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The Influence of Digital Financial Services, Social Media, and Buy Now Pay Later on Over-Indebtedness with Financial Literacy as a Moderating Variable

Helma Yuliyana [1*], Abdul Mukti Soma [2]
[1*,2] Management Study Program, Faculty of Social Economics and Humanities, Universitas Teknologi Muhammadiyah Jakarta, South Jakarta City, Special Capital Region of Jakarta, Indonesia

Email: helmayuliana56@gmail.com [1*], muktisoma@telkomuniversity.ac.id [2]

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Abstract
This study investigates the impact of digital financial services and financial literacy on the issue of over-indebtedness among Millennials and Generation Z in Jakarta. Utilizing a quantitative approach with a causal design, data were gathered from 254 participants through questionnaires and analyzed using Partial Least Square Structural Equation Modeling (PLS-SEM). Findings reveal that both digital financial services and financial literacy significantly influence over-indebtedness. Notably, higher levels of over-indebtedness correspond to more effective debt management and reduced financial distress. This suggests that leveraging digital financial services, alongside enhanced financial literacy, fosters improved financial stability in younger demographics. In contrast, social media and Buy Now Pay Later options did not demonstrate significant effects, and financial literacy did not serve as a moderating factor in the examined relationships. This research enriches the understanding of youth financial behavior within the digital economy and offers actionable insights for promoting financial literacy and risk management strategies aimed at sustaining financial well-being among Millennials and Generation Z.

Keywords:
Digital Financial Services; Financial Literacy; Buy Now Pay Later; Over-Indebtedness; Young Generation.

1. INTRODUCTION

The advancement of information technology and the digitization of financial services have fundamentally transformed individual financial management. The ease of accessing various financial services through digital applications such as e-wallets, Buy Now Pay Later (BNPL), and online payment platforms has streamlined transactions. However, this convenience brings significant risks that warrant attention. One notable risk is over-indebtedness, where individuals accumulate debt beyond their repayment capacity. This condition can lead to sustained economic pressure, especially when coupled with consumerist behavior and insufficient financial knowledge. Understanding the impact of digital financial services on financial decisions is essential, particularly for Millennials and Generation Z who have been immersed in technology from an early age. While these groups enjoy extensive access to digital financial tools, they are also susceptible to adverse effects stemming from their usage. Over-indebtedness is frequently triggered by social and behavioral factors, including impulsive spending habits and the frequency of digital service use, which can lead to poor financial choices (Cesar Leandro & Botelho, 2022).

Social media significantly influences the consumption patterns of younger generations. Platforms like Instagram, TikTok, and YouTube not only entertain but also promote specific lifestyles. Users often feel compelled to align with consumption trends for self-expression or social validation, influenced by content shared by influencers and peers. This pressure is exacerbated by targeted advertising, which can transform purchasing behavior into impulsive actions. Without careful financial planning, such habits may culminate in harmful consumer debt (Chowdhury et al., 2024a). The rise of financing options, particularly BNPL programs, appeals to young consumers by allowing purchases to be made with manageable installments or interest-free payments. However, this convenience is often misinterpreted as financial freedom. Consumers who feel unburdened during purchases may neglect the long-term implications of accruing debt. Reliance on BNPL can worsen consumer behavior, as individuals may fail to recognize their total debt load or face challenges in future repayments, ultimately exacerbating over-indebtedness (Krisnawati & Sam, 2024a). In navigating the influences of digital financial services, social media, and BNPL, financial literacy emerges as a critical factor. Individuals with a solid grasp of fundamental financial principles, such as budgeting and debt management, are better positioned to avoid irrational spending and make informed decisions. Adequate financial literacy enables individuals to leverage digital financial services and BNPL programs effectively, thereby minimizing the risk of over-indebtedness and fostering financial stability (Muñoz-Céspedes et al., 2021a).

The expansion of digital financial services has significantly impacted social and psychological conditions, particularly among youth. Over-indebtedness, characterized by difficulty in meeting debt obligations, triggers various emotional challenges, including shame and anxiety, as well as mental health issues like depression. A consumer-oriented lifestyle and impulsive buying behaviors are intensified by easy access to digital loans, which are often utilized for consumption rather than productive purposes (Kusumawati et al., 2025). A primary contributor to this issue is the low level of financial literacy among young individuals. Many lack a comprehensive understanding of personal finance management, loan interest systems, credit risks, and the importance of long-term financial planning. This gap in knowledge renders them vulnerable to poor financial decision-making, leading to detrimental debt behavior that undermines financial stability (Jennifer & Widoatmodjo, 2023).

In metropolitan areas like DKI Jakarta, the signs of over-indebtedness are increasingly apparent. The youth in this city are heavily influenced by trends in digital financial services, raising the risk of falling into consumer debt traps. Research indicates that Gen Z users of Shopee PayLater in Jakarta often incur debt due to impulsive spending and consumer urges (Farrenlie & Pamungkas, 2024a). The shift from cash transactions to digital payments via e-wallets has facilitated remarkable convenience. While individuals can shop quickly and efficiently, this ease also promotes unplanned consumer behavior. Many faces over-indebtedness as initially small digital debts evolve into significant financial burdens (Aji & Adawiyah, 2022). The adoption of digital payment systems, such as QRIS, further reinforces instant consumption patterns. Reports reveal a 130.01% increase in QRIS usage in 2023, and without adequate financial understanding, this trend may encourage impulsive purchasing behavior (Muninggar, R. A., & Rahardiansah, T., 2024). Social media continues to play a pivotal role in shaping consumer behavior, with platforms like Instagram and TikTok often driving purchasing decisions based on emotional impulses rather than genuine needs (Panasea, 2022a). BNPL programs also contribute to unhealthy consumption patterns, fostering misconceptions about users' financial capabilities (Aisjah, 2024). Impulsive consumer behavior among Millennials and Gen Z threatens personal financial stability. Therefore, the involvement of academics, policymakers, and industry stakeholders is crucial in devising strategic approaches to address unhealthy consumption patterns. Enhancing financial literacy among youth is essential to empower them to recognize and manage the impacts of digitalization on their financial behavior (Paramitalaksmi & Budiantara, 2025).

The demographic of Millennials and Gen Z, currently in an economically active and productive phase, is a primary target for various digital marketing strategies and technology-driven financial services. Their extensive exposure to digital promotions and easy access to financial products heightens their vulnerability to over-indebtedness. This predicament arises when individuals find themselves trapped in debt due to consumption behaviors driven by emotional pressures, such as stress or anxiety, even when they recognize their financial limitations (Cassie Hurwitz, 2024). Impulsive shopping behavior in Indonesia exhibits unique characteristics, shaped by diverse factors including inflationary pressures, consumer culture, and social media influence. As prices for essential goods and energy rise, young people often dip into their savings to cope financially, subsequently alleviating that stress through impulsive purchases (Wibisono & Fachira, 2021). When this urge is coupled with easy access to digital financial services like e-wallets and pay-later options, the risk of over-indebtedness escalates, leading to a buildup of consumer debt that exceeds individuals' financial capabilities.

DKI Jakarta has been selected as the research site due to its status as a hub for digital economic growth in Indonesia. Here, the adoption of digital financial services and social media usage is notably high, particularly among the youth. However, this environment also presents serious challenges, including a consumer lifestyle and significant social pressures that can trap young individuals in over-indebtedness. This situation arises when debt surpasses the financial capacity to repay it. Various public programs have been initiated to enhance the financial understanding and skills of young people, enabling them to manage their finances more effectively and avoid excessive debt burdens. Borrowing decisions are often influenced by emotional pressures and social influences rather than urgent needs (Krisnawati & Sam, 2024b). The phenomenon of over-indebtedness is increasingly prevalent among Millennials and Gen Z, particularly in DKI Jakarta. This trend stems from easy access to digital financial services, strong social media influences, and low levels of financial literacy. While numerous studies have addressed consumer behavior, there remains a gap in structurally linking these variables. Research indicates that the use of online lending services and BNPL can exacerbate financial risks and emotional pressures (Kusumawati et al., 2025; Frigerio et al., 2020).

Social media acts as a catalyst for consumer lifestyles, yet the relationship between social media and over-indebtedness requires further investigation (Chowdhury et al., 2024b). The easy availability of BNPL increases the risk of unmanaged debt; however, prior research has predominantly focused on consumption behavior rather than debt accumulation (Krisnawati & Sam, 2024a). Financial literacy is vital in shaping consumer behavior, but its role as a moderating factor has not been extensively studied. A lack of understanding regarding credit risks contributes to over-indebtedness (Jennifer & Widoatmodjo, 2023). This research seeks to address this gap by examining financial literacy as a factor that can either amplify or mitigate the influence of digital financial services, social media, and BNPL on the tendency for over-indebtedness among young individuals.

In financial management, consumer behavior and the utilization of digital financial services such as Buy Now Pay Later (BNPL) are often influenced by psychological and social factors. Digital financial services and social media shape attitudes and norms that can promote over-indebtedness. Financial literacy is crucial, as a better understanding of financial principles allows individuals to manage debt more effectively. The Self-Control Theory posits that impulsiveness in spending often stems from an individual's inability to resist urges. Those who struggle to regulate their desires are likely to make less prudent financial decisions. In this context, financial literacy enhances self-control, enabling individuals with a solid financial understanding to avoid impulsive choices that may lead to over-indebtedness (Krisnawati & Sam, 2024a). Additionally, the Social Comparison Theory suggests that individuals tend to evaluate their social standing by comparing themselves to others. Social media serves as a primary platform for such comparisons, where the lifestyles and consumption patterns displayed by others compel Millennials and Gen Z to follow trends, even when their financial circumstances do not allow for it. This behavior significantly heightens the risk of over-indebtedness (Chowdhury et al., 2024a).

The Technology Acceptance Model (TAM) explains that acceptance of technology is influenced by perceived benefits and ease of use. Young generations rapidly adopt digital financial services due to their practicality; however, this positive perception often overlooks the long-term risks that could lead to over-indebtedness (Aji & Adawiyah, 2022). The Household Finance Theory examines how individuals make financial decisions regarding consumption and debt. Poorly managed financial decisions can increase the risk of over-indebtedness, especially for youth in Jakarta exposed to consumer lifestyles (Kusumawati et al., 2025). Over-indebtedness occurs when individuals have debt exceeding their financial capabilities. Contributing factors include a lack of financial understanding, impulsive behavior, unexpected events, and aggressive strategies from financial institutions (Farrenlie & Pamungkas, 2024a). Digital financial services (fintech) empower individuals to conduct financial activities independently of conventional financial institutions, while the TAM framework helps understand how young people accept these services (Muninggar, R. A., & Rahardiansah, T., 2024).

BNPL facilitates the purchase of goods with installment payments. While it offers flexibility, BNPL can also increase the risk of uncontrolled consumer behavior, particularly among youth (Aisjah, 2024). Utilizing BNPL without adequate planning can worsen financial situations. Financial literacy encompasses the knowledge and skills necessary for effective financial management, with individuals possessing high literacy levels being more judicious in their decision-making and better equipped to avoid over-indebtedness (Jennifer & Widoatmodjo, 2023). In this regard, financial literacy serves as a protective mechanism, assisting individuals in navigating the influences of social media and digital financial services.

2. RESEARCH METHOD

This study was conducted from March to May 2025 in DKI Jakarta, encompassing five regions: Central Jakarta, North Jakarta, West Jakarta, South Jakarta, and East Jakarta. This selection is justified by DKI Jakarta's status as a center of significant economic activity and digital innovation, housing a considerable population of Millennials and Generation Z, who serve as the focal point of this research (Kuncoro, 2020). The research employs a causal design to investigate the relationships between independent variables—digital financial services, social media, and Buy Now Pay Later (BNPL)—and the dependent variable of over-indebtedness, with financial literacy acting as a moderating variable (L. N. Wati & Momon, 2021). A quantitative approach is utilized through a survey method, enabling statistical analysis to assess the interrelations among these variables.

Operational definitions of the variables clarify how constructs are measured, allowing for replication by other researchers (L. N. Wati & Momon, 2021). The independent variables include digital financial services, social media, and BNPL, which are anticipated to influence the dependent variable, over-indebtedness. Financial literacy, as a moderating variable, is expected to affect the strength and direction of the relationships between the independent and dependent variables. Over-indebtedness is assessed using indicators that reflect sound debt management practices. Higher scores indicate better financial management and a reduced risk of over-indebtedness, while lower scores signal a heightened potential risk (Saputra, 2024).

The target population for this study consists of Millennials and Generation Z residing in DKI Jakarta who have experience with digital financial services, social media, or BNPL. According to the DKI Jakarta Provincial Statistics Agency (BPS), the estimated population of these generations in 2025 is around 6,250,000 individuals

(BPS-Statistics Indonesia DKI Jakarta, 2025). For sampling, this research employs a non-probability sampling technique using purposive sampling methods. Criteria for inclusion specify individuals born between 1981 and 2012, residing in DKI Jakarta, and having utilized digital financial services, social media, or BNPL. Based on the formula proposed by Hair et al. (2021), a minimum sample size of 220 respondents is determined, distributed across the five regions of DKI Jakarta.

Data for this study is primary, collected directly from respondents. The quantitative data consists of numerical responses derived from a structured questionnaire designed according to the indicators of each variable. Data collection involved distributing an online questionnaire via Google Forms. This instrument was crafted to gather thorough information on the research topic and was disseminated through various social media platforms and messaging applications to reach respondents fitting the established criteria (Asari et al., 2023).

Data analysis was performed using Structural Equation Modeling (SEM) based on Partial Least Squares (PLS) with SmartPLS software (Hair et al., 2021). This approach is suitable for complex research models involving multiple indicators, particularly when data do not strictly adhere to normal distribution assumptions. SEM facilitates the examination of relationships between independent variables (digital financial services, social media, and BNPL) and the dependent variable (over-indebtedness), while also assessing the role of financial literacy as a moderating factor.

Validity testing aims to evaluate the extent to which indicators accurately represent the constructs being measured. This assessment is conducted through structural modeling based on PLS using SmartPLS software. Convergent validity is evaluated through outer loading values for each indicator, where indicators with loading values below 0.5 are excluded from the model. Additionally, reliability testing is performed to assess the consistency of indicators within a construct. This testing employs two primary metrics: Cronbach's Alpha and Composite Reliability. A construct is deemed reliable if the alpha value is 0.60 or higher, while values below this threshold indicate low consistency (Ghozali, 2021).

The evaluation of the structural model (inner model) seeks to determine how well the relationships among latent constructs in the research model can be statistically explained. This analysis utilizes R-square values to indicate the extent of influence exerted by exogenous constructs on endogenous constructs. Hypothesis testing is conducted using the PLS-based SEM model, aiming to assess the effects of multiple independent variables on a single dependent variable and analyze interaction effects through moderation. Financial literacy serves as a moderating variable to examine whether the influence of the three independent variables on over-indebtedness is strengthened or weakened based on the respondents' levels of financial literacy.

3. RESULTS AND DISCUSSION

3.1. Results

Over-indebtedness manifests when individuals find themselves with debt that surpasses their financial capabilities, a trend particularly evident among Millennials and Generation Z. This issue is not merely a response to immediate needs; it is also influenced by lifestyle choices, emotional impulses, and the ease of digital transactions. Innovations in payment technology, such as e-wallets and mobile banking, have simplified transactions. Additionally, social media plays a pivotal role in shaping consumption preferences through promotional content and influencer endorsements. The Buy Now Pay Later (BNPL) feature on e-commerce platforms has captured the attention of younger consumers due to its flexible payment options. However, this convenience may inadvertently promote excessive consumption, increasing the likelihood of incurring debt without proper planning. This study seeks to analyze the impact of digital financial services, social media, and BNPL usage on the levels of over-indebtedness while assessing the moderating role of financial literacy. DKI Jakarta was chosen as the research location due to its status as a hub for digital economic innovation. From a target of 220 respondents, a total of 254 individuals participated, including students and young professionals actively engaged with digital financial services and BNPL across the region.

3.1.1. Respondent Characteristics

The research utilized an online questionnaire distributed via Google Forms, resulting in 254 valid responses for analysis. Respondent characteristics examined include gender, age, education, residence, employment status, and usage of pay later services. Among the respondents, 137 were male (54%) and 117 were female (46%). The majority, 155 respondents (61%), fell within the 13-28 age range (Gen Z), while 99 respondents (39%) were aged 28-44 (Millennials). In terms of education, 41.3% were high school graduates, and 34.3% held bachelor's degrees. The highest number of respondents resided in South Jakarta, totaling 83 individuals (32.7%). Students represented the largest employment category, with 101 individuals (39.8%). A significant proportion, 183 respondents (72%), reported using pay later services, primarily for everyday shopping needs (26.8%).

Table 1. Respondent Characteristics

No	Characteristic	Category	Number of Respondents	Percentage
1	Gender	Male	137	54.0%
		Female	117	46.0%
2	Age Group	13–27 years (Gen Z)	155	61.0%
		28–44 years (Millennials)	99	39.0%
3	Last Education	Middle School	11	4.3%
		High School/Vocational	105	41.3%
		Diploma (D1–D3)	44	17.3%
		Bachelor's (S1)	87	34.3%
		Postgraduate (S2/S3)	7	2.8%
4	Residence	West Jakarta	51	20.1%
		Central Jakarta	31	12.2%
		South Jakarta	83	32.7%
		East Jakarta	43	16.9%
		North Jakarta	46	18.1%
5	Employment Status	Unemployed	14	5.5%
		Housewife	15	5.9%
		Student	101	39.8%
		Part-time Worker	31	12.2%
		Full-time Worker	57	22.4%
		Entrepreneur	36	14.2%
6	Usage of Pay Later	No	71	28.0%
		Yes	183	72.0%
7	Frequency of Use	Never	78	30.7%
		1–2 times	98	38.6%
		3–5 times	46	18.1%
		>5 times	32	12.6%
8	Purpose of Use	Daily Needs Shopping	68	26.8%
		Fashion/Entertainment	59	23.2%
		Bills/Service Payments	56	22.0%
		Not Using	71	28.0%

3.1.2. Descriptive Analysis of Research Variables

The findings summarize the responses regarding the influence of digital financial services, social media, and Buy Now Pay Later on over-indebtedness among Millennials and Generation Z, with financial literacy serving as a moderating variable. Descriptive statistics were employed to assess trends in responses for each research variable. Measurement utilized a four-point Likert scale based on established indicators. This scale was selected due to its effectiveness in enhancing validity and reliability while encouraging respondents to provide clearer answers (Alan & Kabasakal, 2020). The results serve as a foundation for understanding respondent behavior patterns in this research.

Table 2. Likert Scale

Response	Score
Strongly Disagree (SD)	1
Disagree (D)	2
Agree (A)	3
Strongly Agree (SA)	4

Table 2 outlines the Likert scale used to assess respondents' attitudes toward specific statements. This scale includes four response levels: Strongly Disagree (SD) with a score of 1, Disagree (D) with a score of 2, Agree (A) with a score of 3, and Strongly Agree (SA) with a score of 4. Utilizing this scale enables researchers to gain insights into respondents' views and preferences, providing valuable data for analyzing attitudes toward the issues presented. It serves as an effective tool for quantitatively measuring perceptions.

Table 3. Measurement Values in the Questionnaire

Group	Lower Limit	Interval	Upper Limit	Description
1	1.00	0.75	1.75	Strongly Disagree
2	1.76	0.75	2.50	Disagree
3	2.51	0.75	3.25	Agree
4	3.26	0.75	4.00	Strongly Agree

Table 3 details the measurement values in the questionnaire used to assess respondents' attitudes. The groups are differentiated by value ranges. The first group, with limits from 1.00 to 1.75, indicates "Strongly Disagree." The second group, ranging from 1.76 to 2.50, reflects "Disagree." The third group, from 2.51 to 3.25, signifies "Agree," and the final group, from 3.26 to 4.00, denotes "Strongly Agree." This classification aids in clarifying variations in respondents' attitudes.

Table 4. Statements for Digital Financial Services Variable (DFS)

No	Statement
1	I find digital financial applications easy to use.
2	The main menu and features of digital financial applications are clear and easy to understand.
3	I feel my personal data and transactions are secure when using digital financial services.
4	I always perform verifications such as OTP or PIN before making transactions.
5	Digital financial applications process quickly when used.
6	Customer service or help centers in the app respond promptly to my complaints.

Table 4 lists statements related to the Digital Financial Services (DFS) variable measured in the questionnaire. These statements cover various aspects, such as ease of application use, clarity of menus and features, and data security. Respondents were also asked to evaluate their verification habits before transactions, the speed of application processing, and the responsiveness of customer service to complaints. This set of statements aims to gauge user experience and satisfaction with digital financial services.

3.1.3. Results of Outer and Inner Model Testing Analysis using Smart PLS

Data analysis in this study was conducted utilizing Smart Partial Least Square (SmartPLS) version 4.1.1.6. The evaluation stages of the model encompass assessing the structural model (inner model) and the measurement model (outer model) as part of the Partial Least Square analysis procedure. As explained in Chapter III, the Over-Indebtedness variable in this study is measured using indicators that reflect healthy and stable debt management conditions. Consequently, higher scores indicate a lower risk of over-indebtedness. Thus, the interpretation of coefficient directions in the structural model refers to these operational definitions. Model validity assessment is performed through the measurement model, known in the PLS approach as the outer model. Convergent validity in the measurement model with reflective indicators is calculated based on the correlation between item scores (component scores) and construct scores, corresponding to confirmatory analysis through confirmatory factor analysis. A reflective indicator is considered to have good validity if it has a loading value greater than 0.7 concerning the construct it measures. However, for research at the development or exploratory stage, loading values between 0.5 and 0.6 are still deemed acceptable.

The evaluation of the outer model in this study was conducted based on four main criteria used to assess the quality of the measurement model in the Partial Least Square approach. These criteria include convergent validity, discriminant validity, composite reliability, and Cronbach's Alpha. Each criterion ensures that the indicators forming a construct meet the requirements of consistency, accuracy, and adequate differentiation among variables. The following figure provides a visual representation of the research model, illustrating the relationships among latent variables and their respective indicators.

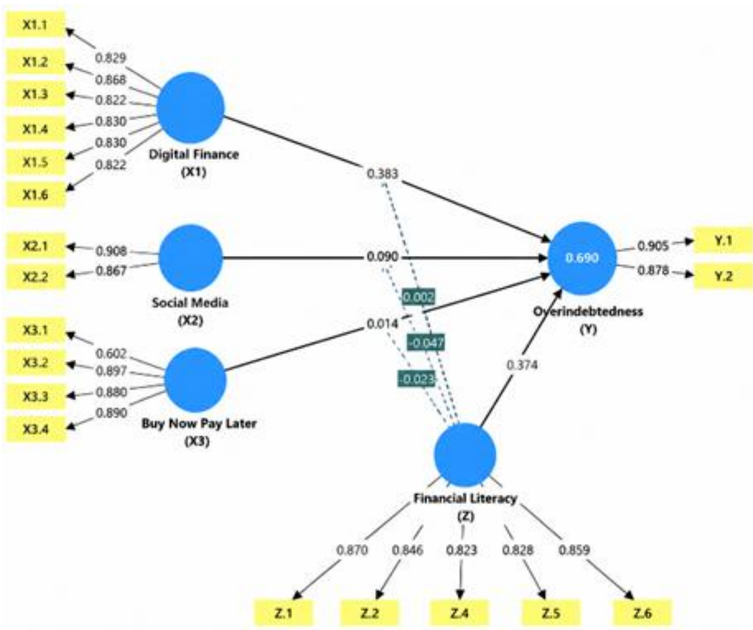

Figure 1. Outer Loading Results After Indicator Elimination

One method for assessing the viability of a measurement model with reflective indicators involves examining the correlation between item scores and construct scores. Indicators are deemed reliable when their loading values exceed 0.70, indicating a strong representation of the construct. However, Ghozali and Latan (2014) note that loading values within the range of 0.50 to 0.60 can still be acceptable, particularly in preliminary research or instrument development. Table 4.23 displays the outer loading results obtained from Smart PLS output, which serves as a basis for evaluating the contribution of each indicator to the measured construct.

Table 5. Outer Loading Values of Research Indicators

Variable	Indicator	Loading	Description
Digital Financial	DF.1	0.829	Valid
	DF.2	0.868	Valid
	DF.3	0.822	Valid
	DF.4	0.830	Valid
	DF.5	0.830	Valid
	DF.6	0.822	Valid
Social media	SM.1	0.908	Valid
	SM.2	0.867	Valid
Buy Now Pay Later	BNPL.1	0.602	Valid
	BNPL.2	0.897	Valid
	BNPL.3	0.880	Valid
	BNPL.4	0.890	Valid
Over-Indebtedness	OI.1	0.905	Valid
	OI.2	0.878	Valid
Financial Literacy	FL.1	0.870	Valid
	FL.2	0.846	Valid
	FL.3	0.823	Valid
	FL.5	0.828	Valid
	FL.6	0.859	Valid

The outer loading results indicate that all indicators in the research model are valid after eliminating those that were not effective, with values exceeding the threshold of 0.70. This confirms that the indicators accurately reflect the constructs being measured. For the digital financial variable, outer loading values range from 0.822 to 0.868. The social media variable shows values between 0.867 and 0.908, while Buy Now Pay Later ranges from 0.602 to 0.897. The over-indebtedness and financial literacy variables exhibit values of 0.878 to 0.905 and 0.823 to 0.870, respectively. These findings affirm the consistent representation of all indicators.

Table 6. Fornell–Larcker Criterion Results

Constructs	Buy Now Pay Later (X3)	Digital Financial (X1)	Financial Literacy (Z)	Social media (X2)	Over-Indebtedness (Y)
Buy Now Pay Later (X3)	0.827				
Digital Financial (X1)	0.608	0.834			
Financial Literacy (Z)	0.510	0.732	0.845		
Social media (X2)	0.537	0.500	0.508	0.888	
Over-Indebtedness (Y)	0.519	0.769	0.767	0.511	0.892

The results from the discriminant validity test using the Heterotrait–Monotrait Ratio (HTMT) indicate that all HTMT values between constructs in the research model remain below the tolerance threshold of 0.90, reflecting strong discriminant validity. The HTMT value between the Buy Now Pay Later (X3) and Digital Financial (X1) variables is 0.675; for Financial Literacy (Z), it is 0.733, and for Over-Indebtedness (Y), it is 0.722. The relationship between Digital Financial (X1) and Financial Literacy (Z) has a value of 0.748, while social media (X2) and Over-Indebtedness (Y) is at 0.786, all within acceptable limits. The discriminant validity test further confirms that the square root of AVE for each construct exceeds the correlations between constructs, validating that the research model meets the criteria for discriminant validity.

Reliability testing in this study employed composite reliability and Cronbach's alpha values. A construct is considered reliable if it has a composite reliability value greater than 0.70 (Wati & SE, 2021). This indicates that the indicators within the construct demonstrate good internal consistency in measuring the same variable. Table 7 presents the reliability analysis results for all research variables.

Table 7. Composite Reliability and Cronbach Alpha

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Buy Now Pay Later X3	0.845	0.906	0.894	0.683
Digital Financial X1	0.912	0.913	0.932	0.695
Financial Literacy Z	0.900	0.904	0.926	0.714
Social media X2	0.733	0.749	0.882	0.788
Over-Indebtedness Y	0.743	0.750	0.886	0.795

The reliability test results show that composite reliability values for all constructs in this study range from 0.882 to 0.932, surpassing the 0.70 threshold and thus meeting the reliability criteria. Cronbach’s alpha values for the digital financial, social media, Buy Now Pay Later, financial literacy, and over-indebtedness variables are also above 0.70, indicating strong internal consistency. Moreover, the average variance extracted (AVE) values for all variables exceed 0.50, reinforcing convergent validity. In conclusion, the research instruments demonstrate strong reliability and internal consistency for subsequent analysis.

3.1.4. Evaluation of Structural Results (Inner Model)

The evaluation of the structural model (inner model) analyzes the relationships among latent variables within the research framework. This analysis aims to determine how well independent and moderating variables explain variations in the dependent variable, while also testing the direction and significance of influences among variables as outlined in the hypotheses. The structural model analysis in this study was executed using the bootstrapping method in SmartPLS software, which includes path coefficient testing and determination coefficient (R-Square) values. The outcomes of the structural model evaluation are illustrated in the following figure.

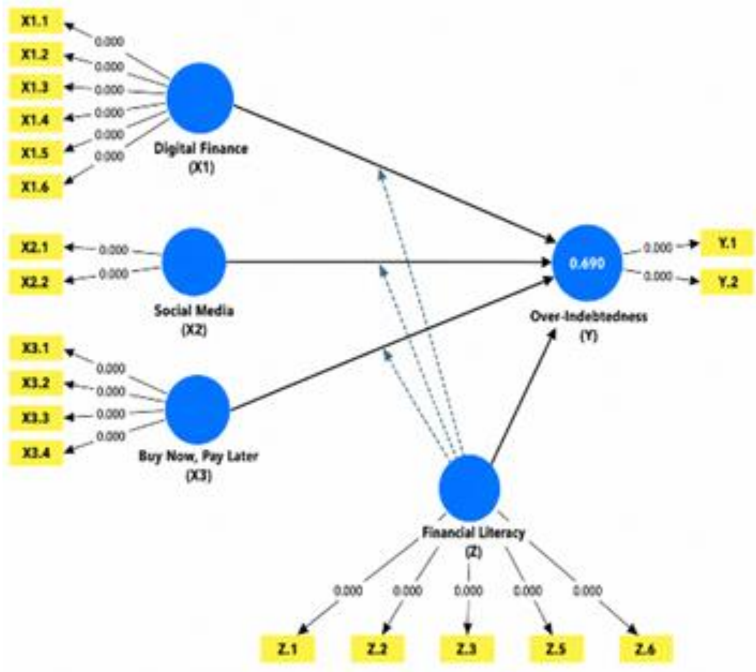

Figure 2. Measurement of the Research Inner Model

Multicollinearity testing was performed to ensure there is no high correlation among independent variables in the structural model, which would indicate potential multicollinearity issues. This analysis involved examining the variance inflation factor (VIF) values for each relationship among variables in the research model.

Table 8. Multicollinearity Test Results

Collinearity Statistic	VIF
Buy Now Pay Later X3 -> Over-Indebtedness Y	2.219
Digital Financial X1 -> Over-Indebtedness Y	3.103
Financial Literacy Z -> Over-Indebtedness Y	2.863

Financial Literacy Z x Buy Now Pay Later X3 -> Over-Indebtedness Y	4.858
Financial Literacy Z x Digital Financial X1 -> Over-Indebtedness Y	7.123
Financial Literacy Z x social media X2 -> Over-Indebtedness Y	4.306
Social media X2 -> Over-Indebtedness Y	1.846

The VIF testing results indicate that all VIF values for independent and moderating variables remain below the established tolerance threshold, confirming that the research model does not experience multicollinearity issues. Consequently, the structural model is deemed appropriate for proceeding to the next phase of testing the relationships among variables in subsequent analyses.

3.2. Discussion

The findings reveal that Digital Financial Services (X1) have a coefficient of 0.383 and a p-value of 0.000, which meets the significance criterion ($p \leq 0.05$). This indicates that digital financial services have a positive and significant impact on over-indebtedness, thus supporting the hypothesis. This outcome aligns with the Technology Acceptance Model (TAM) (Leandro & Botelho, 2022), which suggests that perceptions of ease of use and the advantages of technology motivate individuals to integrate it into their daily lives. In this study, the accessibility of digital financial services facilitates transactions, payments, and access to various financial products. As the use of these services increases, individuals are more likely to engage with financial offerings, potentially leading to over-indebtedness.

In contrast, social media (X2) exhibits a coefficient of 0.090 with a p-value of 0.123, failing to meet the significance criterion ($p \leq 0.05$). Consequently, social media does not significantly influence over-indebtedness, leading to the rejection of the hypothesis. According to Social Comparison Theory (Jiménez-Solomon et al., 2024), individuals often compare themselves with others portrayed on social media. However, the results indicate that this social comparison process is insufficiently strong to drive over-indebtedness among respondents. This suggests that, despite exposure to various lifestyle and consumption-related content on social media, respondents do not necessarily make financial choices that lead to excessive debt.

The analysis further indicates that Buy Now Pay Later (BNPL) does not significantly impact over-indebtedness, with a coefficient of 0.014 and a significance value of 0.842, which exceeds the threshold of 0.05. Therefore, the hypothesis is rejected. From the perspective of Household Finance Theory (Jennifer & Widoatmodjo, 2023), individuals typically assess their income and repayment capacity before making financial decisions. Although BNPL provides payment convenience, individuals engage in rational considerations before excessively utilizing this option. This finding suggests that the use of BNPL does not automatically result in over-indebtedness, as financial decisions are contingent upon individual management and financial capabilities.

The results also demonstrate that Financial Literacy significantly affects over-indebtedness, with a coefficient of 0.374 and a significance value of 0.000, which is less than 0.05. This finding can be understood through Self-Control Theory (Jennifer & Widoatmodjo, 2023), which posits that individuals with higher self-control are generally better able to manage consumption behavior and financial decisions. Financial literacy reflects an individual's capacity to comprehend financial risks, regulate spending, and make informed decisions. Consequently, the level of financial literacy plays a vital role in shaping an individual's financial situation and can help prevent or influence over-indebtedness.

However, the analysis reveals that Financial Literacy does not moderate the relationships between Digital Financial Services ($p = 0.975$), social media ($p = 0.562$), or Buy Now Pay Later ($p = 0.795$) and Over-Indebtedness, as all significance values exceed 0.05. This outcome can be explained by Financial Management Theory (Gitman, 2015), which asserts that an individual's ability to manage finances has a more direct impact on financial conditions than acting as a factor that strengthens or weakens relationships among variables. In this study, while financial literacy has a direct effect on over-indebtedness, it does not significantly enhance or diminish the influences of digital financial services, social media, and BNPL on over-indebtedness. This indicates that decisions regarding excessive debt are influenced not only by financial literacy but also by additional factors such as consumption behavior, financial needs, and characteristics of financial service usage.

4. CONCLUSION

This study investigates the effects of digital financial services, social media, and Buy Now Pay Later (BNPL) on over-indebtedness among Millennials and Generation Z in DKI Jakarta, with financial literacy serving as a variable that may influence the relationships among these factors. The findings indicate that digital financial services significantly contribute to an increase in over-indebtedness. This suggests that the convenience associated with accessing digital services may inadvertently elevate the risk of excessive credit utilization. In contrast, social media and BNPL do not demonstrate a significant impact on over-indebtedness, implying that these factors are not primary motivators of debt behavior among the respondents. While financial literacy shows a positive and significant relationship with over-indebtedness, it does not appear to moderate the relationship between the independent variables and over-indebtedness. This indicates that the financial knowledge possessed by respondents has not effectively controlled their financial behavior, particularly in an environment where digital services are increasingly accessible. This research has several limitations that should be acknowledged. The focus on Millennials and Generation Z in DKI Jakarta restricts the applicability of the results to broader populations or different regions. Additionally, the non-probability sampling method may lead to an uneven representation of respondents. The reliance on self-reported questionnaires also raises the possibility of discrepancies between participants' responses and their actual financial situations. Furthermore, the study does not consider other potential influencing factors, such as self-control, consumer tendencies, psychological pressures, and income levels, which may affect debt behavior. Future research could benefit from expanding the range of variables examined, comparing characteristics across different generations, and employing longitudinal or qualitative methods to track changes in financial behavior over time.

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