The International Review of Financial Consumers, Volume.8 Issue.2(December, 2023), 1-20 pISSN 2508-3155 eISSN 2508-464X
https://doi.org/10.36544/irfc.2023.8-2.1

The International Review of Financial Consumers

www.eirfc.com

The Moderating Role of Fintech App Usage in Lower-Income Households in Malaysia: A Financial Well-Being Roadmap

Mohamad Fazli Sabri† · Siti Shazwani Ahmad Suhaimi** · Nur Shuhamin Nazuri*** · Amirah Shazana Magli**** · Nik Ahmad Suffian Burhan***** · Mohd. Amim Othman******

A B S T R A C T

In Malaysia, the B40 group represents households with a monthly income below MYR4,850 (USD1,093), constituting the lowest 40% of earners facing economic challenges. Amid rising living costs and employment instability, managing finances becomes crucial. Fintech apps, known for accessibility and convenience, offer various financial services. A cluster sampling strategy was used to identify 1,948 B40 households from across Peninsular and East Malaysia to serve as the study's sample population. The data was obtained through a cross-sectional study then scrutinised via SEM-PLS. This study aims to determine factors such as locus of control, financial knowledge, and financial behaviour concerning the usage of fintech apps that impact the financial well-being of Malaysian B40 households. The study findings indicate a significant positive correlation between an individual's Financial Knowledge and Locus of Control toward Malaysia B40 Financial Well-Being. The study suggests that Financial Behaviour partially mediates the relationship between Financial Knowledge, Locus of Control, and Financial Well-Being. The study also indicates that Fintech App Use moderates the relationship between Financial Knowledge, Locus of Control, and Financial Well-Being. The present study contributes to the theoretical understanding of financial well-being by investigating the mediating and moderating factors influencing this construct.

Keywords: Financial Well-Being, Malaysia B40, Financial Knowledge, Financial Technology, Financial Behaviour

Ⅰ. Introduction

The increasing cost of living, escalating debt, and uncertainty in job prospects make it essential to have a strategic plan for managing finances and achieving financial security (Feige & Yen, 2021). A solid financial plan acts as a backbone, providing a sense of stability and security. It also paves the way for achieving financial goals, such as amassing a retirement fund, buying a house, or setting up a new business. By making judicious financial decisions, people can steer their financial position towards growth and stability. In the context of the digital era, smartphones and high-speed internet connectivity have significantly impacted the financial landscape. This widespread technological adoption has catalysed the growth of fintech companies that provide innovative financial services (Cumming et al., 2023), moulding the traditional

† Professor, Faculty of Human Ecology, Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia, fazli@upm.edu.my
** Ph.D. Candidate, Faculty of Human Ecology, Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia
*** Researcher, Faculty of Human Ecology, Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia
**** Researcher, Faculty of Human Ecology, Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia
***** Associate Professor, Faculty of Human Ecology, Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia
****** Senior Lecturer, Faculty of Human Ecology, Universiti Putra Malaysia, 43400 UPM, Serdang, Selangor, Malaysia

financial industry into a more accessible, convenient, and efficient sector.

According to a report from EY's Global Fintech Adoption Index, as of 2019, the adoption rate of fintech services stood at 64% globally, a figure which is likely to have grown given the recent digital acceleration (Ernst & Young, 2019). Furthermore, advances in technology, such as artificial intelligence (AI), blockchain, and cloud computing, have facilitated the creation of cutting-edge financial products and services that were unimaginable a few years ago. For instance, AI is enabling more personalised banking and investment services, blockchain is providing a new level of transparency and security (Suryavanshi et al., 2023), while cloud computing has significantly reduced the cost and time needed for transactions (Achar, 2021). Fintech applications, which provide easy access to a wide array of financial services such as banking, investment, budget planning, and payment processing, have been embraced by consumers worldwide for their user-friendly interfaces, accessibility, and convenience. For instance, Statista reported that the number of fintech start-ups worldwide reached 26,393 as of early 2023, demonstrating the industry's thriving ecosystem (Statista, 2023). Despite the convenience of fintech apps, they bring about legitimate concerns regarding their impact on users' financial well-being. As fintech applications become more integrated into our everyday lives, the question becomes: Do they enhance or hinder our control over financial health and progress towards financial prosperity?

It is crucial to understand that fintech apps can provide tools to better manage finances, offering instant access to financial information, budgeting tools, investment platforms, and more. However, these tools are most effective when used responsibly and with a solid understanding of their functions. Some studies suggest that the use of personal finance apps can lead to improved financial behaviours. A 2021 study published in the Journal of Behavioural and Experimental Finance found that using fintech apps could lead to increased savings rates (Kumar et al., 2022). That said, it is also important to be aware of potential risks such as cybersecurity threats and the possibility of overspending due to easy access to digital payments. Thus, while fintech apps can be a powerful tool in managing finances and working towards financial goals, their effective use also requires financial literacy, discipline, and a proactive approach to managing personal finances. As we move forward in this digital age, it is clear that fintech applications will continue to evolve and shape our financial behaviours (Dapp et al., 2014; Koskelainen et al., 2023). However, our control over our financial future largely depends on how effectively we utilise these digital tools and adapt to the changing financial landscape.

Financial literacy, particularly in the era of accelerating fintech advancements, is more crucial than ever. However, it is concerning that globally, financial literacy rates are not as high as they should be (Setiawan et al., 2021; Siddik et al., 2023). According to a survey by Standard & Poor Global FinLit Survey (Klapper et al., 2015), a mere 57% of adults in developed countries are financially literate. In less developed economies, the percentage is even lower. This lack of knowledge can lead to poor financial decisions and hinder financial stability. Parallel to the low rates of financial literacy is the rising utilisation of digital financial services. The World Bank's Global Findex Database indicates that 1.2 billion adults worldwide have gained access to a bank account since 2011, with over half of them securing their first account through a mobile money provider. With the continuous expansion of digital financial services, understanding these platforms and leveraging them effectively is becoming increasingly vital. This underscores the urgent need for financial literacy education to incorporate aspects of cybersecurity, equipping individuals with the knowledge necessary to safeguard their financial assets in the digital space.

As financial literacy is critical in today's fast-paced digital world, fintech innovations continue to revolutionise the way we manage money. Malaysia, like many other countries, is on the path of fintech adoption, and it is crucial to understand how financial literacy, financial behaviour, and fintech intersect, particularly among the Bottom 40% (B40) income group. According to research by the World Bank, just 36 percent of adults in Malaysia have adequate knowledge of financial concepts (Klapper et al., 2015). According to the findings of a survey carried out by the OECD, thirteen percent of respondents in Malaysia rated their own levels of (financial) knowledge as very low (OECD, 2016). The financial literacy rate among the B40 group, particularly, was found to be lower than the national average. Digital financial services offer opportunities for the B40 group to access financial services, and there has been a concerted effort to encourage fintech adoption among this group. According to Bank Negara Malaysia, digital payments adoption has increased from

1.4% in 2011 to 16% in 2019. Mobile banking adoption was at 47% in 2019, up from 17% in 2015. This digital adoption is expected to assist in achieving financial inclusion for underserved and underprivileged communities.

However, the rise of fintech also brings new challenges. According to the 2020 PwC Global Economic Crime and Fraud Survey, 47% of companies in Malaysia reported suffering from fraud. Cybersecurity and financial fraud are major concerns with the increasing use of digital financial services, highlighting the importance of financial literacy in understanding how to protect oneself. As for financial behaviour, the same AKPK survey found that only 15% of the B40 group have sufficient emergency savings, 25% often have outstanding credit card balances, and 40% do not have any form of retirement planning. Despite the increasing adoption of fintech services, poor financial behaviours persist, underlining the need for continued financial education. Overall, these facts highlight the importance of improving financial literacy to ensure that the benefits of fintech can be realised while mitigating associated risks, particularly among the vulnerable B40 group. As Malaysia continues to push for a digital economy, efforts to enhance financial literacy, instil good financial behaviours, and ensure cybersecurity, must be prioritised to ensure that no one is left behind. Therefore, this study seeks the need for financial knowledge and locus of control of B40 individuals to evolve concurrently with these digital advancements, ensuring that individuals are well-prepared to navigate this new financial terrain towards their financial well-being.

Ⅱ. Literature Review

A. Theoretical Background and Hypotheses Development

The current research utilises two theoretical frameworks: Ludwig von Bertalanffy's (1967) systems theory and Deacon & Firebaugh's (1988) family resource management model. Systems Theory, initially proposed in 1966 and subsequently developed, categorises the world into two fundamental elements: the environment and the system (Luhmann, et al., 2012). The Systems Theory examines the dynamic interplay between a system and its environment by assessing the system's outputs in relation to its goals or objectives. The Family Resource Management Model, derived from the Systems Theory and formulated by Deacon and Firebaugh (1988), serves as the underlying framework for the current research model (Figure 2). Past studies in the field of personal finance, including Hira (2012) and Mimura (2014), have recognised and supported the model. These scholars have outlined the three main components of the model, namely input, throughput, and output, to illustrate how families strategically plan and utilise their resources to fulfil their consumption needs. Van Campenhout (2015) and Serido et al. (2014) have stressed the importance of considering these three components in order to fully understand financial decision-making and its resulting outcomes. These scholars highlight the significance of comprehending how the input, throughput, and output factors interrelate when studying financial choices and their consequences. In a recent study conducted by Dari et al. (2021), a mediation model was proposed and examined, revealing the interconnectedness of financial behaviour, financial socialisation, and financial vulnerability. The findings of the study underscore the importance of considering all three components in order to gain a comprehensive understanding of financial decision-making and its subsequent outcomes. Deacon and Firebaugh (1988) identified three fundamental components that constitute the concept of the Family Resource Management Model. Lastly, the third component, output, pertains to the outcomes of the planning and action taken, serving as an overall assessment of goal achievement.

To further add strength to our study, we utilised the Unified Theory of Acceptance and Use of Technology (UTAUT) as a supporting theory. UTAUT is a model that aims to understand and explain individuals' acceptance and use of information technology and was developed by Venkatesh et al. (2003). The UTAUT model combines and extends several existing technology acceptance models, such as the Theory of Reasoned Action (TRA), the Technology Acceptance Model (TAM), the Motivational Model (MM), and the Theory of Planned Behaviour (TPB). It identifies several key factors influencing individuals' behavioural intentions to use technology and their actual usage behaviour. In the context of financial well-being, the Unified Theory of Acceptance and Use of Technology (UTAUT) helps to understand and explain the acceptance and use of technology in order to enhance individuals' financial well-being. This model provides insights into how technology can influence and improve individuals' financial well-being. This current study adopts the Family Resource Management Model, with Financial Knowledge and Locus of Control serving as input, Financial Behaviour as throughput, and Financial Well-Being as output. By utilising this model's input-throughput-output sequential process, this study aims to investigate the inter-relationships between Financial Knowledge and Locus of Control, Financial Behaviour, and Financial Vulnerability, while also exploring the influence of Fintech App Usage.

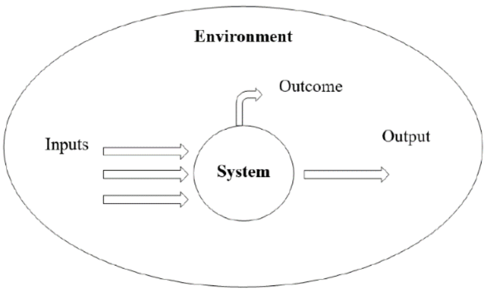

Figure 1. Illustration of Systems Theory (Deacon & Firebaugh, 1988)

B. Financial Well-Being

Financial well-being is a state where one can fully meet current and ongoing financial obligations, feel secure in their financial future, and make financial choices allowing them to enjoy life, which is a universal aspiration. However, financial vulnerability, a condition that affects people across all socioeconomic backgrounds, as highlighted by the study by Magli et al. (2021), can seriously hinder achieving this state. This vulnerability is particularly evident in Malaysia, where data from the Department of Insolvency (2020) reported 299,186 recorded bankruptcy cases from 2015 to 2019. This significant figure indicates a clear issue with financial stability across the nation, underscoring the urgent need for strategies to bolster financial well-being. Furthermore, the situation seems even more critical among the B40 group in Malaysia. High credit card debt among this group was the cause of a significant proportion of the bankruptcy cases recorded in 2018. A survey by the S&P Global FinLit found that only 36% of adults in Malaysia are financially literate. When focusing on the B40 group, this financial literacy rate drops even further, making this group particularly vulnerable to financial instability.

Moreover, according to a report by the Employees Provident Fund (EPF), more than 75% of Malaysians earning less than RM5,000 a month (which includes a significant portion of the B40 group) do not have sufficient savings to withstand financial shocks. This lack of financial buffer further exacerbates the financial vulnerability of the B40 group, often resulting in high debt levels and financial distress. The link between financial vulnerability and well-being is evident. Thus, these findings illustrate the importance of improving financial well-being among the B40 group. In light of the current economic challenges Malaysia faces, it becomes imperative to address the financial vulnerability of its most economically disadvantaged citizens, particularly the B40 group. This involves financial education initiatives, access to affordable financial services, and the promotion of healthy financial habits. By taking such actions, the financial well-being of this group can be improved, contributing to a more equitable and financially secure society.

The financial well-being of the B40 income group in Malaysia is a topic of significant research, with various studies shedding light on the complexities and challenges these households face. For instance, a recent study unravels the importance of socio-economic factors for this demographic. They discovered that income levels, employment status, education, and household size significantly influence the well-being of B40 households (Munisamy et al., 2022). Their findings suggest that strategies focusing on enhancing income and employment opportunities and improving access to education could substantially ameliorate the living conditions of these households. Further underlining the importance of education, a study elucidated the inverse relationship between financial literacy and financial distress among B40 households (She et al., 2021). The study strongly suggests that targeted financial education initiatives could be a powerful tool in alleviating financial distress and promoting overall financial well-being in the B40 group (Mansor et al., 2022; She et al., 2021).

Another study delved into the financial vulnerability of low-income households, which constitute a significant portion of the B40 group (Abid & Shafiai, 2018; Magli et al., 2021). Their study revealed that these households often adopt coping strategies like taking on additional work or borrowing money to handle financial distress. They concluded with the recommendation for more robust social safety nets and financial assistance programmes to bolster the financial well-being of these households. These demonstrate the multifaceted nature of financial well-being among the B40 group in Malaysia, underscoring the importance of comprehensive solutions that address income and employment opportunities, education, financial literacy, financial inclusion, and social protection.

C. Financial Knowledge

Financial knowledge is defined as the "knowledge and understanding of financial concepts and risks, and the skills, motivation, and confidence to apply such knowledge and understanding in order to make effective decisions across a range of financial contexts, to improve the financial well-being of individuals and society, and to enable participation in economic life" (OECD, 2013). Huston (2010) conceptualised financial knowledge as the knowledge of personal finance as well as the application of that knowledge. Financial knowledge is the "ability to use knowledge and skills to manage financial resources effectively for lifetime financial security" (Jump$tart Coalition, 2007). Elaborating on financial knowledge, it involves understanding the basics of personal finance, such as managing income and expenses, creating a budget, and tracking spending habits. It also encompasses knowledge about different financial products and services, such as bank accounts, credit cards, loans, mortgages, and investment vehicles (Sujaini, 2023). Financial knowledge empowers individuals to take control of their finances, enabling them to effectively manage their daily expenses, establish and maintain an emergency fund, plan for their children's education, and prepare for a secure retirement (Goyal & Kumar, 2020).

Previous literature has demonstrated that financial knowledge plays a crucial role in influencing financial well-being. Chatterjee et al. (2017) emphasised that financial knowledge helps individuals set realistic and achievable financial goals. By understanding the importance of setting goals, individuals can prioritise their financial objectives, such as saving for retirement, buying a house, or paying off debt. This clarity enables them to create effective strategies and allocate resources accordingly, leading to progress and improved financial well-being.

Additionally, enhanced financial knowledge helps individuals to better recognise fraudulent practices and prevent fraud (Engels et al., 2020). It increases their awareness of common scams, develops critical thinking skills to evaluate financial opportunities, and provides knowledge about financial products and identity theft protection. Overall, improved financial knowledge plays a vital role in deterring fraud and creating a safer financial environment. Financial knowledge empowers individuals with the knowledge, skills, and confidence to manage their money effectively. It enables them to set goals, budget, manage debt, save, invest, protect against risks, and make informed financial decisions. By improving financial knowledge, individuals can enhance their financial well-being, reduce stress, and work towards long-term security and prosperity.

H1. Financial knowledge significantly affects financial well-being.

D. Locus of Control

Research has consistently shown that locus of control plays a crucial role in influencing financial behaviour. Individuals who possess an internal locus of control tend to demonstrate responsible financial behaviours, such as budgeting, saving, and making informed financial decisions. They believe that their actions and choices have a direct impact on their financial well-being. On the other hand, individuals with an external locus of control are more prone to financial difficulties, as they attribute their financial outcomes to external factors beyond their control, leading to a sense of helplessness and a lack of proactive financial management (Anthony et al., 2021; Magli et al., 2021). Furthermore, studies have revealed that individuals with an internal locus of control are more likely to engage in long-term financial planning, establish emergency funds, and exhibit higher levels of financial literacy. They take ownership of their financial situation and actively seek opportunities for financial growth and stability. In contrast, individuals with an external locus of control may struggle with financial decision-making, display impulsive spending behaviours, and experience difficulties in managing debt and financial obligations (Churchill & Smyth, 2021; O'Connor & Kabadayi, 2020). It is important to note that locus of control is not a fixed trait and can be influenced and developed through various interventions, such as financial education programmes and counselling (O'Connor & Kabadayi, 2020). By promoting an internal locus of control and empowering individuals to take control of their financial lives, it is possible to improve financial behaviours, enhance financial well-being, and mitigate financial difficulties among individuals and communities (Sehrawat et al., 2021; Tyler et al., 2020).

Extensive research has consistently demonstrated the significant influence of locus of control on financial behaviour. Individuals who possess an internal locus of control tend to exhibit responsible financial behaviours and are more likely to make informed financial decisions. They believe that they have control over their financial outcomes and attribute their success or failure to their own actions and choices (Furnham & Cheng, 2017). These individuals take a proactive approach to their finances, engaging in activities such as budgeting, saving, and investing. They are more likely to seek out financial information, plan for the future, and practice self-discipline when it comes to managing their money. These individuals tend to perceive their financial outcomes as being influenced by external forces beyond their control, such as luck or fate (Galvin et al., 2018; Hampson et al., 2021). As a result, individuals with a strong external locus of control may experience higher levels of financial stress and struggle to effectively cope with financial stressors (She et al., 2021; Prawitz & Cohart, 2016). They may feel powerless in managing their finances and rely heavily on external factors for financial stability. This dependence on external factors can make them more susceptible to economic downturns, unexpected expenses, and financial difficulties. Moreover, individuals with an external locus of control may exhibit behaviours that further exacerbate their financial vulnerability. They may engage in impulsive spending, lack long-term financial planning, and rely on external sources of credit without considering the long-term consequences. This can lead to a cycle of financial instability and difficulties. Based on the aforementioned insights, we put forth the following hypothesis:

H2. Locus of control significantly affects financial well-being.

E. Mediation Effect of Financial Behaviour

It is essential for individuals, regardless of their level of wealth, to engage in financially responsible behaviour consistently. It involves a wide range of initiatives, including the drafting of a budget, the management of cash flow, the formulation of a spending plan, the prompt fulfilment of financial commitments, the efficient administration of credit, and the preparation of a retirement plan (Brown & Taylor, 2014; Grable et al., 2020). Engaging in risky financial behaviours, such as impulsive and unnecessary spending or excessive borrowing, can significantly increase an individual's vulnerability to financial hardships, particularly when their debt burden becomes unsustainable (Lea et al., 1995; LeBaron, 2021). Numerous studies have shown that adopting responsible financial behaviours contributes to better financial well-being and decreases the likelihood of experiencing financial difficulties (Sabri et al., 2020; Robb & Woodyard, 2011). Fei et al. (2020) highlighted that engaging in such behaviours can jeopardise financial well-being and lead to negative outcomes. It is essential to note that financial well-being is not limited to individuals with lower incomes, but impacts people across various income brackets. Additionally, Daud et al. (2019) found that factors such as income, marital status, education, and financial behaviour play a significant role in determining an individual's level of financial well-being. These findings underscore the importance of practicing responsible financial behaviour to enhance financial well-being and mitigate the risk of negative consequences.

Given the significance of financial behaviour in determining financial well-being, it is crucial for policymakers to develop strategies and initiatives that promote good financial habits from an early age. The integration of technology, fintech, and social media platforms can play a pivotal role in educating and promoting positive financial behaviour among young adults (Shim et al., 2009; Bartholomae & Fox, 2021). By leveraging these digital tools, financial education can be made more accessible, engaging, and tailored to the needs of young adults.

In addition, an individual's financial behaviour is shaped by their locus of control, with those who have a stronger internal locus of control tending to demonstrate more responsible financial behaviour. Individuals with a higher internal locus of control are often associated with having greater self-control, improved money management skills, and the ability to resist external influences and distractions, as well as the capacity to successfully tackle challenging tasks (Arifin & Anastasia, 2017). This internal sense of control empowers individuals to take ownership of their financial decisions and actions, leading to more prudent financial behaviours and positive outcomes. In contrast, individuals with a strong internal locus of control are more likely to take personal accountability for their financial decisions and their resulting outcomes (Kresnayana et al., 2020; Mutlu & Özer, 2021). This suggests that one's perception of control over financial matters significantly influences their financial behaviour, with those who believe in their ability to shape their own financial destiny exhibiting more responsible financial practices.

The rise of financial technology and social media has also increased everyone’s exposure to various financial products and information, which may further contribute to their willingness to take on financial risks (Ozili, 2020). Overall, these findings suggest that an individual's locus of control and generation can play a role in their financial behaviour and overall financial well-being. It is important for individuals to develop a strong internal locus of control and financial literacy skills to make informed and responsible financial decisions that contribute to their financial well-being (She et al., 2021; Ullah & Yusheng, 2020). Empowering individuals with a strong internal locus of control can help them feel more confident in their ability to manage their finances effectively. By instilling a belief that their financial outcomes are within their control, individuals can be motivated to take proactive steps towards improving their financial well-being. Based on the previous discussion and findings, we put forth the following hypothesis:

H3. Financial knowledge significantly influences financial behaviour.

H4. Locus of control significantly influences financial behaviour.

H5. Financial behaviour mediates the relationship between financial knowledge and financial well-being.

H6. Financial behaviour mediates the relationship between locus of control and financial well-being.

F. Moderation Effect of Fintech App Usage

The advent of innovative information technology has brought about a transformation in facilitating everyday commercial transactions, as highlighted by Salmony (2014). Innovations in financial technology have contributed to the creation of diverse business models that cater to the evolving needs of customers. Notably, the impact of new information technology extends to various economic aspects, including payment services, the banking industry, and financial regulations. This emergence of technology-driven advancements in the financial service industry is commonly referred to as "fintech", a term formed by combining "finance" and "technology". Fintech refers to the application of software and hardware to financial services and processes, making them faster, easier to use and more secure (Sam Daley, 2022). According to Philippon (2016), fintech encompasses digital innovations and technology-enabled business model innovations within the financial sector. Over the past few years, the term fintech has gained substantial global attention and has become increasingly prominent in driving incremental, radical, or disruptive innovation within the financial services industry. Malaysia is not exempt from the fintech revolution. In Malaysia, fintech application’s growth rate stands at 30% a year since it was introduced in this country (Alwi et al., 2019). The penetration rate of mobile application in Malaysia has an upward trend. The continuous emergence of fintech mobile applications serves as clear evidence of the ongoing innovation within the fintech industry. Malaysia has witnessed rapid growth in this field, with an increasing number of diverse innovations. Fintech plays a crucial role in Malaysia, where it has gained increasing importance for the national economy and holds substantial growth potential. Fintech innovation is widely expected to thrive in Malaysia, a country with a large middle class and increasing cell phone penetration and supportive government toward the digital economy (Alwi et al., 2019). Malaysian businesses and consumers also tend to be open to new technologies (International Monetary Fund, 2020).

In the realm of fintech, there are numerous mobile applications that cater to different financial needs and services. However, when it comes to the category of shopping apps, some of the prominent ones that have gained immense popularity are Shopee, and TikTok Shop (Techinasia, 2022). These fintech shopping apps have transformed the traditional retail landscape, providing individuals with quick, convenient, and personalised access to an extensive range of products and services (Metilda & Shamini, 2022). With secure payment gateways and user-generated reviews, these apps build trust and confidence among consumers. Furthermore, they utilise advanced algorithms to offer personalised recommendations, creating a tailored shopping experience for each user. They have effectively shaped and reshaped the shopping landscape, fuelling the growth of e-commerce and driving digital transformation in the retail industry. Mobile payment is experiencing widespread acceptance in developing countries, contributing to 35% of global growth, with a projected Compound Annual Growth Rate (CAGR) of 23.5% (Capgemini, 2019). Specifically, the Global Consumer Insight Survey (PWC, 2019) revealed that among the top ten countries embracing mobile payment, several are located in Southeast Asia, including Thailand, Vietnam, Indonesia, the Philippines, and Malaysia. Fintech shopping apps have experienced immense popularity in Malaysia (Metilda & Shamini, 2022). Based on monthly active user statistics from both Apple and Android phones, the five most popular mobile payment apps that have gained significant popularity in Malaysia are GrabPay, Touch n' Go, eWallet, BoostPay, Fave, and BigPay (Chew, 2019). The growing acceptance of these emerging platforms signifies a degree of technological convergence within Malaysia's digital ecosystem, creating favourable conditions for the successful implementation and commercialisation of similar platforms (Lai & Scheela, 2018).

Fintech, which stands for financial technology, has gained significant traction in recent years due to advancements in digital technology and the need for more convenient and efficient financial services. Fintech brings financial services to more people by leveraging digital technology and eliminating geographical barriers. Through mobile banking, online platforms, and digital wallets, individuals can access financial services conveniently, even without a physical presence of a bank branch (Tenorio, 2021). On the other hand, fintech has disrupted traditional banking models by reducing overhead costs associated with brick-and-mortar branches. As a result, many fintech companies offer financial services at lower fees and reduced transaction costs. This cost-effectiveness benefits both consumers and businesses (GDS Modellica, 2022). Besides, fintech solutions have significantly improved the convenience of financial transactions (GDS Modellica, 2022). Users can perform banking activities such as transferring funds, paying bills, and managing investments from the comfort of their homes or on the go through mobile apps. However, like any other industry, fintech also has its disadvantages. One of the disadvantages of fintech usage in Malaysia is the potential increase in cybersecurity risks. With the adoption of digital financial services and online transactions, there is an elevated risk of cyber threats, such as hacking, data breaches, and identity theft.

Fintech usage has greatly influenced how people manage their finances and make financial decisions. Through the adoption of mobile payment apps, digital wallets, and online investment platforms, fintech has brought about significant changes in financial behaviour. According to a survey conducted by Business Insider (2020), 67% of Malaysian individuals choose to use cashless payments over cash payments. This adoption of digital payments has reduced reliance on cash and traditional banking methods, providing convenience and efficiency in financial transactions. Besides, fintech apps often offer features that help users track their expenses and manage their money more effectively. By having a clearer picture of their spending patterns, individuals can make more informed decisions about their purchases and develop better spending habits (ElHaffar et al., 2020; Testa et al., 2020). Fintech tools have empowered individuals to take charge of their financial planning and management. Budgeting apps, expense trackers, and financial management platforms allow users to set financial goals, track their progress, and manage their finances more effectively (Bagwell et al., 2014). Having confidence in the ability to manage one’s financial situation is key to improving financial well-being (Fernandes et al., 2014; Letkiewicz et al., 2016). It empowers people to take control of their finances, make informed decisions, alleviate stress, and develop

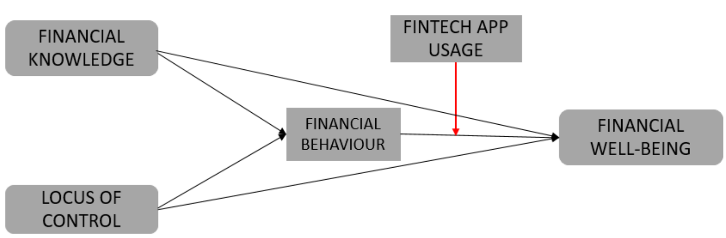

Figure 2. Conceptual framework

resilience. This self-assurance serves as a motivation to cultivate healthy financial habits and strive towards a more prosperous future.

H7. Fintech App Usage moderates financial behaviour towards financial well-being.

Ⅲ. Methodology

A. Data Sampling

A cross-sectional study was performed to collect the data to achieve the objective of the research. A multistage sampling approach was utilised to select respondents from B40 households across Malaysia. The researchers obtained respondent information by utilising the National Household Sampling Frame (NHSF) and following the guidance of the Department of Statistics Malaysia (DOSM). After dividing Malaysia into five zones, one state was chosen at random from each zone through a ballot. As a result, Pulau Pinang was selected for the North zone, Johor for the South zone, Pahang for the East zone, Selangor for the West zone, and Sabah for the East Malaysia zone. 400 respondents represented each state, contributing a total of 2,000 respondents, by which only 1,948 data were accepted after cleaning the missing values and straight-lining errors. Referring to G-power analysis, with an alpha value of 0.05 and a magnitude power of 0.95, the appropriate number of samples to run a path analysis is 210 respondents. Having a big sample size is not a problem as Najib (1999) emphasised that bigger sample size will strengthen the reliability and validity. The data collection process involved the use of self-administered questionnaires, allowing respondents to complete the task without interruption from researchers. The questionnaire was designed to be completed within approximately 20 minutes, and once respondents finished answering the questions, they returned the questionnaire. The researchers conducted descriptive analysis and path analysis to examine the demographics of the respondents and assess the proposed hypotheses. Structural Equation Modelling (SEM) using Partial Least Squares (PLS-SEM) was employed to analyse the relationships among various variables in the study. This approach allowed for a comprehensive examination of the interconnections between the variables. The primary objective of PLS-SEM is to assess the effectiveness of a proposed theoretical model in estimating the covariance matrix for a sample dataset and its ability to explain the variance in endogenous variables. PLS-SEM is considered the most suitable analysis approach for examining direct and indirect paths, as it allows for an investigation of the relationships between independent, mediator, moderator, and dependent variables (Hair & Ringle, 2011). Additionally, this research framework incorporates new variables into existing theories. Therefore, based on the studies by Henseler et al. (2009) and Hair et al. (2013), PLS-SEM is deemed the most appropriate analysis approach for conducting the current study.

B. Data Measurement

The questionnaire consists of demographic information and the socioeconomic backgrounds of the respondents. There are further questions on financial knowledge, locus of control, financial behaviour, fintech app usage and financial well-being. To gauge the level of financial knowledge among respondents, a set of ten true or false questions was used. The questions were designed to assess various domains of financial knowledge, including savings, investment, general financial knowledge, credit cards, and financial products. The scale was adapted from a Malaysian-based study conducted by Sabri et al. (2006). A higher score, indicating a greater number of correct answers, reflects a higher level of financial knowledge. The measurement of locus of control used in this study was based on the items developed by Sumarwan and Hira (1993). It consisted of both internal and external locus of control items, which assess individuals' beliefs regarding their control over situations. The respondents were asked to rate their agreement with the provided statements on a four-point Likert scale, ranging from Strongly Disagree (1) to Strongly Agree (4). The internal consistency of the scale was evaluated using Cronbach's Alpha, and a value of 0.83 was reported, indicating good reliability. To assess the financial behaviour of the B40 group, statements from the financial behaviour item developed by Kapoor et al. (2001) were utilised. The scale comprised 10 statements that aimed to capture various aspects of financial behaviour. The reliability of the scale was evaluated using Cronbach's Alpha, and a value of 0.781 was reported, indicating a satisfactory level of internal consistency.

To assess the financial well-being (FWB) of B40 households, eight items were adapted from a questionnaire specifically designed for the Malaysian context. The questionnaire, known as the Malaysian Financial Well-Being Scale (MFWBS), was originally developed by Garman and Jariah and later utilised in a study conducted by Mokhtar and Husniyah in 2017. The scale measures various aspects of FWB, including overall financial satisfaction, ability to cover daily expenses, financial planning, recent financial satisfaction, and financial sustainability. The scale consists of eight positively-worded items, which are scored on a 4-point Likert scale ranging from "Strongly Disagree" to "Strongly Agree" (1 to 4). A higher total score indicates a higher level of FWB among the respondents. During the validation process of an instrument, the content and face validation primarily concentrate on the relevance of the addressed material, the accuracy of the questionnaire's wording, and the adequacy of the sampled items for measuring the construct (Ary et al., 2010). In the present study, two subject matter experts, who were selected from ethics committee boards, were involved as reviewing experts. Their role was to assess the content validity of the items, specifically evaluating their clarity and readability.

Ⅳ. Results and Discussion

A. Profile of Respondents

Table 1 displayed the demographic characteristics of the respondents in this study. The age group of 41-60 years old constituted the largest proportion of participants (45.32%), and there was a greater number of males (67.8%) compared to females. In the present study, a significant proportion of the participants are Malay, constituting approximately 69.8% of the total sample. This indicates that the majority of the participants belonged to the Malay ethnic group. Furthermore, a substantial portion of the participants, accounting for 69.7% of the sample, reported being married. Furthermore, a detailed analysis reveals that a significant proportion of the participants, specifically 77.24% of them, had completed their secondary education. This finding suggests that the majority of the participants had attained at least a secondary school education level. In terms of income, the data shows that over 54.4% have income less than RM2000 and only 0.3% respondents have income of more than RM6001. This indicates that a considerable proportion of the participants had relatively low-income levels but a negligible number of participants had higher income levels in comparison to the rest of the sample.

Table 1. Descriptive Analysis

Variable	Frequency	Percentage (%)
Age Group		
< 20	12	14.76%
20-40	737	37.8%
41-60	883	45.32%
61-80	305	1.56%
>81	11	0.56%
Gender		
Male	1320	67.8%
Female	628	32.2%
Ethnicity		
Malay	1360	69.8%
Chinese	157	8.1%
Indian	162	8.3%
Bumiputera Sarawak	68	3.5%
Bumiputera Sabah	124	6.4%
Others	6	4.1%
Marital Status		
Single	298	15.29%
Married	1358	69.7%
Divorced	249	12.8%
Widow/ Widower	43	2.2%
Level of Education		
Secondary Education	1463	77.24%
Tertiary Education	431	22.76%
Income		
No Income	306	15.7%
Less than RM2,000	1060	54.4%
RM2,001-RM4,000	529	27.2.%
RM4,001-RM6,000	49	2.5%
Above RM6,001	4	0.3%

B. Measurement Model

The purpose of the measurement model is to evaluate the reliability and validity of the items. In a reflective measurement model, there are three criteria that should be considered: internal consistency reliability, convergent validity, and discriminant validity. Reliability is evaluated using measures such as Cronbach's Alpha (CA) and composite reliability (CR). The CA and CR results for Locus of Control (LOC) (0.778, 0.95), Financial Behaviour (FB) (0.856, 0.89) and Financial Well-Being (FWB) (0.891, 0.91), Financial Knowledge (FK) (1.00, 1.00) and Financial Apps Usage (FAU) (1.00, 1.00) are portrayed in Table 2. The CR and CA values reported fall within the acceptable range as they exceed 0.7, which is in line with the criteria established by Hair and Ringle (2011). In addition, to establish convergent validity, the researchers calculated the AVE values. The AVE values were 1.000 for FK, 0.44 for LOC, 0.46 for FB, and 0.57 for FWB. As suggested by Henseler, Hubona, and Ray (2016), it is considered acceptable that all AVE values exceeded the threshold of 0.5. To evaluate discriminant validity, the heterotrait-monotrait ratio (HTMT) was employed as a measurement tool, as proposed by Fornell and Larcker (1981). Based on the results presented in Table 3, the HTMT values demonstrated that all values exceeded the threshold of 0.85, as proposed by Kline (2011). These findings indicate that the reflective measurement model successfully satisfies the criteria for discriminant validity.

Table 2. Measurement Model

Constructs	Loadings	α	CR	AVE
Locus of Control (LOC)				
G2	0.678			
G3	0.689			
G4	0.685			
G5	0.693	0.778	0.95	0.44
G6	0.596			
G7	0.627			
G8	0.572			
Financial Behaviour (FB)				
F1	0.533			
F2	0.690			
F3	0.726			
F4	0.734			
F5	0.728	0.856	0.89	0.46
F6	0.703			
F7	0.691			
F9	0.593			
F10	0.700			
Financial Well-Being (FWB)				
VH1	0.670			
VH2	0.778			
VH3	0.674			
VH4	0.818	0.891	0.91	0.57
VH5	0.797			
VH6	0.762			
VH7	0.751			
VH8	0.762			
Financial Knowledge (FK)				
FK1	1.00	1.00		
Financial Apps Usage (FAU)				
FAU 1	1.00	1.00		

Note: Average Variance Extracted (AVE); Cronbach’s Alpha (CA); Composite Reliability (CR)

Table 3. Heterotrait-Monotrait ratio (HTMT)

	Heterotrait-Monotrait Ratio (HTMT)				
Construct	FB	FK	FWB	FAU	LOC
FB					
FK	0.011				
FWB	0.904	0.010			
FAU	0.018	0.001	0.016		
LOC	0.857	0.010	0.900	0.018	

Note: Financial Behaviour (FB); Financial Knowledge (FK); Financial Well-Being (FWB); Financial Apps Usage (FAU); Locus of Control (LOC)

C. Assessment of Structural Model

After completing the measurement model, an evaluation of the structural model was conducted. The structural model depicts the underlying concept of the path model. Through the evaluation of the structural model, researchers can assess the extent to which the empirical data supports the concepts proposed in the research framework. The purpose of the structural model is to examine the relationships among the constructs as suggested in the research model. The evaluation of the structural model in PLS-SEM involves several key criteria: checking for collinearity issues (Step 1), evaluating the significance of path coefficients (Step 2), examining the R^2 value (Step 3), assessing the effect size (f^2) (Step 4), and evaluating the predictive relevance (Q^2) (Step 5). To evaluate the structural model in this study, 5000 bootstraps were utilised. Table 4 presents the VIF (Variance Inflation Factor) values for all constructs in the structural model. The results indicated that there were no collinearity issues within the model, as all VIF values were 1.00, which is below the threshold of <5 as recommended by Hair et al. (2017). The significance of the path coefficients for all constructs in the current study was displayed in Table 5. The results portrayed that Financial Knowledge (FK) and Locus of Control (LOC) contributed to Financial Behaviour (FB) positively with (β=0.019, $p<0.05$) and (β=0.857, $p<0.00$) respectively. Besides that, Financial Behaviour (FB) positively contributed Financial Well-Being (FWB) (β=0.304, $p<0.00$). Nevertheless, the findings showed that Financial Apps Usage (FAU) has a negative significant effect on Financial Well-Being (FWB) with β= -0.037, $p<0.05$. The results in Table 6 also showed that the R^2 value for Financial Behaviour (FB) is 0.735, suggesting that 73.5% of the variance in Financial Behaviour (FB) was explained by Financial Knowledge (FK) and Locus of Control (LOC). Meanwhile, for Financial Well-Being (FWB), the R^2 value is 0.818 which stated that 81.8% was explained by Financial Behaviour (FB) and Fintech App Usage (FAU). The results of effect size indicate that Financial Knowledge (FK) has no effect size on Financial Vulnerability (FV). Besides, Financial Apps Usage (FAU) also showed a similar result to Financial Well-Being (FWB). However, Locus of Control (LOC) showed a large effect size on Financial Behaviour (FB) with a value of 2.771 while Financial Behaviour (FB) also showed a large effect size on Financial Well-Being (FWB) with a value of 4.482. The Q^2 of Financial Behaviour (FB) and Financial Well-Being (FWB) are 0.710 and 0.785 which signifies that the research model has a good predictive relevance, with Q^2 values larger than zero. The mediating results displayed in Table 7 indicate that Financial Behaviour (FB) significantly mediates the relationship between Financial Knowledge (FK) and Locus of Control (LOC) towards Financial Well-Being (FWB) with β= 0.775 and β=-0.017, $p<0.05$ respectively. The indirect effect of 0.775, 95% Boot CI: [LL= 0.433, UL = 1.000] shall not straddle a zero in between indicating that Financial Behaviour (FB) positively mediates the relationship between Financial Knowledge (FK) and Financial Well-Being (FWB). The indirect effect of 0.017, 95% Boot CI: [LL= 0.004, UL = 0.030] shall not straddle a zero in between indicating that Financial Behaviour (FB) positively mediates the relationship between Locus of Control (LOC) and Financial Well-Being (FWB). For moderating effect, Financial Behaviour (FB) showed a significant difference between Financial Apps Usage (FAU) and Financial Well-Being (FWB) (Table 8). The results indicate that Financial Behaviour (FB) negatively moderates the relationship between Financial Apps Usage (FAU) and Financial Well-Being (FWB). The R^2 value for Financial Behaviour (FB) is 0.818, suggesting that 81.8% of the variance in Financial Behaviour (FB) was explained by Financial Knowledge (FK) and the Locus of Control moderated by Financial Apps Usage (FAU). The results of effect size indicate that Financial Behaviour (FB) and Financial Apps Usage (FAU) have no effect size on Financial Well-Being (FWB).

Table 4. Variance Inflation Factor (VIF) of all Constructs

Exogenous Variables	FB	FWB
FB		1.00
FK	1.00	
FAU		1.00
LOC	1.00	

Note: Financial Behaviour (FB); Financial Knowledge (FK); Financial Well-Being (FWB); Financial Apps Usage (FAU); Locus of Control (LOC)

Table 5. Path Coefficient Result (Direct Effect)

Relationship	Original Sample	Sample Mean	Standard Deviation	t-value	p-value	Decision
LOCàFB	0.857	0.852	0.088	9.735	0.000	Significant
FKàFB	0.019	0.019	0.009	2.023	0.043	Significant
FBà FWB	0.304	0.901	0.071	12.771	0.000	Significant
FAUà FWB	-0.037	-0.037	0.015	2.450	0.014	Significant

Note: Financial Behaviour (FB); Financial Knowledge (FK); Financial Well-Being (FWB); Financial Apps Usage (FAU); Locus of Control (LOC)

Table 6. Indices of Structural Model

Relationship	Coefficient Determination (R^2)	Effect size (f^2)	Predictive relevance (Q^2)
LOCàFB	0.735	2.771	0.710
FKàFB		0.000	
FBà FWB	0.818	4.483	0.785
FAUà FWB		0.000	

Note: Financial Behaviour (FB); Financial Knowledge (FK); Financial Well-Being (FWB); Financial Apps Usage (FAU); Locus of Control (LOC)

Table 7. Mediating Effect Result (Indirect Effect)

Path	OS	SE	SD	95% Bias Corrected Confidence Interval		t- value	p- value	Mediation
				LL	UL			
FKàFBàFWB	0.775	0.773	0.130	0.433	1.000	5.384	0.000	Partial mediation
LOCàFBàFWB	0.017	0.017	0.007	0.004	0.030	2.430	0.013	Partial mediation

Note: Financial Behaviour (FB); Financial Knowledge (FK); Financial Well-Being (FWB); Locus of Control (LOC); Original Sample (OS); Sample Mean (SM); Standard Deviation (SD)

Table 8. Moderating Effect Result

Relationship	Beta	Standard Error	t-value	p-value	Decision	Coefficient Determination (R^2)	Effect size (f^2)
FB* FAUàFWB	-0.516	0.130	2.717	0.007	Significant	0.818	4.482

Note: Financial Apps Usage (FAU); Financial Behaviour (FB); Financial Well-Being (FWB)

Ⅴ. Discussion

The findings of the study provide insights into the financial well-being of low-income households in Malaysia (B40). This research examined the main factors contributing to the financial well-being (FWB) of these households, which included financial behaviour (FB) and fintech app usage (FAU) as independent variables. Furthermore, this study also examined the relationship between locus of control (LOC) and financial knowledge (FK) with financial behaviour (FB). The results showed that financial knowledge (FK) and locus of control (LOC) were found to have a positive influence on financial behaviour (FB). These findings are supported by Mien and Thao (2015) and Baptista and Dewi (2021). In contrast, the study found that financial behaviour (FB) positively influenced financial well-being (FWB), whereas the usage of fintech apps (FAU) had a negative impact on the financial well-being (FWB) of the urban poor community.

Locus of control (LOC) is found to be the most influencing factor compared to financial knowledge (FK) in predicting financial behaviour (FB) of the low-income group in Malaysia. The study suggests that individuals with a stronger internal locus of control, who believe they have control over their financial outcomes, are more likely to exhibit positive financial behaviours. On the other hand, financial knowledge alone may not be sufficient to drive significant changes in financial behaviour if individuals do not perceive themselves as having control over their financial situations. Due to the ever-increasing cost of living, those who fall into the B40 income bracket and who live in urban areas, frequently have trouble maintaining a quality of living that is considered to be satisfactory. They have a variety of difficulties in dealing with the costs associated with housing, healthcare, education, transportation, and the essentials of daily life. Because of this, a considerable percentage of their meagre income may be eaten up by these expenses, leaving them with little opportunity for savings or financial stability. The inability to save money for unexpected expenses, retirement, or future investments is one of the top problems of individuals in the B40 income bracket. The study conducted by Khazanah Research Institute in 2016 revealed a concerning trend among B40 households in Malaysia, which shows that these households were found to spend approximately 95 percent of their income on consumption items listed in the household expenditure survey.

As a result of the exorbitant cost of living in urban areas, a significant number of individuals have chosen to relocate and seek opportunities in suburban and rural areas. The high cost of living in urban areas has driven many individuals to seek more affordable living conditions in suburban and rural areas. These regions often offer lower housing costs, reduced transportation expenses, and a relatively slower pace of life. Individuals are attracted to the prospect of a lower cost of living and the potential to stretch their income further. This trend sheds light on the financial challenges faced by individuals residing in this region. Surprisingly, Kedah has emerged as the third state in Malaysia with the highest bankruptcy rates (Department of Insolvency, 2023). The prevalence of bankruptcy cases in Kedah highlights the underlying financial difficulties faced by its residents. While Kedah may be perceived as a less bustling state compared to urban centres, the financial burdens faced by its population are evident. The reasons for bankruptcy can vary, including mounting debts, financial mismanagement, job loss, or business failure. These factors contribute to the financial distress experienced by individuals, leading to the declaration of bankruptcy. The higher bankruptcy rates in Kedah indicate the need for effective financial management, access to financial education, and support systems to help individuals navigate through financial challenges. It is crucial for individuals in Kedah and other similar regions to have access to resources and programmes that promote financial literacy, debt management, and entrepreneurship.

The presence of instalment payment options within various apps, such as Shopee, and dedicated instalment payment platforms like ShopBack and Atomee, have created an environment that fosters impulsive buying behaviour. These instalment payment systems allow individuals to easily purchase items they desire, rather than focusing on what they truly need. This convenience and accessibility can lead to increased spending and potentially exacerbate financial difficulties for B40 individuals. It is essential to recognise that while instalment payment options can provide short-term convenience, they can also perpetuate a cycle of debt if not used responsibly. B40 individuals, who may already face financial constraints, can be particularly vulnerable to the allure of instalment plans. Without proper financial education and control, they may become trapped in a cycle of accumulating debt, which can hinder their financial well-being in the long run.

In terms of mediation, the results showed that financial behaviour (FB) mediates the relationship between financial knowledge (FK) and locus of control (LOC) towards financial well-being (FWB). The study found a significant positive relationship between financial behaviour (FB) and financial well-being (FWB) among the poor urban community in Malaysia. This aligns with a previous research by Zaimah (2019) that also reported a positive association between financial behaviour (FB) and financial well-being (FWB). These findings suggest that individuals who exhibit positive financial behaviours such as budgeting, saving, and responsible spending, are more likely to experience higher levels of financial well-being. By engaging in prudent financial practices, individuals can enhance their financial security and overall well-being. As for moderation analysis, the usage of fintech apps (FAU) has a significant and negative influence on moderating the relationship of financial behaviour (FB) and financial well-being (FWB) of the poor urban community in Malaysia. It is important to recognise that the desire to have a stylish lifestyle and display an image of wealth often serves as a driving factor in purchasing expensive items such as luxury cars, stylish homes, or high-end electronic devices. B40 individuals, who may face financial constraints, may feel compelled to buy these items through debt in order to fit into the ongoing trend of wealth. One of the influencing factors behind this tendency is the influence of social media and consumer culture which involves the mindset of "fitting in" or "conforming". The presence of social media showcases glamorous and often unrealistic portrayals of life, which can trigger individuals' desires to achieve a similar lifestyle. Facts indicate that ownership of expensive electronic devices such as iPhones and other luxury products has increased among the low-income segment. According to a report from Kantar Worldpanel ComTech, in 2020, 28% of iPhone users in Malaysia came from low-income households. This suggests a tendency to shop based on desires and lifestyle, even if it may not align with an individual's financial situation. However, it is important to understand that fulfilling these desires through debt and purchasing expensive items does not directly contribute to long-term financial well-being. Overreliance on debt to sustain an expensive lifestyle can lead to unmanageable debts and financial difficulties in the future.

Using a financial technology app can lead to excessive spending, which can be caused by a number of different circumstances. The convenience of use that these apps give is a primary factor that contributes to impulsive purchasing behaviour. Users are able to make purchases with only a few clicks thanks to quicker checkout processes, saved payment information, and personalised recommendations. Because of this, it is extremely convenient for users to engage in impulsive buying without fully understanding the repercussions of their actions. Studies have shown that those who use shopping apps are more likely to make impulse buys. People may be tempted to make rash decisions about their finances and long-term goals due to the availability and ease of use of these apps, as well as the persuasive marketing strategies that accompany them. Do et al. (2020) and Chopdar et al. (2022), for example, found that the ease and availability of mobile shopping apps relate to users' propensity for impulsive purchases. Overusing the convenience of online purchasing might put unnecessary strain on a person's budget. Overspending, credit card debt, and other financial problems are all possibilities when it is so simple to shop with a smartphone app. Their economic security may be jeopardised as a result of this. In line with this research findings, it has been shown that individuals who have fewer fintech apps tend to have better control over their financial behaviour, leading to improved financial well-being. This emphasises the significance of combining financial knowledge and locus of control to shape responsible financial behaviour, ultimately contributing to enhanced financial well-being.

Ⅵ. Conclusion

Individuals who possess a strong grasp of personal finance and money management are more inclined to make prudent financial choices, exercise self-control, and avoid excessive spending. Financial education plays a critical role in providing individuals with the knowledge and skills required to navigate the online shopping landscape responsibly. Research has demonstrated that financial literacy positively impacts financial behaviour. According to a study conducted by the OECD in 2017, individuals with higher levels of financial literacy are more likely to compare prices, plan their purchases, and resist impulsive buying tendencies (Khoirunnisaa & Johan, 2020). They are also more inclined to set financial goals, create budgets, and save for the future. Furthermore, a study also found that financial education programmes have a positive influence on individuals' financial behaviour, leading to improved financial well-being and reduced financial stress (Warmath & Zimmerman, 2019). Participants in financial education programmes exhibited greater knowledge about budgeting, saving, and managing debt, which resulted in better financial decision-making and improved financial outcomes.

In Malaysia, efforts have been made to enhance financial literacy among the population. The National Strategy for Financial Literacy 2019-2023, initiated by Bank Negara Malaysia, aims to improve financial literacy levels among Malaysians and empower individuals to make informed financial decisions. Various financial education initiatives and programmes have been implemented, targeting different segments of the population, including young adults, low-income individuals, and entrepreneurs. However, the level of financial literacy among Malaysians remains relatively low. This raises questions about the effectiveness of the mediums used, the extent to which programmes have been implemented, and whether individuals are more influenced by influencers on platforms like Instagram and TikTok when it comes to shaping their financial behaviour.

The government and NGOs need to implement new initiatives. One example could be organising financial knowledge courses in every company, regardless of whether they are private or government-owned, and making them mandatory for all employees. By making these courses compulsory, individuals would have the opportunity to acquire the necessary financial knowledge and skills to manage their finances wisely. Additionally, financial literacy programmes should be presented in a more creative and engaging manner to capture the interest of the public. Apart from financial literacy programmes, the government should also promote responsible financial practices through stricter regulations regarding advertisements and promotions related to financial products and services. This would help reduce the negative influence of advertisements that may encourage impulsive behaviour or uncontrolled spending. Furthermore, a closer collaboration between the government, financial institutions, and influencers on social media can be an effective strategy to strengthen the message of financial literacy. By leveraging the popularity and reach of influencers on platforms such as Instagram and TikTok, messages about the importance of sound financial management can be delivered more extensively to the public.

In order to improve financial well-being among the B40 individuals, it is crucial to make financial education materials readily available and easily understandable. These materials should be accessible through various mediums such as websites, mobile applications, and community centres, ensuring that individuals from different backgrounds can easily access them. Additionally, when designing educational content, it is important to avoid programmes that promise unrealistic outcomes. Instead, the focus should be on providing practical knowledge and skills that individuals can apply in their real-life financial situations. By recognising the unique challenges and perspectives of different communities, educational content can be tailored to address specific needs and reflect the realities and aspirations of the target audience. By setting standards for transparency, affordability, and responsible lending, individuals can make informed decisions when it comes to borrowing and managing their finances. In summary, promoting financial literacy and responsible financial behaviour requires a multi-faceted approach involving accessible educational materials, collaboration among stakeholders, and a focus on practical knowledge and skills. By fostering a supportive ecosystem and equipping individuals with the necessary tools, B40 individuals can make informed financial decisions and improve their financial well-being.

Acknowledgment

This research work was supported by the Ministry of Higher Education Malaysia through the Long-Term Research Grant Scheme–Malaysia Research University Network (LRGS-MRUN), project code (LRGS/1/2016/UKM/02/1/4) entitled “Determinants of Financial Well-being among B40 Households”.

References

Abid, A., & Shafiai, M. H. M. (2018). Determinants of household financial vulnerability in Malaysia and its effect on low-income groups. Journal of Emerging Economies and Islamic Research, 6(1), 32-43.

Achar, S. (2021). An Overview of Environmental Scalability and Security in Hybrid Cloud Infrastructure Designs. Asia Pacific Journal of Energy and Environment, 8(2), 39-46.

Alwi, S., Alpandi, R. M., Salleh, M. N. M., Basir, I. N & Md. Ariff, F. (2019). An empirical study on the customer satisfaction on Fintech mobile payment services in Malaysia. International Journal of Advanced Science and Technology, 28(16), 390-400.

Anthony, M., Sabri, M. F., Wijekoon, R., Abdul, H., Rahim, H. A., Othman, M. A., & Yusoff, I. S. M. (2021). The influence of financial socialization, financial behavior, locus of control and financial stress on young adults' financial vulnerability. Social Sciences, 11(19), 289-309.

Arifin, A. Z., & Anastasia, I. (2017). The affect of financial atittude, locus of control and income on financial behavior. In International conference on economic, business, and accounting (Vol. 1, No. 1, pp. 92-92).

Ary, D., Jacobs, L. C., & Sorensen, C. (2010). Introduction to research in education (8th ed.). California: Thomson Wadsworth.

Bagwell, S., Hestbaek, C., Harries, E., & Kail, A. (2014). Financial capability outcome frameworks. http://www. thinknpc. org/publications/financial-capabilityoutcome-frameworks.

Baptista, S. M. J., & Dewi, A. S. (2021). The influence of financial attitude, financial literacy, and locus of control on financial management behavior. International Journal of Social Science and Business, 5(1), 93-98.

Bartholomae, S., & Fox, J. J. (2021). Overview of financial education. In The Routledge Handbook of Financial Literacy (pp. 173-186). Routledge.

Brown, S., & Taylor, K. (2014). Household finances and the 'Big Five'personality traits. Journal of Economic Psychology, 45, 197-212.

Busines Insider (2020, January). Generation Z News, Latest characteristics, research, and facts. https://www.businessinsider.com/generation-z

Capgemini (2019, September). WORLD PAYMENTS REPORT 2019. https://www.capgemini.com/news/press-releases/world-payments-report-2019/

Chatterjee, S., Fan, L., Jacobs, B., & Haas, R. (2017). Risk tolerance and goals-based savings behavior of households: The role of financial literacy. Journal of Personal Finance, Forthcoming.

Chew, J. (2019, March). Which E-wallet App Do Malaysians Use Frequently? https://iprice.my/trends/insights/best-ewallet-malaysia

Chopdar, P. K., Paul, J., Korfiatis, N., & Lytras, M. D. (2022). Examining the role of consumer impulsiveness in multiple app usage behavior among mobile shoppers. Journal of Business Research, 140, 657-669.

Churchill, S. A., & Smyth, R. (2021). Locus of control and energy poverty. Energy economics, 104, 105648.

Cumming, D. J., Johan, S., & Reardon, R. (2023). Global Fintech Trends and their Impact on International Business: A Review. Multinational Business Review.

Dapp, T., Slomka, L., AG, D. B., & Hoffmann, R. (2014). Fintech–The digital (r) evolution in the financial sector. Deutsche Bank Research, 11, 1-39.

Dari, K., Hossain, M., & Raman, M. (2021). Financial behavior, socialization and vulnerability among young adults: A mediation model. International Journal of Adolescence and Youth, 26(1), 280-291. https://doi.org/10.1080/02673843.2020.1861021

Daud, S. N. M., Marzuki, A., Ahmad, N., & Kefeli, Z. (2019). Financial vulnerability and its determinants: Survey evidence from Malaysian households. Emerging Markets Finance and Trade, 55(9), 1991-2003.

Deacon, R, E., & Firebaugh, F, M, (1998). Family Resource Management, Principles and Applications. Boston, MA: Allyn & Bacon, Inc

Department of Insolvency (2023). Bankruptcy Statistic 2023. Department of Insolvency Malaysia, Putrajaya.

Do, H. N., Shih, W., & Ha, Q. A. (2020). Effects of mobile augmented reality apps on impulse buying behavior: An investigation in the tourism field. Heliyon, 6(8), e04667.

ElHaffar, G., Durif, F., & Dubé, L. (2020). Towards closing the attitude-intention-behavior gap in green consumption: A narrative review of the literature and an overview of future research directions. Journal of Cleaner Production, 275, 122556.

Engels, C., Kumar, K., & Philip, D. (2020). Financial literacy and fraud detection. The European Journal of Finance, 26(4-5), 420-442.

Ernst & Young. (2019). Global FinTech Adoption Index 2019.

Fei, C. K., Sabri, M. F., Mohamed, N. A., Wijekoon, R., & Majid, A. Z. A. (2020). Determinants of financial vulnerability among young employees in Malaysia. Journal of Critical Reviews, 7(15), 3097-3107.

Feige, S., & Yen, J. (2021). The making of financial subjects: A phenomenological study of student debt. Theory & Psychology, 31(4), 611-631.

Fernandes, D., Lynch Jr, J. G., & Netemeyer, R. G. (2014). Financial literacy, financial education, and downstream financial behaviors. Management Science, 60(8), 1861-1883.

Furnham, A., & Cheng, H. (2017). Socio-demographic indicators, intelligence, and locus of control as predictors of adult financial well-being. Journal of Intelligence, 5(2), 11.

Galvin, B. M., Randel, A. E., Collins, B. J., & Johnson, R. E. (2018). Changing the focus of locus (of control): A targeted review of the locus of control literature and agenda for future research. Journal of Organizational Behavior, 39(7), 820-833.

GDS Modellica (2022, Februaury). https://www.gdslink.com/en/7-benefits-of-fintech-for-consumers/

Goyal, K., & Kumar, S. (2021). Financial literacy: A systematic review and bibliometric analysis. International Journal of Consumer Studies, 45(1), 80-105.

Grable, J. E., Archuleta, K. L., Ford, M. R., Kruger, M., Gale, J., & Goetz, J. (2020). The moderating effect of generalized anxiety and financial knowledge on financial management behavior. Contemporary Family Therapy, 42, 15-24.

Hair, J. F., & Ringle, C. M. (2011). The use of partial least squares (PLS) to address marketing management topics. Journal of Marketing Theory and Practice, 19(2), 135-138.

Hair, J. F., Ringle, C. M., & Sarstedt, M. (2013). Partial least squares structural equation modeling: Rigorous applications, better results and higher acceptance. Long range planning, 46(1-2), 1-12.

Hampson, D. P., Gong, S., & Xie, Y. (2021). How consumer confidence affects price conscious behavior: The roles of financial vulnerability and locus of control. Journal of Business Research, 132, 693-704.

Henseler, J., Hubona, G., & Ray, P. A. (2016). Using PLS path modeling in new technology research: updated guidelines. Industrial Management & Data Systems, 116 (1), 2-20.

Henseler, J., Ringle, C.M. and Sinkovics, R.R. (2009), "The use of partial least squares path modeling in international marketing", Sinkovics, R.R. and Ghauri, P.N. (Ed.) New Challenges to International Marketing (Advances in International Marketing, Vol. 20), Emerald Group Publishing Limited, Bingley, pp. 277-319.

Hira, T. K. (2012). Promoting sustainable financial behaviour: Implications for education and research. International Journal of Consumer Studies, 36(5), 502-507.

Huston, S. J. (2010). Measuring financial literacy. Journal of Consumer Affairs, 44(2), 296-316. International Monetary Fund (2020, February). Malaysia: Selected Issues. https://www.imf.org/en/Publications/CR/Issues/2020/02/27/Malaysia-Selected-Issues-49106

Jump$tart Coalition. (2007). National Standards in K-12 Personal Finance Education. http://www.jumpstart.org/guide.html

Kapoor, Jack R.; Dlabay, Les R.; Hughes, Robert J. 2001. Personal finance. Singapore, McGraw-Hill Higher Education.

Khazanah Research Institute (2016). Lower-income households in Malaysia left with $25 every month after expenses: Survey | Asiaone Online. https://www.krinstitute.org/Read-@-Lower-income_households_in_Malaysia_left_with_$25_every_month_after_expenses-;_Survey_%7C__Asiaone_Online.aspx

Khoirunnisaa, J., & Johan, I. R. (2020). The effects of financial literacy and self-control towards financial behavior among high school students in Bogor. Journal of Consumer Sciences, 5(2), 73-86.

Klapper, L., Lusardi, A., & van Oudheusden, P. (2015). Financial Literacy around the World: Insights from the Standard & Poor's Ratings Services Global Financial Literacy Survey.

Koskelainen, T., Kalmi, P., Scornavacca, E., & Vartiainen, T. (2023). Financial literacy in the digital age—A research agenda. Journal of Consumer Affairs, 57(1), 507-528.

Kresnayana, I. G. A. B., Putra, I. G. C., & Sunarwijaya, I. K. (2020). Sistem Pengendalian Intern, Locus Of Control, Partisipasi Anggaran, Dan Kinerja Lembaga Perkreditan Desa. Kumpulan Hasil Riset Mahasiswa Akuntansi (KHARISMA), 2(2).

Kumar, S., Rao, S., Goyal, K., & Goyal, N. (2022). Journal of Behavioral and Experimental Finance: A bibliometric overview. Journal of Behavioral and Experimental Finance, 100652.

Lai, P. C., & Scheela, W. (2018). Convergence of technology in the E-commerce world and venture capital landscape in South East Asia. In Global Entrepreneurship and New Venture Creation in the Sharing Economy (pp. 149-168). IGI Global.

Lea, S. E., Webley, P., & Walker, C. M. (1995). Psychological factors in consumer debt: Money management, economic socialization, and credit use. Journal of economic psychology, 16(4), 681-701.

LeBaron, A. B., & Kelley, H. H. (2021). Financial socialization: A decade in review. Journal of family and economic issues, 42(Suppl 1), 195-206.

Letkiewicz, J., Robinson, C., & Domian, D. (2016). Behavioral and wealth considerations for seeking professional financial planning help. Financial Services Review, 25(2), 105–126

Luhmann, M., Hofmann, W., Eid, M., & Lucas, R. E. (2012). Subjective well-being and adaptation to life events: a meta-analysis. Journal of Personality And Social Psychology, 102(3), 592.

Magli, A. S., Sabri, M. F., Rahim, H. A., Othman, M., Mahzan, N. S. A., Satar, N. M., & Janor, H. (2021). Mediation effect of financial behaviour on financial vulnerability among B40 households. Malaysian Journal Consumer Family Economics, 21, 191-217.

Mansor, M., Sabri, M. F., Mansur, M., Ithnin, M., Magli, A. S., Husniyah, A. R., ... & Janor, H. (2022). Analysing the Predictors of Financial Stress and Financial Well-Being among the Bottom 40 Percent (B40) Households in Malaysia. International Journal of Environmental Research and Public Health, 19(19), 12490.

Metilda, M., & Shamini, S. D. (2022). The Impact of Fintech on Customer Satisfaction and Its Intention to Use: an Empirical Study. Journal of Production, Operations Management and Economics (JPOME) ISSN 2799-1008, 2(06), 46-59.

Mien, N. T. N., & Thao, T. P. (2015, July). Factors affecting personal financial management behaviors: Evidence from Vietnam. In Proceedings of the Second Asia-Pacific Conference on Global Business, Economics, Finance and Social Sciences (AP15Vietnam Conference) (Vol. 10, No. 5, pp. 1-16).

Mimura, Y. (2014). The relationship between life satisfaction among wives and financial preparedness of households in Japan. Journal of Family and Economic Issues, 35, 532-541.

Mokhtar, N., & Husniyah, A. R. (2017). Determinants of financial well-being among public employees in Putrajaya, Malaysia. Pertanika Journal of Social Sciences and Humanities, 25(3), 1241-1260.

Munisamy, A., Sahid, S., & Hussin, M. (2022). A Financial Literacy Model of Malaysian B40 Households: The Case of Financial Well-Being, Education Level and Socioeconomic Status. In Proceedings (Vol. 82, No. 1, p. 64). MDPI.

Mutlu, Ü., & Özer, G. (2021). The moderator effect of financial literacy on the relationship between locus of control and financial behavior. Kybernetes, 51(3), 1114-1126.

Najib (1999). Penyelidikan pendidikan Skudai. Universiti Teknologi Malaysia

O'Connor, G. E., & Kabadayi, S. (2020). Examining antecedents of health insurance literacy: The role of locus of control, cognitive style, and financial knowledge. Journal of Consumer Affairs, 54(1), 227-260.

OECD (2016). "OECD/INFE International Survey of Adult Financial Literacy Competencies." OECD, Paris. www.oecd.org/finance/OECD-INFE-International-Survey-of-Adult-Financial-Literacy-Competen cies.pdf

OECD. (2017). PISA 2015 Results (Volume IV): Students' Financial Literacy. Paris: OECD Publishing.

Organization for Economic Cooperation and Development (OECD) (2013), PISA 2012 Assessment and Analytical Framework: Mathematics, Reading, Science, Problem Solving and Financial Literacy, OECD Publishing, Paris.

Ozili, P. K. (2020). Contesting digital finance for the poor. Digital Policy, Regulation and Governance, 22(2), 135-151.

Philippon, T. (2016). The fintech opportunity (No. w22476). National Bureau of Economic Research.

Prawitz, A. D., & Cohart, J. (2016). Financial management competency, financial resources, locus of control, and financial wellness. Journal of Financial Counseling and Planning, 27(2), 142-157.

Robb, C. A., & Woodyard, A. (2011). Financial knowledge and best practice behavior. Journal of Financial Counselling and Planning, 22(1).

Sabri, M. F., Hayhoe, C. R., & Ai, G. (2006). Attitudes, values and belief towards money: Gender and working sector comparison. Pertanika Journal of Social Sciences & Humanities, 14(2), 121-130.

Sabri, M., Wijekoon, R., & Rahim, H. (2020). The influence of money attitude, financial practices, self-efficacy and emotion coping on employees' financial well-being. Management Science Letters, 10(4), 889-900.

Salmony, M. (2014). Access to accounts: why banks should embrace an open future. Journal of Payments Strategy & Systems, 8(2), 169–170.

Sam Daley (2022, September). What Is Fintech? A Quick Definition. https://builtin.com/fintech

Sehrawat, K., Vij, M., & Talan, G. (2021). Understanding the path toward financial well-being: Evidence from India. Frontiers in Psychology, 12, 638408.

Serido, J., Shim, S., Xiao, J.J., Tang, C., & Card, N.A. (2014). Financial Adaptation Among College Students: Helping Students Cope with Financial Strain. Journal of College Student Development 55(3), 310-316. https://doi.org/10.1353/csd.2014.0032.

Setiawan, B., Nugraha, D. P., Irawan, A., Nathan, R. J., & Zoltan, Z. (2021). User innovativeness and fintech adoption in Indonesia. Journal of Open Innovation: Technology, Market, and Complexity, 7(3), 188.

She, L., Rasiah, R., Turner, J. J., Guptan, V., & Nia, H. S. (2021). Psychological beliefs and financial well-being among working adults: the mediating role of financial behaviour. International Journal of Social Economics, 49(2), 190-209.

Shim, S., Xiao, J. J., Barber, B. L., & Lyons, A. C. (2009). Pathways to life success: A conceptual model of financial well-being for young adults. Journal of applied developmental psychology, 30(6), 708-723.

Siddik, A. B., Rahman, M. N., & Yong, L. (2023). Do fintech adoption and financial literacy improve corporate sustainability performance? The mediating role of access to finance. Journal of Cleaner Production, 137658.

Statista (2023). Number of fintech startups worldwide 2018-2023, by region. Statista Research Department. https://www.statista.com/statistics/893954/number-fintech-startups-by-region/

Sujaini (2023, June). Financial Literacy. https://cleartax.in/g/terms/financial-literacy

Sumarwan, U., & Hira, T. K. (1993). The effects of perceived locus of control and perceived income adequacy on satisfaction with financial status of rural households. Journal of Family and Economic Issues, 14, 343-364.

Suryavanshi, A., Apoorva, G., TN, M. B., Rishika, M., & Haq, A. (2023). The integration of Blockchain and AI for Web 3.0: A security Perspective. In 2023 4th International Conference on Innovative Trends in Information Technology (ICITIIT) (pp. 1-8). IEEE.

Techinasia, (2022, March). TikTok, Binance, Shopee among the most popular apps in SEA: report. https://www.techinasia.com/popular-finance-apps-sea

Tenorio (2021, June). Advantages and disadvantages of Fintech companies https://www.bbva.ch/en/news/advantages-and-disadvantages-of-fintech-companies/

Testa, F., Iovino, R., & Iraldo, F. (2020). The circular economy and consumer behaviour: The mediating role of information seeking in buying circular packaging. Business Strategy and the Environment, 29(8), 3435-3448.

Tyler, N., Heffernan, R., & Fortune, C. A. (2020). Reorienting locus of control in individuals who have offended through strengths-based interventions: Personal agency and the good lives model. Frontiers in Psychology, 11, 553240.

Van Campenhout, G. (2015). Revaluing the role of parents as financial socialization agents in youth financial literacy programs. Journal of Consumer Affairs, 49(1), 186-222.

Ullah, S., & Yusheng, K. (2020). Financial socialization, childhood experiences and financial well-being: The mediating role of locus of control. Frontiers in Psychology, 11, 2162.

Warmath, D., & Zimmerman, D. (2019). Financial literacy as more than knowledge: The development of a formative scale through the lens of Bloom's domains of knowledge. Journal of Consumer Affairs, 53(4), 1602-1629.

World Economic Forum (2017). We'll Live to 100 – How Can We Afford It? https://www3.weforum.org/docs/WEF_White_Paper_We_Will_Live_to_100.pdf

Zaimah, R. (2019). The probability factor influences the level of financial well-being of workers in Malaysia. Geografia, 15(3), 122-135.

Received/ 2023. 08. 08
Revised/ 2023. 11. 10
Accepted/ 2023. 12. 04