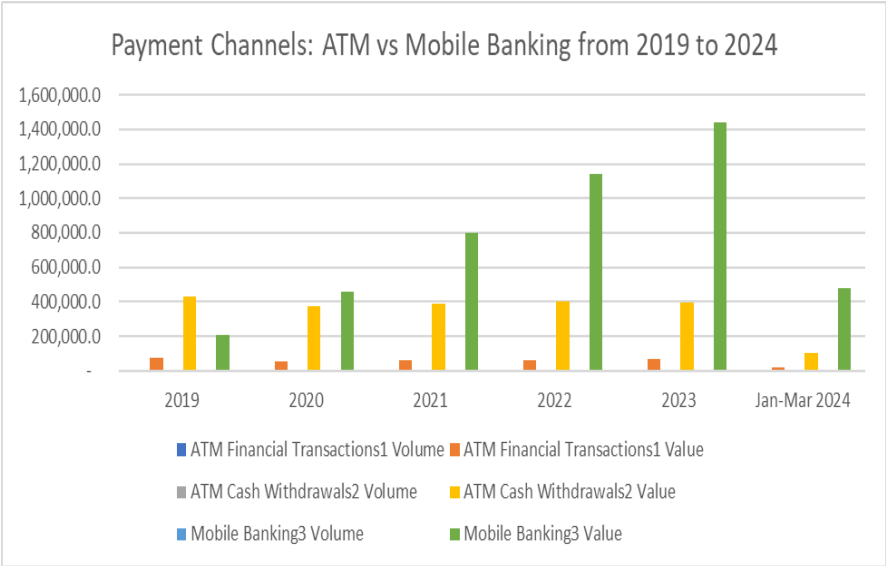


Fig. 2. Comparison payment channels between ATM and mobile banking from 2019 to 2024 [7]

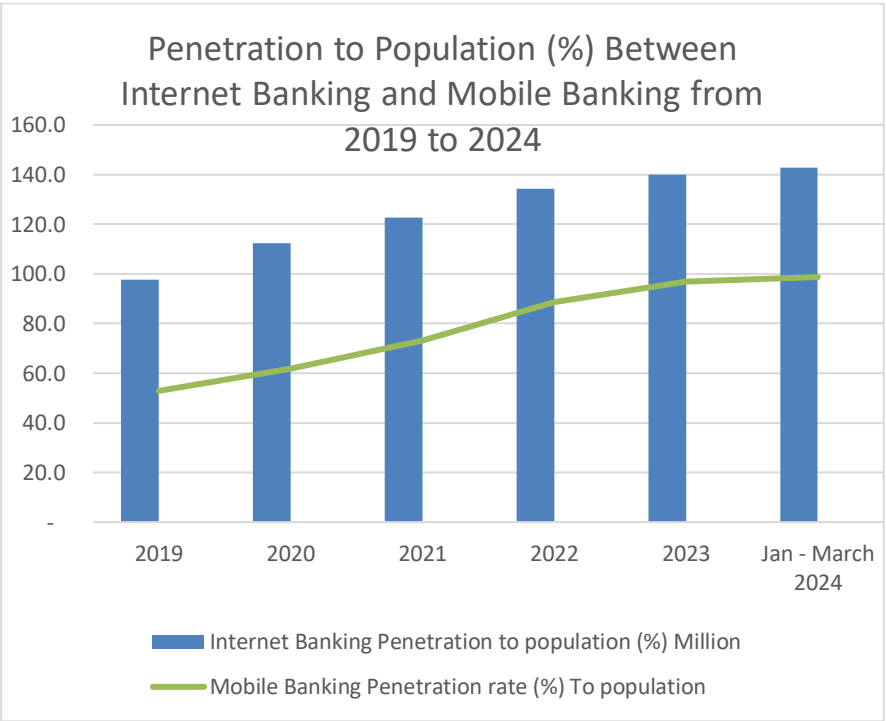


Fig. 3. The growth rate of penetration to population between Internet banking and mobile banking from 2019 to 2024 [7]

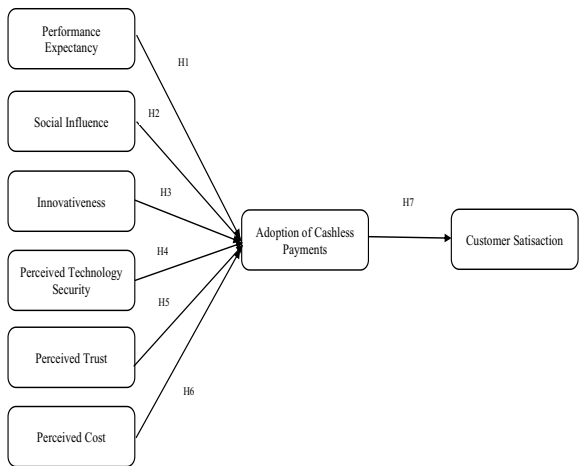


Fig. 4. The research framework

Table 1. Respondents’ demographic profile

Constructs	Characteristics	Frequency	Percent (%)
Gender	Male	84	39.40
	Female	129	60.60
Age	18-24	44	20.70
	25-44	112	52.60
	45-64	57	26.80
Level of Education	Primary School	2	0.90
	Secondary School (SPM/Equivalent)	156	73.30
	Tertiary Education	55	25.80
Level of Income	B1 Less than RM2,500	28	13.10
	B2 RM2,501 - RM3,170	63	29.60
	B3 RM3,171 - RM3,970	62	29.10
	B4 RM3,971 - RM4,850	60	28.20
Location (Melaka State)	Alor Gajah District	63	29.60
	Central Melaka District	90	42.30
	Jasin District	60	28.20

Table 2. Reliability and validity

Constructs	No. of Items	Mean	Standard Deviation	Cronbach's Alpha
Performance Expectancy	4	3.8911	0.74261	0.797
Social Influence	3	4.1408	0.66423	0.834
Innovativeness	3	3.7700	0.58296	0.728
Perceived Technology Security	3	4.0056	0.47540	0.779
Perceived Trust	5	3.8808	0.56356	0.730
Perceived Cost	3	3.5399	0.55600	0.862
Adoption of Cashless Payments	3	4.1005	0.59925	0.776
Customer Satisfaction	5	4.0498	0.55488	0.702

Table 3. Results and hypotheses tests

Hypothesis	Relationship	t-statistics	p-value	Decision
H1	Performance Expectancy -> Adoption of Cashless Payments	3.920	<0.001	Supported
H2	Social Influence -> Adoption of Cashless Payments	7.378	<0.001	Supported
H3	Innovativeness -> Adoption of Cashless Payments	1.802	<0.001	Supported
H4	Perceived Technology Security ->Adoption of Cashless Payments	1.729	<0.001	Supported
H5	Perceived Trust -> Adoption of Cashless Payments	7.012	<0.001	Supported
H6	Perceived Cost ->Adoption of Cashless Payments	-4.569	<0.001	Supported
H7	Adoption of Cashless Payments -> Customer Satisfaction	13.43	<0.001	Supported
R Square	0.768			
Adjusted R Square	0.762			
F value	113.962			
Significance F (p-value)	<0.001			

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