

Navigating the Digital Financial Landscape: The Role of Financial Literacy and Digital Payment Behavior in Shaping Financial Management Among Generation Z Student

Irene Sukma Lestari Barus, Tetty Lasniroha, Bunga Indah Bayunitri

Widyatama University, Faculty of Economics and Business, Lecturer at Accounting Department, Bandung, Indonesia.

irene.sukma@widyatama.ac.id, tetty.lasniroha@widyatama.ac.id, bunga.indah@widyatama.ac.id

Abstract. This study investigates the mediating role of digital payment behavior in the relationship between financial literacy and financial management among Generation Z students in Indonesia. Using a purposive sampling technique, a sample of 409 actively enrolled university students was selected. Structural equation modeling (SEM) was employed to analyze the data and test the hypothesized relationships. The findings reveal that financial literacy positively influences digital payment behavior and financial management, while digital payment behavior also positively affects financial management. Moreover, digital payment behavior partially mediates the relationship between financial literacy and financial management. The study highlights the importance of integrating financial literacy and digital payment behavior to enhance students' financial management skills in the context of the Industrial Revolution 4.0. Practical implications for financial education and policy initiatives targeting Generation Z students are discussed. However, the study's limitations, such as the reliance on a single country sample and the cross-sectional design, should be considered when interpreting the results. Future research should explore the generalizability of the findings and investigate the long-term effects of financial literacy and digital payment behavior on financial well-being.

Keywords: Financial Literacy, Financial Management, Fintech Payment Behavior.

1. Introduction

Financial literacy is an individual's ability to understand and effectively use various products and services, which includes knowledge relating to the management of money, credit, investments, and risks. In this context, digital payment behavior is the act of using modern payment technologies, such as mobile apps, digital wallets, and electronic transfers, to carry out transactions. Meanwhile, financial management is the process of planning and controlling the activities of an individual or institution, including budgeting, investing, tax planning, and saving, to achieve stability and long-term economic objectives Morgan et al., (2019).

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The adoption of digital payments by Generation Z students faces various challenges, such as limited knowledge, concerns about security and data privacy, as well as limited access to digital payment tools. However, the opportunities are significant, including easy access to services, the ability to conduct transactions, and the potential to enhance financial literacy through the practical use of the tools. Integrating financial education into the curriculum can address these challenges and capitalize on the available opportunities (Firmansyah & Susetyo, 2022).

The adoption of digital payments by Generation Z students faces various challenges such as limited knowledge, concerns about security and data privacy, as well as limited access to digital payment tools. However, significant opportunities also emerge, including easy access to services, the ability to conduct transactions, and the potential to enhance financial literacy through the practical use of these tools. Integrating financial education into the curriculum can address these challenges and capitalize on the available opportunities. The digital technology development exponentially in the era of the industrial revolution 4.0, illustrates how this condition triggers and indirectly influences consumption behavior patterns, especially among students who are adaptive to technology.

In the industrial revolution 4.0, digital technology has developed exponentially and the concept is followed by ease in ordering goods and services, and causes cheaper prices (efficiency) through online transactions using smartphones or computer devices. This condition triggers and influences consumption behavior patterns indirectly, specifically students who are adaptive to technology. Currently, electronic money users are dominated by the middle to upper class and the millennial generation who are up-to-date with technology (Gusni et al., 2020). In the field of economics, the concept of limited resources arises from the nature of human needs contrasted with the limited availability of financial assets. Even though human economic needs show boundless scope, the resources are inherently finite. Therefore, financial literacy and fiscal management become apparent to navigate the complexities of contemporary paradigms. This necessitates individuals capable of making rational, well-calculated decisions, mindful of the resultant benefits, and cognizant of the external ramifications of choices (Firmansyah & Susetyo, 2022).

Table 1. Comparison of Financial Literacy and Inclusion Index in 2019 and 2022

INDEX	2019	2022
LITERACY	38.03%	49.68%
INCLUSION	76.19%	85.10%
GAP	38.16%	35.42%

Source : (Ojk.go.id, 2022)

The 2022 SNLIK carried out by OJK reported that the financial literacy index has increased from 38.03% to 49.68% compared to 2019. Meanwhile, Indonesia's financial inclusion index in 2022 increased rapidly from 76.19% to 85.10%. This condition shows the difference between the level of literacy and inclusion where financial inclusion is 2 times higher than financial literacy. The results show that the level of literacy has a different value from inclusion, which is higher than financial literacy level. The parameters of financial literacy used are belief, knowledge, skills, as well as attitudes and behaviors, while the parameter of financial inclusion used is index. Table 1 reports the comparison of the Financial Literacy and Inclusion Index in 2019 and 2022, as follows.

From these data, Indonesian society has a literacy level of 75.69% below *Sufficient literacy* for 2019 and 2022 at 38.03% and 49.68%, respectively. OJK Regulation No. 76/POJK.07/ 2016 of 2016 (KEUANGAN, n.d.) defines financial inclusion as the availability of access to various formal institutions, products, and services in line with the community's needs and capabilities to improve public welfare. This phenomenon is evident in the increasing prevalence of bank accounts and the utilization of financial service products. A higher level of financial inclusion signifies broader accessibility to services for a greater number of individuals, thereby showing expanded reach and enhanced accessibility.

According to Table 1, the number of account owners has increased from 2019 to 2022 but did not happen with financial literacy. Despite the improvements in financial literacy, effective management practices play an important role in empowering individuals to handle finances. This includes prudent management of funds, astute risk assessment in investments, diligent preparation of pension funds to cater to the exigencies of old age, and recognizing the significance of insurance as a method of mitigating risk. Therefore, the attainment of elevated levels of financial inclusion index and literacy among individuals should be promoted. In this context, the development of the technology industry holds promise in promoting financial literacy and inclusion within communities. Fintech facilitates accessibility to financial services for individuals residing in remote areas, thereby bridging geographical barriers and broadening financial inclusion. Financial literacy can be interpreted as the ability to understand a variety of economic concepts to assess conditions and make appropriate judgments on resources (Budiwati et al., 2020).

Increasing financial and economic literacy needs to be applied in various countries to stabilize personal finances, as a balance between spending and saving to increase national economic growth (Shvandar, 2020). Conversely, limited financial literacy diminishes individuals' capacity to effectively manage affairs, thereby engendering long-term ramifications (Stolper & Walter, 2017).

Digital technology holds significant promise and plays a crucial role in advancing financial education and enhancing literacy (Davis & Hasler, 2021; Gomber et al., 2017, 2018). This is achieved through digital financial services (DFS) within contemporary society, including digital currencies and

online financial services, the potential for digital technology to contribute positively is substantial. Therefore, there is urgent importance for the implementation of effective financial education initiatives, strong consumer protection measures, and adaptable inclusion policies to address the evolving landscape (Davis & Hasler, 2021; OECD, 2017).

The UTAUT model shows the individual acceptance and utilization of information technology. This is an amalgamation of eight prior theories, including the Theory of Reasoned Action (TRA), Technology Acceptance Model (TAM), Motivational Model (MM), Theory of Planned Behavior (TPB), a fusion of TAM and TPB (C-TAM-TPB), Model of Personal Computer Utilization (MPCU), Innovation Diffusion Theory (IDT), and Social Cognitive Theory (SCT). Empirical testing has shown the superior efficacy of UTAUT compared to other models in understanding and predicting behavior related to information system usage (Venkatesh et al., 2003).

This model has four constructs as determining factors in technology acceptance and user behavior, namely Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions that influence behavioral intentions (Venkatesh et al., 2003). Performance expectancy is the extent an individual believes that using a system can achieve advantages in a particular job or activity. This variable is defined as the level of benefit or advantage obtained in using technology to carry out daily activities and can be divided into 3 sub-variables. The first aspect pertains to usefulness derived from integrating technology into daily routines, while the second aspect relates to quickness, measuring how effectively technology expedites tasks. Lastly, productivity refers to the enhancement in work output achieved by users through the adoption of technology. Effort expectancy is the level of ease associated with using a system or technology by users. Venkatesh et al. (2003) defined effort expectancy as an estimate of the perceived ease users experience when using technology. This concept includes two dimensions, namely complexity, indicating the intricacy and difficulty of learning technology, and ease of use, denoting the comfort felt during the application. Social influence is the degree an individual perceives that external parties endorse the use of a particular system or technology. According to the UTAUT model, social influence manifests as external pressure exerted on an individual by significant others (Venkatesh et al., 2003) and the variable includes subjective norms. Social Influence pertains to the extent of impact exerted by individuals close to the user regarding technology. Meanwhile, subjective norms refer to the impact of significant individuals in the user's life on technology usage.

Facilitating Conditions pertain to an individual's perception regarding the accessibility of technical and organizational support for users of a system or technology. This concept includes three fundamental dimensions, namely resources, knowledge, and compatibility (Chang, 2012; Venkatesh et al., 2012). Resources are external influences impacting technology use, while knowledge includes the availability of external knowledge sources, and compatibility relates to the level of convenience. Digital payment behavior is influenced by four primary factors, namely Performance Expectancy, Effort Expectancy, Facilitating Conditions, and Social Influence.

This research examines Performance Expectancy in the context of productivity, and this variable is defined as an enhancement in the user's work output when using technology. Furthermore, it is assessed through financial management in controlling the complexity of technology and the learning curve. Facilitating Conditions include resources and knowledge, which pertain to external factors and sources of information for technology use. Compatibility assesses the degree of balance between the system and contemporary technology, measured through financial literacy. In this research, social influence includes social factors and subjective norms. Social factors control the influence of individuals close to the user on technology use. Subjective norms assess the impact of significant individuals on the user's technology use, measured through Digital Payment behavior.

Some empirical evidence is depicted in case studies in India, Jordan, and China belonging to Gupta & Arora (2020), Jaradat & Al Rababaa (2013), and An et al. (2016) entitled "Investigating consumers to accept mobile payments through a unified theory of acceptance model", "Assessing Key Factor that Influences on the Acceptance of Mobile Commerce Based on Modified UTAUT", and "Study on the

Factors of Online Shopping Intention for Fresh Agricultural Products Based on UTAUT2". This research diverges slightly from earlier research and focuses on behavioral intention at the system level to sustain digital payment through behavioral planning. The research consists of Generation Z respondents, who are full-time students across various universities and actively using Financial Technology applications.

Research addressing financial literacy and management have significantly evolved but are considered inadequate for navigating the new and intricate financial landscape shaped by the widespread adoption of digital technologies. Therefore, individuals must possess digital financial literacy to effectively use digital services and discern potential risks in innovations. Despite the ongoing transformation of daily life, there remains a lack of awareness regarding the impact of digitalization on financial literacy and behavior. This research aims to explore the extent to which digitalization influences individuals' lives, particularly in terms of financial literacy and capability through the application of an integrative review approach (Torraco, 2005). Besides knowledge and understanding, strong financial beliefs are also required, including attitudes, perceived behavioral control, and self-efficacy (Serido et al., 2013).

According to Hilgert et al., (2003), individuals with low literacy were not always included in various recommended financial practices. Meanwhile, (Mathews, 1999; Van der Merwe, 2012) described financial literacy as the competence to recognize and use financial concepts through individual thinking to improve welfare through decisions taken rationally. Ahn & Nam (2022) showed that mobile payment users spent more money than non-users. In examining the role of financial knowledge, Ahn & Nam (2022) reported that individuals who gained more financial knowledge could anticipate adverse conditions such as overconsumption and difficulties in money management due to mobile payments facility.

This research with five recent analyses in the US (de Bassa Scheresberg et al., 2020; Liao & Chen, 2020, 2021; Lusardi et al., 2018; Yakoboski et al., 2018) attempted to investigate the impacts of increasing digital financial transaction services used by consumers. In recent years, consumers were pampered with several easy methods, such as payment systems for online transactions, including PayPal, Klarna, and Amazon Pay, or mobile payment systems using Payr, WeChat, Alipay, Venmo, and Vipps applications, as well as contactless payment systems, requiring consumers to hold a card or smartphone through a terminal, such as Apple Pay, G Pay, and Samsung Pay.

The phenomenon explains that financial literacy level influences behavior in relation to technology as evidenced by the high amount of internet use. Therefore, this research tests the ability of active students studying full-time at multiple universities while working in terms of financial literacy driven by the intervention of technology. According to the literature review, Financial Literacy and Management as well as the Role of Digital Payment Behavior Intervention are discussed due to changes in environmental conditions.

The research question answered is "How does financial literacy affect digital payment behavior and financial management among Generation Z active students?" Based on the existing literature and empirical data, the hypotheses proposed are H1 - Financial literacy has a positive influence on digital payment behavior, H2 - Financial literacy positively affects effective financial management, and H3 - Digital payment behavior positively mediates between financial literacy and management. These hypotheses show the importance of financial literacy in enhancing digital payment behavior and effective financial management.

Financial literacy and digital payment behavior.

This research shows that consumers spend more money when using less transparent payment methods. Several research have compared the use of credit or debit cards with cash (Feinberg, 1986; Hirschman, 1979; Runnemark et al., 2015), where card users are known to spend more money. To explain credit card premiums, Zellermyer (1996), coined the term "pain of paying", which is the feeling consumers experience when paying. The transparency of a mode of payment is directly related to the

"pain of paying," or the reluctance to pay, with cash and digital payment as the most (Prelec & Loewenstein, 1998; Raghurir & Srivastava, 2008; Soman, 2003) and least transparent methods (Shah et al., 2016).

According to neuroscience, a person's decision to buy an item is related to the ability to pay (Knutson et al., 2007). Knutson et al., (2007) investigated the mechanisms of purchasing decisions using event-related functional Magnetic Resonance Imaging (fMRI). The results reported that individuals tended to spend more money when using a credit card. This confirmed the findings of (Prelec & Simester, 2001) which compared the use of cash and credit cards when the market value was unbalanced. In addition, there was a positive connection between financial vulnerability and literacy (Anderloni et al., 2012; Yusof et al., 2015). According to Heo et al., (2021), financial technology users have experienced greater stress. Since financial literacy has contributed to individual behavior (Lusardi & Mitchell, 2014), the topic related to understanding the concepts should be evaluated (Klapper et al., 2015). This research shows that good financial literacy reduces the negative influence of behavioral preferences in making digital payments, therefore the hypothesis for this statement is stated as follows:

H1: Financial literacy negative influence on digital payment behavior.

Financial Literacy and Financial Management.

Garman & Forgue (2010) explained that financial literacy is the understanding of facts, concepts, principles, and technology in managing finances. The skill is needed to overcome problems in life, specifically those related to financial decision-making. Atkinson & Messy (2012) suggested that financial literacy is a collection of awareness, knowledge, behavioral abilities, and habits expected to be present when making financial decisions to achieve satisfactory conditions. Vitt, L. A., Anderson, C. A., Kent, J., & Lyter (2000) mentioned that the variable was related to a person's ability to comprehend how to manage money and discuss personal financial conditions, as well as provide some perceptions relating to the financial world. A positive correlation was also found between financial knowledge and practice (Hilgert et al., 2003). The measurement of financial literacy refers to the parameters made by (Volpe et al., 1996) using four indicators, namely Basic financial knowledge, Savings and loans, Investment, and Insurance.

Hilgert et al., (2003), Ida & Dwinta (2010), Robb & Woodyard (2011), Tang & Baker (2016), Amanah et al., (2016), and Dwiastanti (2017) stated that financial knowledge affected management behavior. Perry & Morris (2005), Grable et al., (2009), Mien & Thao (2015), Arifin (2017), Arifin et al., (2017), Humaira & Sagoro (2018), and Bapat (2019) reported that the variable exerted a positive influence on financial management behavior, where individuals with a broad understanding are inclined to show better and more rational behavior in managing finances. This research reflected good financial literacy characterized by the ability to manage finances, hence the hypothesis is stated as follows:

H2: Financial Literacy positively influences financial management.

Digital payment behavior and financial managing.

According to (Mm et al., 2009), the way individuals operate and manage finances plays a significant role in attaining welfare. Therefore, there is a fundamental necessity for financial management knowledge among all individuals. Chinen & Endo (2012) stated that individuals who effectively make the best financial decisions easily overcome problems. Dew & Xiao (2011) and Senduk (2005) reported that financial behavior includes three dimensions, namely consumption, Cash-flow management, as well as Risk Management, Financial Storage, and Financial Considerations. Further research should be conducted on consumers' financial knowledge and payment behavior. This is consistent with the results of Esselink & Hernández (2017), Greene et al., (2017) Koulayev et al., (2016), Chen et al., (2017), Kadoya & Khan (2020), Jonker et al., (2017) for Eurozone, US, Canada, Japan, and Netherlands, respectively. However, Henry, C.S.; Huynh, K.P.; Welte (2017) and Fujiki (2020) were categorized as a part of the standard measure of financial literacy. Hamid & Loke (2021) examined the connection between socioeconomic factors, financial literacy, money management skills, budget deficit, and carelessness in using credit card payments in Malaysia. The results showed that socioeconomic factors

including education, income, ethnicity, and marital status influence the use of credit cards in paying process. This supports the argument that financial education and behavioral interventions are essential in forming individual behavior (Robb & Woodyard, 2011; Świecka et al., 2021). The research reflects good financial management promoting digital payment transactions, hence the hypothesis is stated as follows:

H3: Digital payment behavior positively influences financial management.

Financial literacy, financial managing, and digital payment behavior.

Financial technology provides convenience, specifically in terms of digital payments (Arner et al., 2015), and serves as a financial service provider in modern devices (Weekly, 2017). Previous research has adopted new digital payment technologies which tend to be used by the younger generation, specifically those who have high competence in the field (Choudrie et al., 2018; Elhajjar & Ouaida, 2020; Meyll & Walter, 2019; de Bassa Scheresberg et al., 2020; Yakoboski et al., 2018). This research uses six factors that influence respondents' intention to use digital payment services, namely culture, perceived security, performance expectations, effort expectations, social influence, and usage intentions (Forbes & Kara, 2010; Junadi^a, 2015). According to Irawan & Matoati (2021), the utilization of fintech payments has been shown to positively impact the level of financial management, showing individuals' ability to manage various types of payment transactions, monitor expenses and income, and facilitate savings. This research shows the important correlation between digital payment behavior, financial literacy, and management, hence the hypothesis is as follows:

H4: Financial literacy positively influences financial management through digital payment behavior.

The complete theoretical model shows the direct influence in H1, H2, and H3 while the indirect influence is in H4. From the literature review and hypothesis development, the paradigm research can be described as follows.

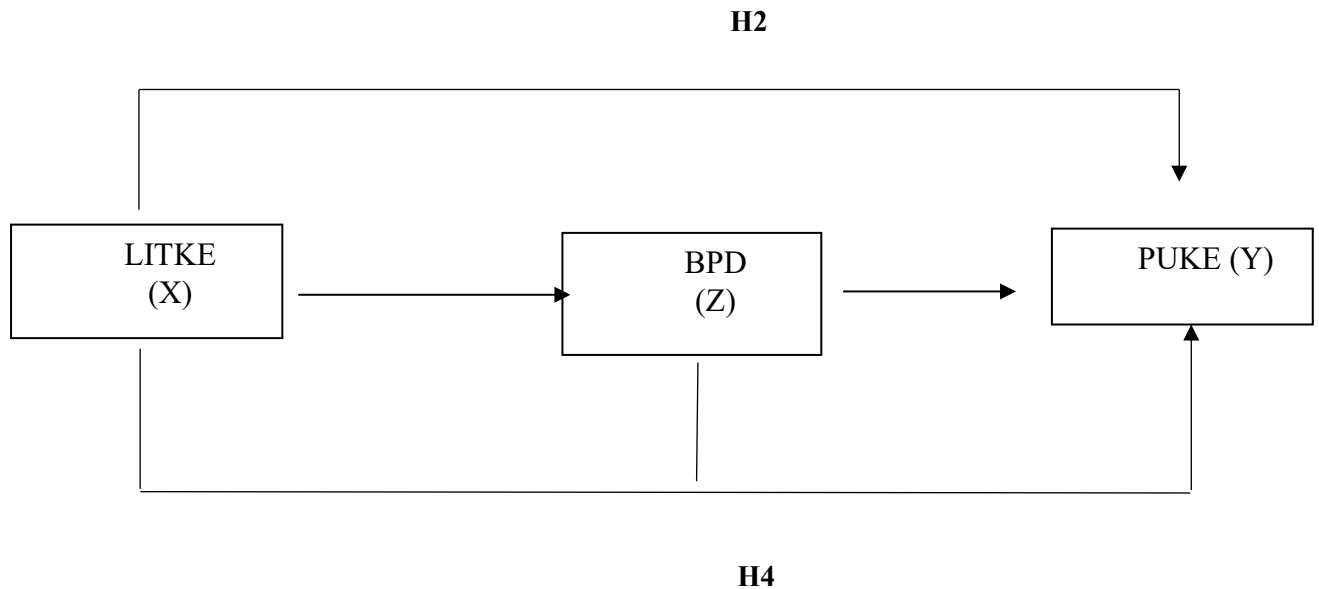


Fig.1: Theoretical Model Direct and Indirect Affect.

Note: LITKE(X) means Financial Literacy, BPD (Z) means *Behavior Payment Digital* and PUKE (Y) means Financial Managing.

This research articulates the gap in literature by exploring how investigating the mediating role of digital payment behavior can provide a better understanding of the relationship between financial literacy and financial management. Through the use of purposive sampling techniques and structural equation modeling (SEM), the study reveals that financial literacy positively impacts digital payment behavior and financial management, while digital payment behavior also positively affects financial management. Digital payment behavior partially mediates the relationship between financial literacy and financial management, highlighting the importance of adopting an integrated approach in financial education to face the challenges of the digital era.

2. Research Methods

The primary data used were questionnaires filled out by respondents online. This questionnaire was adapted from the research of Volpe et al., (1996), Kim et al., (2016); Dew & Xiao (2011) and adjusted to the object of students. The scale used as measurement was the Likert scale of 1 to 5 in SmartPLS software version 3.2.9. Additionally, *purposive sampling* techniques were used in terms of sample selection and the questionnaire adaptation process included several critical steps suitable for the context and population. Purposive sampling was considered the most appropriate method because it allows for the selection of respondents who specifically have experience or knowledge related to financial literacy and the use of digital payments, which is vital to achieving the research objectives. This method facilitates in-depth investigation of the phenomena under study in the specific context of Generation Z students in Indonesia. However, we recognize that this approach has limitations, particularly the risk of selection bias that could affect the generalizability of the findings. Therefore, this research should be viewed as a starting point for broader understanding, and its results should be interpreted with these limitations in mind, while recommending the use of more inclusive sampling methods in the future to strengthen the generalizability of findings.

A literature review was conducted to identify existing instruments relevant to the research objectives. Subsequently, the questionnaire was adapted to ensure the questions were relevant to the cultural and socioeconomic context of the respondents. This included the modification of language, scale, or examples to enhance understanding. To ensure validity, content validity could be used by soliciting feedback from experts in the relevant field. Meanwhile, construct validity was examined through factor analysis to assess the reflection of items in the questionnaire. Reliability, or the consistency of the instrument's measurements, was checked using Cronbach's alpha coefficient to evaluate the internal consistency of items. Therefore, the instrument could be used to produce consistent results across different contexts.

The adaptation of questionnaire items from previous studies involved a selective and critical process to ensure relevance and contextual validity in measuring financial literacy and digital payment behavior among Generation Z students in Indonesia. This process included language and context adjustments, as well as validation through pilot testing to gather feedback on the clarity and understanding of items. The validity and reliability of the adapted instruments were then verified through statistical analysis, including Cronbach's alpha reliability testing. These efforts ensure that the measurements used accurately reflect the theoretical constructs being studied, considering the specific cultural and social nuances of Indonesian stu

The criteria for respondents included individuals belonging to Generation Z, who held the status of active full-time students enrolled in various universities, as well as those engaged in part-time work while using Financial Technology applications. There was no exact population size since the number of samples using the Lemeshow formula (1997) at the level of significance $\alpha = 5\%$ was at least 384 respondents (Lemeshow et al., 1997). The number of respondents obtained through Path analysis and Structural Equation Model (SEM) was 409 students. Furthermore, data processing was carried out using Partial Least Square (PLS) software Version 3.2.9 which allowed proper solving of problems. This

sample size was selected to ensure statistical power and model validity. As a complex statistical technique, SEM examined the relationships between variables through measurement and structural models. A large sample size was crucial for accurate parameter estimation and the validity of research conclusions. The determination of this sample size also considered the criteria of effect size, confidence level, and desired statistical power.

An indicator could be classified as valid when the Average Variance Extracted (AVE) value was greater than 0.5 or the outer loading variable dimensions had a value > 0.5 (Chin, 1998). The discriminant validity test could be conducted by comparing the square root of AVE for each construct with the correlations between constructs (Ghozali, 2008). The discriminant validity test could be determined through the cross-loading value for each instrument, which must be more than 0.5 (Fornell & Larcker, 1981). The reliability of a variable construct could be determined through the value of composite reliability. A construct was declared reliable with a composite reliability greater than 0.7 (Chin, 1998). These variables have a composite reliability value greater than 0.7, hence the data could be interpreted as reliable.

This research applied the R Square test to measure the degree of variation between independent and dependent variables (Abdillah & Hartono, 2015). The Significance Test included the analysis of the P-value, which was set at < 0.05 to assess the exogenous and endogenous variables. Additionally, the Effect Size Test was used to interpret the strength of the predictor variable's influence at the structural level. This variable was unaffected by sample size and could be used to control the magnitude of variables, as well as the differences and relationships within the model (Olejnik & Algina, 2003).

The structural equations obtained in this research include:

$$\text{Model 1: } Z = P1X \zeta.$$

$$\text{Model 2: } Y = P1X \zeta$$

$$\text{Model 3: } Y = P2Z \zeta$$

$$\text{Model 4 : } Y = P1X + P2Z + \zeta.$$

Note:

X = LITKE means Financial Literacy

Z = BPD means *Behavior Payment Digital*

Y = PUKE means Financial Managing.

P1, P2 means path coefficient

ζ . = Disturbance term

The path analysis regression model was used to discern the direct, indirect, and total effects of independent variables on the dependent. This research initially had 473 samples by carrying out a data cleaning process for 409 respondents through questionnaires. In the data cleaning process, the initial step was to identify and eliminate duplicate or inconsistent data, followed by a thorough evaluation of each questionnaire item to detect and correct entry errors. Meanwhile, missing or incomplete responses were addressed using various techniques. Data imputation replaced missing values with estimates based on average response, to minimize bias and maintain the sample size. The complete analysis relied only on data to avoid potential distortions from imputation and reduction of samples. More advanced techniques, such as Multiple Imputation or Bayesian Replacement Models, offer solutions to estimate missing values by leveraging patterns in the existing data. This approach ensured analytical integrity by keeping the dataset clean, consistent, and accurate, thereby minimizing the negative impact of missing or incomplete data on the outcomes.

The main findings from the SEM analysis reveal significant and complex relationships between financial literacy, digital payment behavior, and financial management. These relationships indicate that an increase in financial literacy not only directly strengthens effective financial management but also mediates digital payment behavior as an important factor in this process. These findings emphasize the need for holistic financial education for Generation Z students, which not only focuses on traditional financial aspects but also incorporates an understanding of digital payment technologies. This

interpretation provides new insights into how an integrated approach to financial literacy and digital payment technologies can contribute to better financial management, offering guidance for the development of financial education curricula relevant to today's digital era.

3. Result and Discussion

Outer Model Test

An indicator can be classified as valid when the AVE value is greater than 0.5 or outer loading variable dimensions have a loading value of > 0.5 (Chin, 1998). The discriminant validity test is conducted by comparing the square root of AVE with the correlation value between constructs (Ghozali, 2008). An alternative method for assessing discriminant validity includes examining the cross-loading values of each instrument, with a criterion exceeding 0.5 (Fornell & Larcker, 1981). A construct was declared reliable when the variable had a composite reliability greater than 0.7 (Chin, 1998). The variables in Figure 2 had a composite reliability value greater than 0.7, hence the data could be interpreted as reliable.

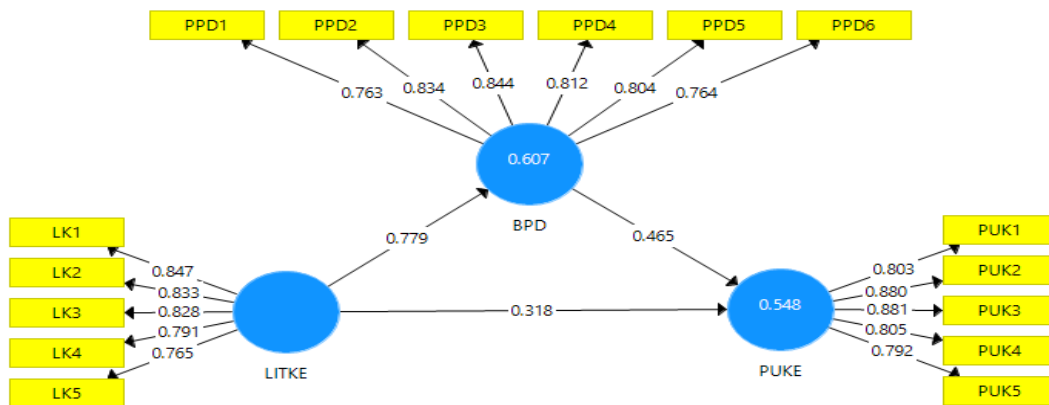


Fig.2: Outer SEM PLS Model

Note: LITKE means Financial Literacy, BPD means *Behavior Payment Digital* and PUKE means Financial Managing.

Research Model Testing

The section on Research Model Testing examined the data presented in Table 2, which offered insights into the Inner Model Test. The R Square test was used to control the extent of variation in dependent variables attributed to changes in independent variables (Abdillah & Hartono, 2015). The Significance Test was also used by looking at the P-value of < 0.05 to test the significance of exogenous variables on endogenous variables using the Effect Size Test (Olejnik & Algina, 2003). The R Square value refers to the R Square Adjusted value where BPD and PUKE are 0.606 and 0.545, respectively (Hair et al., 2011). Table 2 describes the significance test by analyzing the P-value of the Path Coefficient. The effect of BPD and LITKE on PUKE and BPD is strong while LITKE on PUKE influences the intervening category (Hair et al., 2011).

Table 2. Outer Loading Value of Latent Variable Dimension

No.	Latent Variable Indicators	Lowest Value	Top Rated	R Square	R Square Adjusted
1.	LITKE	0,765*	0,847**		
2.	BPD	0,763*	0,844**	0,607***	0,606***
3.	PUKE	0,792*	0,881**	0,548***	0,545***

0,792* 0,881** 0,548*** 0,545***

Sources: Data Processed with Smart PLS V. 3.2.9 (2023)

Note: ** is Valid and *** is moderate, LITKE, BPD, and PUKE means Financial Literacy, Behavior Payment Digital, and Financial management.

The R-square value in SEM analysis represented the proportion of variance in the dependent variable explained by the independent variables in the model. For instance, an R-square value of 0.548 for financial management showed that 54.8% of the variability could be explained by the variables. This value signified the strength of the relationship between variables practically significant because more than half of the variability was understood through the proposed model. In practical terms, this showed the importance of independent variables, such as financial literacy and digital payment behavior, in shaping an individual's management capabilities and providing a strong foundation for interventions.

Hypothesis Testing

In Table 3, the significance test was stated and the P-value of the Path Coefficient discerned the direct and indirect influences. The effect of BPD and LITKE on PUKE and BPD was strong while LITKE on PUKE influenced the intervening category (Hair et al., 2011). The results of the Outer and the Inner Model Test showed that the model was said to be good or acceptable.

Table 3. Effect Size and Path Coefficient

Latent Variable Indicators	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	F Square	T Statistic	P Value
BPD -> PUKE	0,465	0,471	0,057	0,188**	8,220**	0,000**
LITKE -> BPD	0,779	0,781	0,020	1,546	38,347**	0,000**
LITKE -> PUKE	0,318	0,314	0,061	0,088	5,246**	0,000**
LITKE -> BPD	0,363	0,368	0,046	7,770**	7,962**	0,000**

Sources: Data Processed with Smart PLS V. 3.2.9 (2023)

Note: ** significance at 5% and ** moderate F Square at between 15-35%, LITKE means Financial Literacy, BPD means Behavior Payment Digital, PUKE means Financial Managing.

Based on the results of the run data, the structural equation obtained is as follows:

- Model 1 : LITKE = 0,779*BPD + ζ.
- Model 2 : LITKE = 0,318*PUKE + ζ.
- Model 3 : BPD = 0,465*PUKE + ζ.
- Model 4 : PUKE = 0,318 LITKE + 0,465 BPD + ζ.

Note :
 X = LITKE means Financial Literacy
 Y = BPD means Behavior Payment Digital
 Z = PUKE means Financial Managing
 P1, P2 means path coefficient
 ζ. = Disturbance term

The direct influence of X on Z is $(0.318) \times (0.318) = 0.1011$, while the indirect effect through Y is $0.465 \times 0.779 = 0.3622$. The total effect of X on Z is the direct and indirect influences at 0.4633. Hypothesis testing using the SEM-PLS Version 3.2.9 reported the value of each variable in this research.

The R Square value of 0.548 (54.8%) signifies a moderate inclusion of the influence between the independent and intervening variables. Furthermore, the value between the independent and dependent variables is 0.607 (60.7%), reporting a 60.7% contribution within the moderate model. R-square is strong, moderate, or weak when the value is more than 0.67, more than 0.33 lower than 0.67, more than 0.19, and lower than 0.33, respectively (Chin, 1998). For the R Square Adjusted value, BPD and PUKE values were 0.606 and 0.545 (Chin, 1998; Hair et al., 2011).

The suitability of this research model was indicated by the SRMR value being less than 0.10, as observed in Table 4. The F square test, derived from the Effect Size in Table 3 showed that the independent variable significantly influenced the intervening variable with an effect size of 1.564 or 156.4%, surpassing the threshold of 0.35 or 35%. However, the impact of the independent variable on the dependent variable is considered low at 0.088 or 8.8%. The impact of the intervening variable on the dependent variable is moderate at 0.188 or 18.8%.

Table 4. Model Fit

	Saturated Model	Estimated Model
SRMR	0,093*	0,093*
d_ ULS	1,186	1,186
d_ G	0,634	0,634
Chi-Square	1453,473	1453,473
NFI	0,724	0,724

Sources: Data Processed with Smart PLS V. 3.2.9 (2023)

Note : * Fit Model at $<0,10$, LITKE means Financial Literacy, BPD means *Behavior Payment Digital*, PUKE means Financial Managing.

Descriptive statistics

Students who served as respondents used digital payments such as Akulaku, Shopee, and Bank Online. A total of 409 respondents were grouped based on gender, age, faculty, and employment status.

Table 5. Respondent Data

No.	Description	Amount	Percent (%)
1.	Gender		
	a. Man	172	42,05
	b. Woman	237	57,95
2.	Age (Years)		
	a. 20 – 22	93	22,74
	b. 22 – 24	274	66,99
	c. >24	42	10,27
3.	Faculty		
	a. FBM	203	49,63
	b. Law	69	16,87
	c. Sospol	55	13,45
	d. Technique	82	20,05

		Job Status		
4.	a.	Student	282	68,95
	b.	Student	127	31,05
		&Employee		

Survey results on identity respondents show that there are more females with a range of 22 to 24 years old. Respondents were mostly from the Faculty of Business and Management.

Influence of financial literacy on *behavior payment digital*.

The data in model 1 shows that financial literacy has a positive effect on *behavior payment* directly. This can be seen from the T Statistics value greater than or equal to 1.96 and the P Value obtained < 0.05 or below 5%. The research rejects the hypothesis and can be seen from the T Statistics value greater than or equal to 1.96 with a P-value < 0.05 or below 5%. The figure obtained for the T statistic is 38,347 and the P-value is 0.000.

The provision of good financial knowledge improves individual's behavior in managing finances. A more comprehensive understanding of students' financial literacy facilitates the adeptness in using financial transactions through technology. The understanding of financial literacy shows that finances and decisions can be managed. Despite comprehending the risks associated with financial technology transactions, such as data breaches, hacking, or online fraud, students weigh the benefits and risks. However, the convenience of conducting transactions through financial technology serves as a significant motivator for students to persist in using financial technology applications. These results confirm the findings of Henager & Cude (2016) and Herawati (2015) where literacy significantly has effects on financial behavior. Foster et al., (2021) reported that financial literacy has a relationship with the interest of using chip-based electronic money. The correlation between an individual's level of financial literacy and inclination toward using electronic money is evident. Individuals with a profound understanding of financial literacy are more inclined to leverage technology for transactions through chip-based electronic money systems. Financial literacy shows a positive influence on the propensity to use chip-based electronic money. In this context, the deeper one's understanding of financial literacy, the more practicalities of chip-based electronic money can be navigated. Therefore, individuals equipped with a strong financial literacy foundation easily engage with electronic money systems.

According to Rahayu et al., (2022), the Indonesian millennial generation's behavior toward saving activity affects the level of digital financial literacy. Therefore, the higher a person's level of digital financial literacy, the better the influence on saving behavior. This is consistent with research conducted by Setiawan et al., (2022), Morgan et al., (2019), Henager & Cude (2016), Jamal et al., (2015), and Wangmo (2018). Morgan et al., (2019) identified that a person's level of financial literacy affected saving behavior. Edirisinghe, et al. (2017) in Irawan & Matoati (2021) stated that student financial literacy was consistent with financial behaviour. Therefore, the higher the students' knowledge and ability to manage finances, the wiser the decisions to solve problems. Gunawan (2023) suggested that financial literacy and payment technology had a major impact on the students' consumptive behavior in the public sector. Therefore, strengthening public financial education was in line with the era of fintech and broad financial services.

Influence of financial literacy on financial managing.

The data in Model 2 shows that financial literacy has a positive effect on financial management directly. This can be seen from the T Statistics value greater than or equal to 1.96 and the P-value obtained < 0.05 or below 5%. The research rejected the hypothesis since the Statistics value was greater than or equal to 1.96 and the P-value obtained < 0.05 or below 5%. The figure obtained for the T statistic is 5.246 and the p-value is 0.000.

According to Edirisinghe et al., (2017) and Jorgensen (2007), the comprehension of financial literacy is facilitated through various channels, including media platforms on the Internet, educational institutions such as universities, and independent entities, namely consulting firms, governmental agencies, and corporations. These diverse sources equip individuals with the requisite knowledge to engage in targeted financial management practices. The results are in line with Edirisinghe et al., (2017) that students' financial literacy has a direct effect on financial management. Jorgensen (2007) stated that students who acquired knowledge about managing finances from parents have higher financial attitudes.

Adiputra et al., (2021) explained that there is a considerable impact between financial knowledge and financial behavior. Every individual must consider having financial knowledge, specifically concerning the control of finances. Furthermore, (Hilgert et al., 2003; Perry & Morris, 2005; Grable et al., 2009; Ida & Dwinta, 2010; Mien & Thao, 2015; Amanah et al., 2016; Arifin, 2017; Humaira & Sagoro, 2018) stated that financial knowledge influenced individual behavior.

Influence of behavior payment digital on financial managing.

The data in Model 3 shows that *behavior payment* has a positive relationship with financial management. This can be seen from the T Statistics value greater than or equal to 1.96 and the P Value obtained < 0.05 or below 5%. The research rejected the hypothesis since the T Statistics value was greater than or equal to 1.96 and the P-value obtained < 0.05 or below 5%. The figure reported for the T statistic is 8,220 and the p value is 0.000.

The research accepted the hypothesis and the management of daily financial planning and expenses was adjusted between the needs and income. However, Lifestyle patterns often lead to insufficient income, prompting students to resort to financial technology for transactions such as purchasing credit for goods, investing, and obtaining online loans for quick and convenient access to liquid funds. Due to the urgency of needs, students frequently experience a lack of clear and transparent information regarding banking and investment products or services. This lack of clarity may include details such as initial deductions for online loans, high-interest rates, late penalties, and the varying percentages of interest and penalties associated with each online banking platform. Moreover, users of financial technology often face the risk of personal data breaches while receiving numerous offers for online goods and services. Students do not fall prey to the schemes due to a lack of financial literacy or management skills, but rather a complex interplay of factors within the ecosystem. However, government supervision has not been quick to overcome the issue by sorting out the policies implemented by online banks.

Several gaming and lifestyle-oriented platforms have been developed and are described as antecedents of the metaverse. The interactive platform operates a virtual reality (VR) headset within an immersive extended reality (XR) environment, allowing users to experience and interact in novel and diverse scenarios (Dick, 2021; Dionisio, 2013; Gent, 2022). Research has described the metaverse as a new mixture reality (MR) environment, the next invention of the internet applying the combination of blockchain technology, digital assets, and avatars allowing virtual and physical communication (Dwivedi et al., 2022). Jensen Huangsel, CEO of Nvidia, reported metaverse vision as an addition of internet function where potential aspects can be perceived beyond the economic world (Forbes, 2022).

Martin (2006) also proposed four main components of digital literacy, namely (1) digital literacy requires the ability to use digital actions in life situations, (2) digital literacy between one individual and another may differ depending on life situation, (3) digital literacy is a broader concept of ICT literacy because the variable does not explain individuals literacy in one domain, (4) digital literacy covers activities to gain the use of knowledge, techniques, attitudes and personal qualities. Digital literacy includes a spectrum of competencies, such as the capacity to strategize, execute, and assess one's actions when navigating platforms to accomplish various life tasks. Additionally, the variable includes the proficiency to contemplate and analyze the tasks critically. Digital literacy comprises individuals' aptitude to comprehend and interpret information accurately through the utilization of

information and communication technologies to attain different objectives (Knutsson et al., 2012; Ng, 2012).

Mallat (2007) found that mobile payment, as a mobile technology, offers numerous advantages. The method transcends temporal and spatial constraints, facilitating transactions both locally and remotely, ensuring convenience regardless of location. By enabling transactions to be conducted swiftly and seamlessly, mobile payment systems mitigate queues and expedite cashless transactions efficiently. According to Mallat (2007), these benefits are more pronounced in terms of situations such as queues, unexpected payment needs, time pressure, and lack of cash or loose change.

This research is in line with the results of research by Runnemark et al., (2015), See-To & Ngai (2019), and Becker (2017). According to Runnemark et al., (2015), individuals were pleased to spend more for the same goods using debit cards. See-To & Ngai (2019) considered that payment mechanisms significantly influenced consumer decisions and consumption patterns. Becker (2017) determined the influence of fintech on saving behavior and reported an increased number of customer savings.

Influence of financial literacy on financial management through behavioral Payment digital

The data in model 4 shows that financial literacy through behavior payment has a positive relationship with financial management. This can be seen from the T Statistics value greater than or equal to 1.96 and the P-value obtained < 0.05 or below 5%. The research rejected the hypothesis since the figure obtained for the T statistic and P-value were 7,962 and 0.000, respectively.

Financial Literacy effect on financial management through fintech payment behavior and the research accepted the hypothesis. The variable shows a correlation with proficient financial management, attributed to a strong comprehension of financial literacy. This understanding increases the awareness of potential losses, stimulating consumer decisions favoring the adoption of financial technology for payments. Therefore, increased utilization of fintech payments corresponds with elevated levels of financial literacy and judicious financial management. Moreover, lifestyle preferences, self-sufficiency, and exigencies drive the escalation of fintech payment behaviors, regardless of students' understanding of financial literacy and adeptness in using innovative technologies.

According to Kakinuma (2022), See-To & Ngai (2018), and Yeo & Fisher (2017), financial literacy should include digital literacy allowing the use of innovative technologies in financial management. Furthermore, attaining a sense of success correlates with an individual's ability to effectively manage and leverage possessions, leading to prosperity (Kakinuma, 2022). Technological advances in fintech payments can moderate financial management in influencing consumer decisions (See-To & Ngai, 2018). This is in line with (Yeo & Fisher, 2017) where the more often an individual uses fintech payments, the level of financial management increases due to decisions.

4. General Finding

The practical implications of these findings for financial education and policy initiatives targeting Generation Z are highly significant. Financial literacy, digital payment behavior, and financial management show the importance of incorporating financial education into formal and informal curricula. Comprehensive financial education can equip students with the knowledge and skills necessary to make informed and responsible decisions. Policy initiatives are also designed to support financial education programs, covering essential aspects such as budget management, investment, and the use of digital payment tools. This requires collaboration between educational institutions, financial institutions, and the government to develop relevant and accessible educational materials for Generation Z students.

The increased adoption of digital payments and financial literacy in the context of the Industrial Revolution 4.0 presents a set of challenges and opportunities. The main challenges include risks to data security and privacy, digital divides across demographics and regions, and resistance to change from traditional to digital payment systems. This is also a challenge for companies to adapt quickly in meeting

dynamic market needs because Generation Z is a human resource that has adequate skills and technological knowledge to meet individual needs. However, the opportunities include easier access to financial services, transaction efficiency, and broader financial inclusion. To maximize these opportunities, there needs to be a joint effort to raise awareness and understanding of cyber security, reduce the digital divide through better infrastructure and internet access, and develop inclusive digital payment solutions accessible to all layers of society.

The generalizability of the result requires validation in different contexts or populations to ensure broader applicability. Even though the research provides valuable insights into the relationship between financial literacy, digital payment behavior, and financial management among Generation Z students in Indonesia, variations in culture, economy, and technology across different regions could affect the dynamics of these relationships. Therefore, future research including more diverse samples and longitudinal methods can provide a deeper understanding of enhancing financial literacy and digital payment adoption among various populations. This research can also identify specific factors that influence the effectiveness of financial education initiatives and related policies.

5. Conclusions and Recommendation

The main findings from the SEM analysis reveal significant and complex relationships between financial literacy, digital payment behavior, and financial management. These relationships indicate that an increase in financial literacy not only directly strengthens effective financial management but also mediates digital payment behavior as an important factor in this process. These findings emphasize the need for holistic financial education for Generation Z students, which not only focuses on traditional financial aspects but also incorporates an understanding of digital payment technologies. This interpretation provides new insights into how an integrated approach to financial literacy and digital payment technologies can contribute to better financial management, offering guidance for the development of financial education curricula relevant to today's digital era.

References

- Abdillah, W., & Hartono, J. (2015). Partial least square (PLS) Alternatif structural equation modeling (SEM) dalam penelitian bisnis. *Yogyakarta: Penerbit Andi*, 22, 103–150.
- Adiputra, I. G., Suprastha, N., & Tania, L. (2021). The influence of financial knowledge, financial attitude dan locus of control on financial behavior of E-Wallet users in Jakarta. *Journal of Contemporary Issues in Business and Government Vol*, 27(1).
- Ahn, S. Y., & Nam, Y. (2022). Does mobile payment use lead to overspending? The moderating role of financial knowledge. *Computers in Human Behavior*, 134, 107319.
- An, L., Han, Y., & Tong, L. (2016). Study on the factors of online shopping intention for fresh agricultural products based on UTAUT2. *The 2nd Information Technology and Mechatronics Engineering Conference (ITOEC 2016)*, 303–306.
- Amanah, E., Rahadian, D., & Iradianty, A. (2016). Pengaruh financial knowledge, financial attitude dan external locus of control terhadap personal financial management behavior pada mahasiswa s1 universitas telkom. *EProceedings of Management*, 3(2).
- Anderloni, L., Bacchiocchi, E., & Vandone, D. (2012). Household financial vulnerability: An empirical analysis. *Research in Economics*, 66(3), 284–296.
- Arifin, A. Z. (2017). *The influence of financial knowledge, control and income on individual financial behavior*.

- Arifin, A. Z., Kevin, K., & Siswanto, H. P. (2017). The influence of financial knowledge, financial confidence, and income on financial behavior among the workforce in Jakarta. *MIX: Jurnal Ilmiah Manajemen*, 7(1), 154883.
- Arner, D. W., Barberis, J., & Buckley, R. P. (2015). The evolution of Fintech: A new post-crisis paradigm. *Geo. J. Int'l L.*, 47, 1271.
- Atkinson, A., & Messy, F.-A. (2012). *Measuring financial literacy: Results of the OECD/International Network on Financial Education (INFE) pilot study*.
- Bapat, D. (2019). Exploring antecedents to financial management behavior for young adults. *Journal of Financial Counseling and Planning*, 30(1), 44-55.
- Becker, G. (2017). Does FinTech affect household saving behavior. *Findings from a Natural Field Experiment*, 2009, 1–47.
- Budiwati, N., Hilmiatussadiyah, K. G., Nuriansyah, F., & Nurhayati, D. (2020). Economic Literacy and Economic Decisions. *Jurnal Pendidikan Ilmu Sosial*, 29(1), 85–96.
- Chang, A. (2012). UTAUT and UTAUT 2: A review and agenda for future research. *The Winners*, 13(2), 10–114.
- Chen, H., Felt, M.-H., & Huynh, K. P. (2017). Retail payment innovations and cash usage: accounting for attrition by using refreshment samples. *Journal of the Royal Statistical Society Series A: Statistics in Society*, 180(2), 503–530.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. *Modern Methods for Business Research*, 295(2), 295–336.
- Chinen, K., & Endo, H. (2012). Effects of attitude and background on personal financial ability: A student survey in the United States. *International Journal of Management*, 29(1), 33.
- Choudrie, J., Junior, C.-O., McKenna, B., & Richter, S. (2018). Understanding and conceptualising the adoption, use and diffusion of mobile banking in older adults: A research agenda and conceptual framework. *Journal of Business Research*, 88, 449–465.
- Davis, H., & Hasler, A. (2021). *Testing the Use of the Mint App in an Interactive Personal Finance Module*.
- de Bassa Scheresberg, C., Hasler, A., & Lusardi, A. (2020). *Millennial mobile payment users: A look into their personal finances and financial behavior*. ADBI Working Paper Series.
- Dew, J., & Xiao, J. J. (2011). The financial management behavior scale: Development and validation. *Journal of Financial Counseling and Planning*, 22(1), 43.
- Dick, E. (2021). *Public policy for the metaverse: Key takeaways from the 2021 AR/VR policy conference*.
- Dionisio, J. D. N., Iii, W. G. B., & Gilbert, R. (2013). 3D virtual worlds and the metaverse: Current status and future possibilities. *ACM Computing Surveys (CSUR)*, 45(3), 1-38.
- Dwiastanti, A. (2017). Analysis of financial knowledge and financial attitude on locus of control and financial management behavior. *MBR (Management and Business Review)*, 1(1), 1–8.
- Dwivedi, Y. K., Hughes, L., Baabdullah, A. M., Ribeiro-Navarrete, S., Giannakis, M., Al-Debei, M. M., Dennehy, D., Metri, B., Buhalis, D., & Cheung, C. M. (2022). Metaverse beyond the hype: Multidisciplinary perspectives on emerging challenges, opportunities, and agenda for research, practice and policy. *International Journal of Information Management*, 66, 102542.

- Edirisinghe, U. C., Keerthipala, Y. M. S., & Amarasinghe, A. R. (2017). Financial literacy and financial behavior of management undergraduates of Sri Lanka. *International Journal of Management and Applied Science*, 3(7), 1–5.
- Elhajjar, S., & Ouaida, F. (2020). An analysis of factors affecting mobile banking adoption. *International Journal of Bank Marketing*, 38(2), 352–367.
- Esselink, H., & Hernández, L. (2017). The use of cash by households in the euro area. *ECB Occasional Paper*, 201.
- Feinberg, R. A. (1986). Credit cards as spending facilitating stimuli: A conditioning interpretation. *Journal of Consumer Research*, 13(3), 348–356.
- Firmansyah, D., & Susetyo, D. P. (2022). Financial Behavior in the Digital Economy Era: Financial Literacy and Digital Literacy. *Jurnal Ekonomi Dan Bisnis Digital*, 1(4), 367–390.
- Forbes. (2022). Nvidia on how the metaverse can overtake the current economy. Retrieved : <https://www.forbes.com/sites/bethkindig/2022/02/18/nvidia-on-how-the-metaverse-can-overtake-the-current-economy/>. Accessed September, 2022.
- Forbes, J., & Kara, S. M. (2010). Confidence mediates how investment knowledge influences investing self-efficacy. *Journal of Economic Psychology*, 31(3), 435–443.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Foster, B., Sukono, & Johansyah, M. D. (2021). Analysis of the effect of financial literacy, practicality, and consumer lifestyle on the use of chip-based electronic money using SEM. *Sustainability*, 14(1), 32.
- Fujiki, H. (2020). Cash demand and financial literacy: A case study using Japanese survey data. *Japan and the World Economy*, 54, 100998.
- Garman, E. T., & Forgue, R. E. (2010). Personal Finance International Edition. *Canada: South Western Cengage Learning*.
- Gent, E. (2022). Lessons from a second life> before meta, philip rosdale created an online universe. *IEEE Spectrum*, 59(1), 19-19.
- Ghozali, I. (2008). *Structural equation modeling: Metode alternatif dengan partial least square (pls)*. Badan Penerbit Universitas Diponegoro.
- Gomber, P., Kauffman, R. J., Parker, C., & Weber, B. W. (2018). On the fintech revolution: Interpreting the forces of innovation, disruption, and transformation in financial services. *Journal of Management Information Systems*, 35(1), 220–265.
- Gomber, P., Koch, J.-A., & Siering, M. (2017). Digital Finance and FinTech: current research and future research directions. *Journal of Business Economics*, 87, 537–580.
- Grable, J. E., Park, J., & Joo, S. (2009). Explaining financial management behavior for Koreans living in the United States. *Journal of Consumer Affairs*, 43(1), 80–107.
- Greene, C., O'Brien, S., & Schuh, S. D. (2017). US consumer cash use, 2012 and 2015: An introduction to the Diary of Consumer Payment Choice. *Research Data Reports Paper*, 17–6.
- Gunawan, A. (2023). [TURNITIN] Analysis Of Factors Affectin Student Decisions In Using Digital Payment Gopay In Student Of The Faculty Of Economics And Business, Universitas Muhammadiyah Sumatera Utara. *KUMPULAN BERKAS KEPANGKATAN DOSEN*.

- Gupta, K., & Arora, N. (2020). Investigating consumer intention to accept mobile payment systems through unified theory of acceptance model: An Indian perspective. *South Asian Journal of Business Studies*, 9(1), 88–114.
- Gusni, G., Hurriyati, R., & Dirgantari, P. D. (2020). Pengaruh Perceived Usefulness dan Perceived Ease of Use terhadap Attitude dan Actual Usage Go-Pay. *Jurnal Manajemen Dan Kewirausahaan*, 8(1), 22–33.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a silver bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152.
- Hamid, F. S., & Loke, Y. J. (2021). Financial literacy, money management skill and credit card repayments. *International Journal of Consumer Studies*, 45(2), 235–247.
- Henager, R., & Cude, B. J. (2016). Financial Literacy and Long-and Short-Term Financial Behavior in Different Age Groups. *Journal of Financial Counseling and Planning*, 27(1), 3–19.
- Henry, C.S.; Huynh, K.P.; Welte, A. (2017). *A. Method-of-Payments Survey Results*. Staff Discussion Paper 2018-17; Bank of Canada: Ottawa, ON, Canada.
- Heo, W., Lee, J. M., & Rabbani, A. G. (2021). Mediation effect of financial education between financial stress and use of financial technology. *Journal of Family and Economic Issues*, 42, 413–428.
- Herawati, N. T. (2015). *Kontribusi pembelajaran di perguruan tinggi dan literasi keuangan terhadap perilaku keuangan mahasiswa*.
- Hilgert, M. A., Hogarth, J. M., & Beverly, S. G. (2003). Household financial management: The connection between knowledge and behavior. *Fed. Res. Bull.*, 89, 309.
- Hirschman, E. C. (1979). Differences in consumer purchase behavior by credit card payment system. *Journal of Consumer Research*, 6(1), 58–66.
- Humaira, I., & Sagoro, E. M. (2018). Pengaruh Pengetahuan Keuangan, Sikap Keuangan, Dan Kepribadian Terhadap Perilaku Manajemen Keuangan Pada Pelaku Umkm Sentra Kerajinan Batik Kabupaten Bantul. *Nominal, Barometer Riset Akuntansi Dan Manajemen*, 7(1). <https://doi.org/10.21831/nominal.v7i1.19363>
- Ida, I. D. A., & Dwinta, C. Y. (2010). Pengaruh Locus Of Control, financial knowledge, income terhadap financial management behavior. *Jurnal Bisnis Dan Akuntansi*, 12(3), 131–144.
- Irawan, N. N., & Matoati, R. (2021). The Influence of Financial Literacy and Behavior In Using Fintech Payments on The Financial Management of Jabodetabek Students. *Management*, 6(02).
- Jamal, A. A. A., Ramlan, W. K., Karim, M. A., & Osman, Z. (2015). The effects of social influence and financial literacy on savings behavior: A study on students of higher learning institutions in Kota Kinabalu, Sabah. *International Journal of Business and Social Science*, 6(11), 110–119.
- Jaradat, M.-I. R. M., & Al Rababaa, M. S. (2013). Assessing key factor that influence on the acceptance of mobile commerce based on modified UTAUT. *International Journal of Business and Management*, 8(23), 102.
- Jonker, N., Hernandez, L., de Vree, R., & Zwaan, P. (2017). *From cash to cards: How debit card payments overtook cash in the Netherlands*.
- Jorgensen, B. L. (2007). *Financial literacy of college students: Parental and peer influences*. Virginia Tech.
- Junadi^a, S. (2015). A model of factors influencing consumer's intention to use e-payment system in

Indonesia. *Procedia Computer Science*, 59, 214–220.

Kadoya, Y., & Khan, M. S. R. (2020). What determines financial literacy in Japan? *Journal of Pension Economics & Finance*, 19(3), 353–371.

Kakinuma, Y. (2022). Financial literacy and quality of life: a moderated mediation approach of fintech adoption and leisure. *International Journal of Social Economics*, 49(12), 1713–1726.

KEUANGAN, D. K. O. J. (n.d.). *Peraturan Otoritas Jasa Keuangan Nomor 76/Pojk. 07/2016 Tentang Peningkatan Literasi Dan Inklusi Keuangan Di Sektor Jasa Keuangan Bagi Konsumen Dan/Atau Masyarakat*.

Kim, Y., Choi, J., Park, Y.-J., & Yeon, J. (2016). The adoption of mobile payment services for “Fintech.” *International Journal of Applied Engineering Research*, 11(2), 1058–1061.

Klapper, L., Lusardi, A., & Van Oudheusden, P. (2015). Financial literacy around the world. *World Bank. Washington DC: World Bank*, 2, 218–237.

Knutson, B., Rick, S., Wimmer, G. E., Prelec, D., & Loewenstein, G. (2007). Neural predictors of purchases. *Neuron*, 53(1), 147–156.

Knutsson, O., Blåsjö, M., Hållsten, S., & Karlström, P. (2012). Identifying different registers of digital literacy in virtual learning environments. *The Internet and higher education*, 15(4), 237–246.

Koulayev, S., Rysman, M., Schuh, S., & Stavins, J. (2016). Explaining adoption and use of payment instruments by US consumers. *The RAND Journal of Economics*, 47(2), 293–325.

Lemeshow, S., Hosmer, D. W., Klar, J., & Lwanga, S. K. (1997). Besar sampel dalam penelitian kesehatan. *Yogyakarta: Gajah Mada University*.

Liao, C.-F., & Chen, C.-D. (2020). Financial Literacy and Mobile Payment Behaviors. *Journal of Accounting & Finance (2158-3625)*, 20(7).

Liao, C.-F., & Chen, C.-D. (2021). Influences of mobile payment usage on financial behaviors. *International Review of Accounting, Banking & Finance*, 13(1), 1–16.

Lusardi, A., de Bassa Scheresberg, C., & Avery, M. (2018). Millennial mobile payment users: a look into their personal finances and financial behaviors. *GFLEC Insights Report <https://gflec.org/Wp-Content/uploads/2018/04/GFLEC-Insight-Report-Millennial-Mobile-Payment-Users-Final.pdf>*.

Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. *American Economic Journal: Journal of Economic Literature*, 52(1), 5–44.

Mallat, N. (2007). Exploring consumer adoption of mobile payments—A qualitative study. *The Journal of Strategic Information Systems*, 16(4), 413–432.

Martin, A. (2006). A European framework for digital literacy. *Nordic Journal of Digital Literacy*, 1(2), 151–161.

Mathews, L. G. (1999). *Promoting economic literacy: ideas for your classroom*.

Meyll, T., & Walter, A. (2019). Tapping and waving to debt: Mobile payments and credit card behavior. *Finance Research Letters*, 28, 381–387.

Mien, N. T. N., & Thao, T. P. (2015). Factors affecting personal financial management behaviors: Evidence from Vietnam. *Proceedings of the Second Asia-Pacific Conference on Global Business, Economics, Finance and Social Sciences (AP15Vietnam Conference)*, 10(5), 1–16.

- Mm, C., Haskel Janah, H., & Susan, J. (2009). Financial Attitudes And Spending Habits Of University Fresmen. *Journal of Economics and Economi Education Research*, 10(1), 23–26.
- Morgan, P. J., Huang, B., & Trinh, L. Q. (2019). The need to promote digital financial literacy for the digital age. *IN THE DIGITAL AGE*.
- Ng, W. (2012). Can we teach digital natives digital literacy? *Computers & Education*, 59(3), 1065-1078.
- OECD. (2017). “PISA 2015 Results (Volume IV): Students’ Financial Literacy”. OECD Publishing, Paris, France.
- Olejnik, S., & Algina, J. (2003). Generalized eta and omega squared statistics: measures of effect size for some common research designs. *Psychological Methods*, 8(4), 434.
- Perry, V. G., & Morris, M. D. (2005). Who is in control? The role of self-perception, knowledge, and income in explaining consumer financial behavior. *Journal of Consumer Affairs*, 39(2), 299–313.
- Prelec, D., & Loewenstein, G. (1998). The red and the black: Mental accounting of savings and debt. *Marketing Science*, 17(1), 4–28.
- Prelec, D., & Simester, D. (2001). Always leave home without it: A further investigation of the credit-card effect on willingness to pay. *Marketing Letters*, 12, 5–12.
- Raghubir, P., & Srivastava, J. (2008). Monopoly money: The effect of payment coupling and form on spending behavior. *Journal of Experimental Psychology: Applied*, 14(3), 213.
- Rahayu, R., Ali, S., Aulia, A., & Hidayah, R. (2022). The current digital financial literacy and financial behavior in Indonesian millennial generation. *Journal of Accounting and Investment*, 23(1), 78–94.
- Robb, C. A., & Woodyard, A. (2011). Financial knowledge and best practice behavior. *Journal of Financial Counseling and Planning*, 22(1).
- Runnemark, E., Hedman, J., & Xiao, X. (2015). Do consumers pay more using debit cards than cash? *Electronic Commerce Research and Applications*, 14(5), 285–291.
- See-To, E. W. K., & Ngai, E. W. T. (2018). Customer reviews for demand distribution and sales nowcasting: a big data approach. *Annals of Operations Research*, 270, 415–431.
- See-To, E. W. K., & Ngai, E. W. T. (2019). An empirical study of payment technologies, the psychology of consumption, and spending behavior in a retailing context. *Information & Management*, 56(3), 329–342.
- Senduk, S. (2005). “Siapa bilang jadi karyawan nggak bisa kaya?”: 5 kiat praktis mengelola gaji agar bisa kaya. Elex Media Komputindo.
- Serido, J., Shim, S., & Tang, C. (2013). A developmental model of financial capability: A framework for promoting a successful transition to adulthood. *International Journal of Behavioral Development*, 37(4), 287–297.
- Setiawan, M., Effendi, N., Santoso, T., Dewi, V. I., & Sapulette, M. S. (2022). Digital financial literacy, current behavior of saving and spending and its future foresight. *Economics of Innovation and New Technology*, 31(4), 320–338.
- Shah, A. M., Eisenkraft, N., Bettman, J. R., & Chartrand, T. L. (2016). “Paper or plastic?”: How we pay influences post-transaction connection. *Journal of Consumer Research*, 42(5), 688–708.
- Shvandar, D. (2020). Timely financial and economic literacy for school children as basis for economic growth in future. *International Scientific Conference" Far East Con"(ISCFEC 2020)*, 2661–2668.

- Soman, D. (2003). The effect of payment transparency on consumption: Quasi-experiments from the field. *Marketing Letters*, 14, 173–183.
- Stolper, O. A., & Walter, A. (2017). Financial literacy, financial advice, and financial behavior. *Journal of Business Economics*, 87, 581–643.
- Świecka, B., Terefenko, P., & Paprotny, D. (2021). Transaction factors' influence on the choice of payment by Polish consumers. *Journal of Retailing and Consumer Services*, 58, 102264.
- Tang, N., & Baker, A. (2016). Self-esteem, financial knowledge and financial behavior. *Journal of Economic Psychology*, 54, 164–176.
- Torraco, R. J. (2005). Writing integrative literature reviews: Guidelines and examples. *Human Resource Development Review*, 4(3), 356–367.
- Van der Merwe, E. (2012). *Economic literacy as a factor affecting allocative efficiency*. University of the Free State.
- Venkatesh, V., Morris, M. G., Davis, G. B., & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 425–478.
- Venkatesh, V., Thong, J. Y. L., & Xu, X. (2012). Consumer acceptance and use of information technology: extending the unified theory of acceptance and use of technology. *MIS Quarterly*, 157–178.
- Vitt, L. A., Anderson, C. A., Kent, J., & Lyter, D. (2000). *Personal Finance*. Washington, DC: Fannies Mea Foundation.
- Volpe, R. P., Chen, H., & Pavlicko, J. J. (1996). Personal investment literacy among college students: A survey. *Financial Practice and Education*, 6(2), 86–94.
- Wangmo, P. (2018). *Assessing the Level and Impact of Financial Literacy on individualsaving and spending habits in Royal Institute of Management*. RIM.
- Weekly, F. (2017). FinTech definition. *FinTech Weekly*.
- Yakoboski, P. J., Lusardi, A., & Hasler, A. (2018). *Millennial financial literacy and Fin-tech use: Who knows what in the digital era*.
- Yeo, J. H., & Fisher, P. J. (2017). Mobile financial technology and consumers' financial capability in the United States. *Journal of Education & Social Policy*, 7(1), 80–93.
- Yusof, S. A., Rokis, R. A., & Jusoh, W. J. W. (2015). Financial fragility of urban households in Malaysia. *Jurnal Ekonomi Malaysia*, 49(1), 15–24.
- Zellermayer, O. (1996). *The pain of paying*. Carnegie Mellon University.