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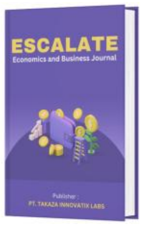

*Financial Literacy*And Leverage With Adoption of Financial Technology As a Moderating Influence on Financial Well-being

Deanissa Setya Ananda[1], Alfiatul Maulida[2], Pristin Prima Sari[3]
Universitas Sarjanawiyata Tamansiswa
Corresponding Author e-mail: deanissaananda@gmail.com, alfiatulmaulida@gmail.com, pristin.primas@ustjogja.ac.id

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Abstract: *This research addresses the critical gap between high digital financial inclusion and low financial literacy in urban communities, which exacerbates the risk of default due to excessive debt (leverage). This study aims to analyze the influence of financial literacy and leverage on financial well-being in Yogyakarta, with a specific focus on the moderating role of financial technology (fintech) adoption. Using a quantitative explanatory approach, this research utilized structured questionnaires distributed to 100 active fintech users in Yogyakarta. Data were analyzed using Partial Least Squares Structural Equation Modeling (PLS-SEM). The findings indicate that financial literacy has a positive and significant effect on financial well-being, while leverage has a negative and significant effect. Furthermore, fintech adoption significantly strengthens the positive impact of financial literacy on financial well-being but fails to moderate the negative impact of leverage. These results suggest that financial well-being is driven by cognitive fund management skills rather than technology adoption alone. The study implies that urban communities must exercise discipline in controlling consumptive digital debt, while regulators such as OJK and Bank Indonesia need to tighten fintech regulations and expand targeted digital literacy education.*

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Introduction

Financial well-being is now highlighted as an essential indicator determining an individual's quality of life globally. The OECD (2023) defines this condition as the ability to meet current financial obligations, a sense of financial security for the future, and complete freedom to make personal financial choices. However, the reality in Indonesia is faced with a high rate of digital loan defaults, reaching over 6.7 million accounts. Data from the Financial Services Authority (OJK) through the 2024 National Survey on Financial Literacy and Inclusion (SNLIK) shows a clear gap: the financial inclusion index has reached 75.02%, but the public's financial literacy rate remains lagging at 65.43%. This imbalance triggers consumptive behavior and excessive debt (leverage) to meet digital lifestyle demands, particularly in the urban ecosystem in the Special Region of Yogyakarta, where the minimum wage is relatively limited.

Although previous theoretical and empirical studies have confirmed the positive role of financial literacy in improving financial well-being (Singh, 2024), numerous research gaps remain. Most previous studies have focused solely on examining direct impacts without incorporating contextual variables within the digital ecosystem. The role of financial technology adoption as a strengthening or weakening factor in this relationship remains rarely explored in developing countries. Furthermore, analysis of personal leverage in relation to individual psychological financial stability is still limited, given that previous literature focuses primarily on examining debt at the corporate level.(Ratnawati et al., 2024)Therefore, this study aims to fill this scientific gap by positioning fintech adoption as a moderating variable in comprehensively capturing the dynamics of financial literacy, leverage, and financial well-being.

Based on the explanation of the problem context above, the research questions raised in this study explicitly include: 1) Does financial literacy affect the financial well-being of the Yogyakarta community?; 2) Does leverage affect the financial well-being of the Yogyakarta community?; 3) Does the adoption of financial technology moderate the effect of financial literacy on financial well-being?; and 4) Does the adoption of financial technology moderate the effect of leverage on financial well-being?. In line with these questions, the specific objectives of this study are to analyze and empirically test the direct effect of financial literacy and leverage on the level of financial well-being, while simultaneously dissecting the intervention role of the adoption of financial technology as a moderating variable.

To provide a systematic visualization of the direction of the causal relationships and interaction effects tested, all hypotheses in this study are integrated into a conceptual framework. The structural modeling flow places financial literacy (X1) and leverage (X2) as predictors or primary independent variables that are directly directed at financial well-being (Y). Meanwhile, the adoption of financial technology (Z) variable is integrated as a single moderating variable. The arrow path of the Z() variable is configured as an interaction effect that points directly to the direct relationship line between (X1) to (Y) and (X2) to (Y) to evaluate whether the existence of digital technology is able to strengthen or weaken the correlation, as illustrated in Figure 1 below.

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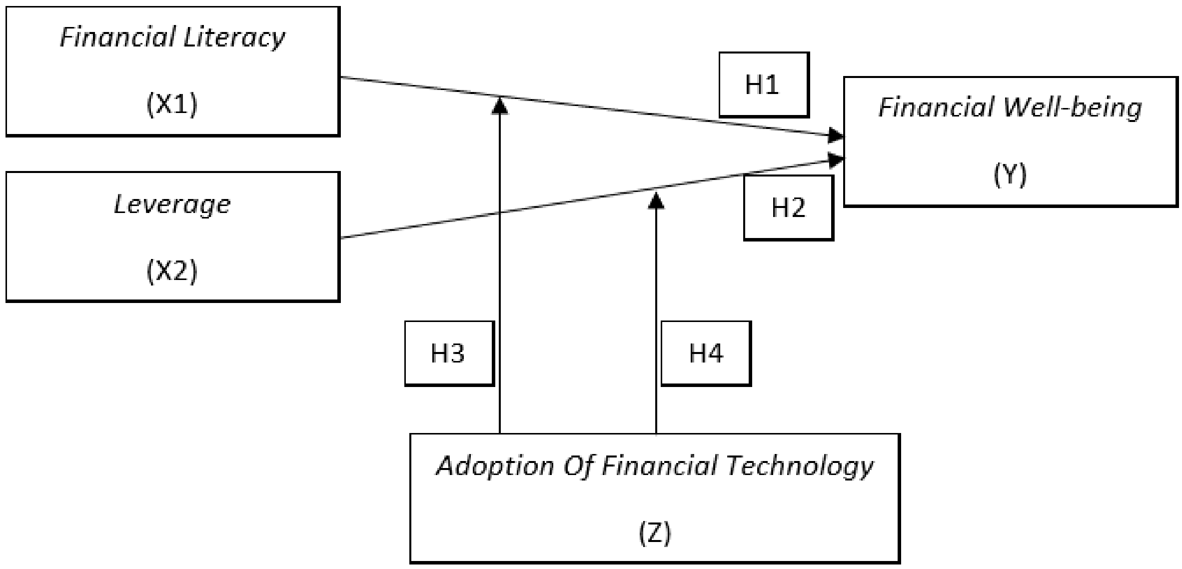

Figure 1. Research Framework

Overall, this modeling is expected to enrich the behavioral finance literature and provide a strong practical contribution for economic regulators such as the Financial Services Authority (OJK) and Bank Indonesia in formulating inclusive financial education programs, while mitigating systemic risks resulting from the explosion of non-performing loans in the digital economy era.

Research methods

This research uses a quantitative approach with an explanatory nature to examine causal relationships between variables measured numerically and processed through statistical procedures. The specific method applied in this study is a survey using a structured online questionnaire instrument (Google Form) distributed through social media such as Instagram and WhatsApp. Operational data measurement uses a Likert scale of 1 to 5 to assess respondents' perceptions of all indicators of financial literacy, leverage, adoption of financial technology, and financial well-being.

The population in this study was people domiciled in the Special Region of Yogyakarta (DIY) who have access to and actively use financial technology (fintech) services. The sampling technique used was non-probability sampling with a purposive sampling method, where the respondent criteria were specifically determined, namely individuals domiciled in Yogyakarta and active users of fintech services such as e-wallets, paylater, or online loans. The minimum sample size collected in the field was determined based on the Ten Times Rule criteria in PLS-SEM modeling, resulting in a sample of 100 respondents who were declared to meet the statistical eligibility criteria.

The data collection technique relies entirely on primary data obtained directly from respondents' answers through online questionnaires, by applying a screening technique at the beginning of the questionnaire to ensure suitability of the sample criteria. Furthermore, the data analysis technique used is Structural Equation Modeling Partial Least Squares (SEM-PLS) with the help of SmartPLS 4 software. The concrete data analysis stages carried out include evaluation of the measurement model or outer model (convergent validity test through loading factors and AVE, discriminant validity test through HTMT criteria, and reliability test through Composite Reliability and Cronbach's Alpha), followed by evaluation of the structural model or inner model (R-Square, Model Fit through SRMR, and Effect Size f2), as well as testing the hypothesis of moderating interaction effects using bootstrapping procedures.

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Results and Discussion

Structural model evaluation was conducted to test model fit, measure predictive power (R2), and assess the significance of causal relationships between variables through a bootstrapping procedure. The model fit index test results showed a Standardized Root Mean Square Residual (SRMR) value of 0.054, which is below the tolerance threshold of 0.08, thus the model was declared empirically good fit. The Coefficient of Determination (R2) value obtained for the financial well-being variable was 0.970. This figure reflects that 97.0% of the variance in the level of financial well-being of urban communities in the research sample was successfully explained by the interaction model constructed, while the remaining 3.0% was influenced by other factors outside the model. A summary of the results of the structural path parameter tests and moderating interaction effects is presented in full in Table 1 below.

***Table 1.*Summary of Structural Model Test Results and Interaction Effects**

Hypothesis	Influence Relationship Path	Path Coefficient	T-Statistics	P-Values	Effect Size (f²)	Conclusion
H1	*Financial Literacy -> Financial Well-being*	0.284	2,995	0.003	0.108	Accepted
H2	*Leverage -> Financial Well-being*	-0.301	3,962	0	0.141	Accepted
H3	Moderation 1 (Financial Literacy x Adoption of Financial Technology) -> Financial Well-being	0.432	4,201	0	0.245	Accepted
H4	Moderation 2 (Leverage x Adoption of Financial Technology) -> Financial Well-being	-0.03	0.363	0.717	0.001	Rejected

1. The Fundamental Role of Cognitive Capabilities in Financial Well-Being
   Based on the data in Table 1, statistical testing proves that financial literacy has a positive and significant influence on the financial well-being of urban communities in Yogyakarta. This finding confirms that the level of financial well-being is not solely determined by the amount of income or the quantity of material capital owned, but rather by an individual's cognitive ability to manage cash flow rationally. Financially savvy urban communities are able to allocate their monthly budget effectively, prioritize meeting basic needs over impulsive desires, and demonstrate risk mitigation awareness when selecting financial products.
   The results of this study are in line with the main pillars of behavioral finance theory and strengthen the findings (Singh et al., 2024)as well as(Sutini & Wiyanto, 2024)which states that cognitive financial understanding is linearly correlated with achieving a sense of financial security in urban areas. Researchers believe that amidst the onslaught of aggressive digital promotions, financial literacy serves as an internal shield that provides individuals with the confidence to make sound long-term financial decisions, thereby creating economic stability free from psychological stress (financial distress).
2. The Destructive Impact of Personal Consumer Debt Dependence
   Conversely, testing the leverage variable indicates a significant negative relationship with financial well-being. Specifically, these findings provide empirical confirmation that the greater an individual's dependence on non-productive debt instruments, the more drastic the decline in their perceived level of financial well-being. This pattern reflects the real-life situation in urban Yogyakarta, where the gap between actual income (relatively limited

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minimum wage) and the pressures of modern lifestyles drives them to turn to paylater services or online loans as an instant solution. Consequently, the mounting burden of monthly principal and interest installments erodes household budget flexibility and limits the ability to build an emergency fund.

Theoretically, these results support the extension of trade-off theory to the personal level. Individual funding structures that exceed safe limits actually undermine their own welfare utility due to high financial costs and the risk of default, which aligns with the warnings of the OJK's PASTI Task Force (2024). Researchers argue that personal leverage in today's digital ecosystem has shifted from a liquidity tool to a primary trigger of chronic financial anxiety due to weak fundamental behavioral control brakes.

3. Technodigital as a Literacy Accelerator and Catalyst for Welfare
   One of the most crucial findings of this study is the evidence that financial technology adoption plays a positive and significant role in moderating the influence of financial literacy on financial well-being. This interaction indicator recorded an effect size (f2) of 0.245, which falls into the moderate category, proving that financial technology adoption acts as a pure moderator.
   This means that the ease of access, time efficiency, and automation features offered by the fintech ecosystem (such as digital fund-tracking apps and automated micro-investments) will transform into powerful welfare-accelerating tools when placed in the hands of individuals with high financial literacy. These findings reinforce the study.(Trisuci, 2023)The integration of digital adaptation and financial intelligence creates a positive synergy in financial management. Researchers believe that digital technology does not automatically create prosperity; it is merely a multiplier, the impact of which depends heavily on the internal characteristics of its users.
4. Limitations of Technology in Intervening in Debt Behavior Failure
   In contrast to previous findings, the fourth hypothesis in this study was officially rejected because the P-value fell well above the significance threshold. This finding reveals a profound structural reality: when an individual's underlying financial problems stem from a pile of unwisely managed consumer debt, simply owning or using even the most sophisticated digital financial apps on their devices will not mitigate its negative impact on well-being.
   These findings align with a study by Mahendra and Khoiruddin (2022), which asserted that financial digitalization alone, without fundamental behavioral improvements, will not be able to eliminate the impact of debt mismanagement. The researchers argue that easy access to instant cash disbursement without internal controls actually risks backfiring, exacerbating the debt trap. The academic contribution of these findings rejects the assumption that digital inclusion automatically reduces financial vulnerability; instead, without strict self-regulation, technology adoption perpetuates destructive debt behavior.

Conclusion

This study successfully provides direct answers to the objectives and problem formulation regarding the determinants of financial well-being in urban communities in Yogyakarta. The main findings indicate that financial literacy has a positive and significant effect on financial well-being, while dependence on consumer debt (leverage) has been shown to have a significant negative impact. Furthermore, the adoption of financial technology has been shown to positively moderate the effect of financial literacy on financial well-being, acting as a pure amplifier that accelerates financial management efficiency for financially savvy individuals. Conversely, the adoption of financial technology lacks moderating capabilities in mitigating the negative impacts of leverage, confirming that the use of sophisticated applications without fundamental controls is unable to intervene or escape an individual from

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the digital debt trap. The theoretical implications of this study expand the application of trade-off theory and behavioral finance at the personal level in the digital ecosystem, while the practical implications require urban communities to improve debt ratio discipline, and encourage regulators such as the Financial Services Authority (OJK) and Bank Indonesia to tighten credit regulations on fintech platforms and expand digital financial education programs equitably.

The limitations of this study lie in the primary data collection, which relied entirely on self-reported online questionnaires, the limited sample size of 100 respondents from urban Yogyakarta, and the general nature of technology adoption modeling without distinguishing the specific characteristics of each fintech platform. Based on these limitations, suggestions for further research include expanding the geographic scope (such as a comparative study of urban and rural communities) and increasing the sample size to improve the model's generalizability. Furthermore, future research is recommended to integrate new behavioral variables such as self-control and materialistic lifestyle, or differentiate specific types of fintech platforms (e.g., commercial digital wallets versus peer-to-peer lending platforms) to capture variance in financial well-being more dynamically.

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