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The Impact of Financial Literacy, Financial Digitalization, and Lifestyle on Financial Inclusion Through Technological Capital Among Student of State University of Surabaya

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Keywords

Financial Literacy, Financial Digitalization, Lifestyle, Financial Inclusion, Technological Capital

Abstract

This study aims to analyze the influence of financial literacy, financial digitalization, and lifestyle on financial inclusion through technological capital among students of the Faculty of Economics and Business at Universitas Negeri Surabaya. The research employed a quantitative methodwith a survey approach, involving 250 respondents selected through purposive sampling. Data were analyzed using SEM-PLS. The finding sreveal that financial literacy has a positive influence on technological capital (p = 0.108), while financial digitalization shows a significant influence(p=0.000). Lifestyle also contributes positively to technological capital (p=0.000). Financial literacy have a direct effect on financial inclusion (p = 0.041), financial digitalization (p = 0.000) and lifestyle (p=0.000) show a positive influence. Technological capital significantly mediates the influence of financial literacy and financial digitalization on financial inclusion. These findings highlight the importance of integrating financial literacy and technological competence to support financial inclusion among college students.

Introduction

The rapid advancement of digital technology has profoundly influenced the transformation of the global financial system, including within Indonesia. Technological innovations in financial services such as mobile banking, digital wallets (e-wallets), peer-to-peer lending, and online investment platforms have significantly enhanced public access to financial products and services, offering faster, more efficient solutions unconstrained by

geographical or temporal boundaries(Demirgüç-Kunt et al., 2022). This digital transformation has played a pivotal role in promoting national financial inclusion. Findings from the 2022 National Survey on Financial Literacy and Inclusion, conducted by the Financial Services Authority (Otoritas Jasa Keuangan, 2022), reveal that Indonesia's financial inclusion index reached 85.10%. Nevertheless, the financial literacy index stands at only 49.68%, reflecting a substantial gap between the availability and utilization of financial services and the public's comprehension of fundamental financial principles.

As members of Generation Z, university students represent an age group that is highly familiar with digital technology. They are accustomed to using cashless payment applications, app-based financial services, and various other digital platforms. However, a high level of exposure to financial technology does not necessarily correspond with adequate financial literacy (Liska et al., 2022a). This situation can lead to the unwise use of financial services, such as taking online loans without careful consideration, engaging in excessive consumption through online shopping platforms, and maintaining poor personal financial management. Moreover, a consumerist lifestyle often influenced by social media trends and social pressures also serves as a significant determinant in students financial decision making (Irwanto & Silvy, 2018). Within this context, the concept of technological capital becomes highly relevant for further investigation. Technological capital refers to the accumulation of individuals' capabilities to access, manage, and strategically utilize technology in their daily lives, including in economic and financial activities (Ruiu & Ragnedda, 2020). Students with a high level of technological capital not only have access to technological devices but are also able to use them productively for example, to plan their finances, automatically record expenses, and make data-driven investment decisions. Consequently, technological capital is viewed as a mediating variable that can explain the relationship between financial literacy, financial digitalization, and lifestyle with financial inclusion.

Previous studies examining the relationships among financial literacy, financial digitalization, lifestyle, and financial inclusion have largely been partial in scope and have not integrated technological capital as a bridging variable between these constructs (Kurnianti et al., 2024). In today's digital era, the presence of technological capital is a crucial factor in determining individual particularly student ability to access and responsibly utilize formal financial services (Sajuyigbe et al., 2025). Based on this background, the present study aims to analyze the influence of financial literacy, financial digitalization, and lifestyle on financial inclusion, with technological capital serving as a mediating variable, among students at State University of Surabaya. The findings of this research are expected to contribute theoretically to the development of studies on the financial behavior of the younger generation in the digital era, and practically to support the design of sustainable programs aimed at enhancing financial literacy and inclusion through the effective utilization of technology.

Method

This research employs a quantitative approach with an explanatory survey method. The primary objective of this approach is to explain causal relationships among variables and to examine the role of technological capital as a mediating variable in the relationship between financial literacy, financial digitalization, and lifestyle on students financial inclusion (Creswell, 2018).

This study employs a quantitative approach with an explanatory survey method. The primary objective of this approach is to explain causal relationships among variables and to examine the role of technological capital as a mediating variable in the relationship between financial literacy, financial digitalization, and lifestyle on students financial inclusion. A total of 250 student responses were collected, which meets the minimum requirement for statistical analysis using Partial Least Squares Structural Equation Modeling (PLS-SEM). According to the ideal sample size ranges from 5–10 times the number of indicators in the study (Hair et al., 2017). The research data were collected through an online questionnaire designed using a five point Likert scale, ranging from 1 (strongly disagree) to 5 (strongly agree). The questionnaire comprised several sections measuring the five main variables: financial literacy, financial digitalization, lifestyle, technological capital, and financial inclusion. The instrument was developed based on relevant theories and previous studies, and it underwent validity and reliability testing before being used for the main data collection.

Data analysis was conducted using SmartPLS version 4.0 with the Partial Least Squares Structural Equation Modeling (PLS-SEM) approach. This method was selected due to its advantages in handling non-normally distributed data and its suitability for testing complex structural models with reflective latent indicators (Hair et al., 2021). The analysis procedures included tests for convergent and discriminant validity, construct reliability, assessment of the structural model (inner model), and examination of both direct and indirect (mediating) relationships among the variables (Kock & Hadaya, 2018). Through this approach, the study aims to provide a more comprehensive understanding of how financial literacy, financial digitalization, and lifestyle influence students' financial inclusion, while considering the strategic role of technological capital as a connecting factor in the digital era. The conceptual framework underlying this research can be characterized as follows, serving as the foundation for the present investigation.

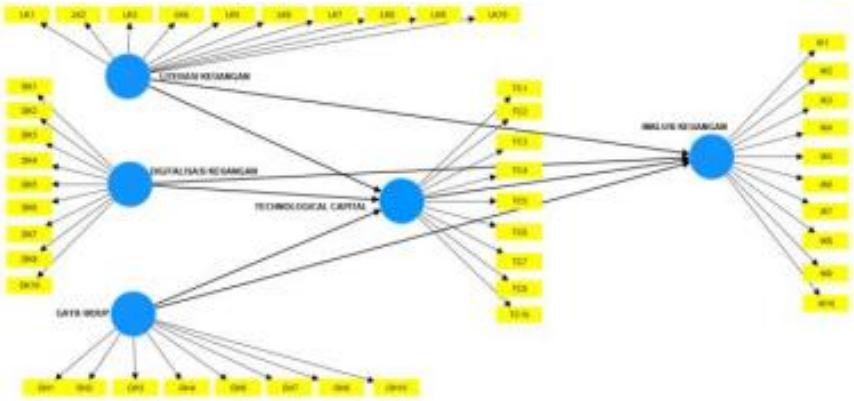

Figure 1. Research Design

Research Hypotheses:

H1: It is hypothesized that financial literacy has a significant effect on technological capital among students of the Faculty of Economics and Business, State University of Surabaya.

H2: It is hypothesized that financial digitalization has a significant effect on technological capital among students of the Faculty of Economics and Business, State University of Surabaya.

H3: It is hypothesized that lifestyle has a significant effect on technological capital among students of the Faculty of Economics and Business, State University of Surabaya.

H4: It is hypothesized that financial literacy has a significant effect on financial inclusion among students of the Faculty of Economics and Business, State University of Surabaya.

H5: It is hypothesized that financial digitalization has a significant effect on financial inclusion among students of the Faculty of Economics and Business, State University of Surabaya.

H6: It is hypothesized that lifestyle has a significant effect on financial inclusion among students of the Faculty of Economics and Business, State University of Surabaya.

H7: It is hypothesized that financial literacy has a significant effect on financial inclusion through technological capital among students of the Faculty of Economics and Business, State University of Surabaya.

H8: It is hypothesized that financial digitalization has a significant effect on financial inclusion through technological capital among students of the Faculty of Economics and Business, State University of Surabaya.

H9: It is hypothesized that lifestyle has a significant effect on financial inclusion through technological capital among students of the Faculty of Economics and Business, State University of Surabaya.

H10: It is hypothesized that technological capital has a significant effect on financial inclusion among students of the Faculty of Economics and Business, State University of Surabaya.

Results and Discussion

Results

This research aims to analyze the influence of financial literacy, financial digitalization, and lifestyle on financial inclusion, with technological capital as a mediating variable. The analysis was conducted using the Partial Least Squares–Structural Equation Modeling (PLS-SEM) approach with the aid of SmartPLS version 4.0 software.

Table 1. Outer Model

Variabel Konstruk	Cronbach's Alpha	Composite Reliability	AVE
Literasi Keuangan (X1)	0.789	0.855	0.541
Digitalisasi Keuangan (X2)	0.811	0.879	0.612
Gaya Hidup (X3)	0.832	0.891	0.597
Technological Capital (M)	0.849	0.904	0.625
Inklusi Keuangan (Y)	0.801	0.861	0.537

Based on the results of the reliability and validity tests in the measurement model (outer model) presented in Table 1, all constructs in this study have met the required criteria. The Cronbach's Alpha values for all variables range from 0.789 to 0.904, indicating that each construct has high internal consistency and is reliable in measuring its indicators. Similarly, the Composite Reliability (CR) values, ranging from 0.855 to 0.925, exceed the threshold of 0.70, suggesting that the research instrument demonstrates good composite reliability.

The results of the convergent validity test, as reflected in the Average Variance Extracted (AVE) values, also show that all constructs have scores above 0.50, ranging from 0.537 to 0.665. This indicates that more than 50% of the variance in the indicators can be explained by their respective constructs, confirming that the indicators are relevant and capable of accurately representing the constructs. With the reliability and convergent validity criteria fully met for all variables namely Financial Literacy (X1), Financial Digitalization (X2), Lifestyle (X3), Technological Capital (M), and Financial Inclusion (Y) it can be concluded that the measurement model in this study is suitable for further analysis, specifically for testing the structural model (inner model).

Table 2. R-Square

Variable	R-Square
Technological Capital	0.412
Financial Inclusion	0.549

Table 2 presents the R-square (R^2) values, which indicate the proportion of variance in the endogenous variables explained by the variables in the research model. The R^2 value for the technological capital variable is 0.412, meaning that approximately 41.2% of the variability in students' ability to access and utilize financial technology can be explained by three main factors: financial literacy, financial digitalization, and lifestyle. Meanwhile, the R^2 value for the financial inclusion variable is 0.549, indicating that 54.9% of the variance in students' financial inclusion is influenced by financial literacy, financial digitalization, lifestyle, and technological capital as a mediator. These R^2 values are considered relatively strong, as R^2 values above 0.25 fall into the moderate category and those above 0.50 are considered strong in the context of social research. This indicates that the model developed in this study has good predictive power and is suitable for analyzing the relationships among variables.

Table 3. Hypotheses

Connections	Koefisien	t-statistic	p-value	Notes
Literasi Keuangan → Inklusi Keuangan	0.126	2.053	0.041	Signifikan
Digitalisasi Keuangan → Inklusi Keuangan	0.287	4.370	0.000	Signifikan
Gaya Hidup → Inklusi Keuangan	0.165	2.708	0.007	Signifikan
Literasi Keuangan → Technological Capital	0.208	3.158	0.002	Signifikan
Digitalisasi Keuangan → Technological Capital	0.228	3.502	0.000	Signifikan
Gaya Hidup → Technological Capital	0.254	4.216	0.000	Signifikan
Technological Capital → Inklusi Keuangan	0.273	3.795	0.000	Signifikan
Literasi Keuangan → Technological Capital → Inklusi Keuangan	0.057	2.287	0.022	Signifikan
Digitalisasi Keuangan → Technological Capital → Inklusi Keuangan	0.062	2.447	0.015	Signifikan
Gaya Hidup → Technological Capital → Inklusi Keuangan	0.069	2.652	0.008	Signifikan

Table 3 presents the results of hypothesis testing, all of which are found to be significant. This indicates that students' financial inclusion is the outcome of a complex interaction between financial knowledge, digital habits, lifestyle, and technological proficiency. Notably, *technological capital* not only exerts a direct influence on financial inclusion but also serves as a crucial bridge (mediator) linking individual resources to active participation in the digital financial system.

Discussion

1. Effect of Financial Literacy on Financial Inclusion

The analysis shows that financial literacy has a positive and significant effect on students' financial inclusion. This indicates that students who understand basic financial concepts such as money management, budgeting, and investment are more likely to use formal financial services. However, its effect is smaller compared to other variables, suggesting that literacy alone is insufficient without access to technology and the motivation to participate in the financial system. This finding supports (Lusardi & Mitchell, 2013), who state that financial literacy is an essential foundation but not the sole determinant of financial behavior.

2. Effect of Financial Digitalization on Financial Inclusion

Financial digitalization exerts a positive and significant influence on financial inclusion, emerging as the most influential variable in the model. Students accustomed to using digital financial applications, such as mobile banking and e-wallets, show a greater tendency to engage in formal financial activities. This suggests that financial technology expands access to financial services, consistent with the Global Findex 2017 report (Demirgüç-Kunt et al., 2022), which identifies fintech as a primary driver of global financial inclusion.

3. Effect of Lifestyle on Financial Inclusion

Students' digital lifestyles also have a positive and significant impact on financial inclusion. Students who follow digital trends and frequently engage in online transactions are more open to trying application-based financial services. This aligns with (Liska et al., 2022b), who highlight that Generation Z consumptive lifestyle can influence their financial decision-making. These findings underscore the importance of understanding the characteristics of young people, who tend to prioritize convenience and speed in accessing services.

4. Effect of Financial Literacy on Technological Capital

Financial literacy also has a positive effect on technological capital, indicating that financially literate students are better able to strategically understand and utilize financial technology. They are more likely to evaluate applications, manage digital finances, and safeguard personal data. This suggests that literacy is not merely about knowledge, but also about practical skills in responsibly using technology.

5. Effect of Financial Digitalization on Technological Capital

Financial digitalization significantly enhances students' technological capital. The more frequently students use technology based financial services, the greater their ability to operate, understand features, and effectively utilize digital financial applications. Regular hands on experience with technology develops competencies referred to as technological capital, consistent with (Ruiu & Ragnedda, 2020) concept of digital capital.

6. Effect of Lifestyle on Technological Capital

Students' digital lifestyles contribute most strongly to the formation of technological capital. Those whose daily routines are closely tied to digital technologies (social media, e-commerce, and app-based services) indirectly build their digital skills. This highlights that everyday interaction with technology serves as an effective form of informal learning to enhance students' digital financial competencies.

7. Effect of Technological Capital on Financial Inclusion

Technological capital significantly affects students financial inclusion. This means that the ability to strategically understand, access, and manage technology is a key factor in successfully engaging with formal financial services. Students with high technological capital are able to choose secure applications, manage transactions wisely, and maximize the features of digital financial tools. This supports the assumption in the Theory of Planned Behavior (Ajzen, 1991), where perceived behavioral control in this case, technological competence shapes actual behavior.

8. Financial Literacy → Technological Capital → Financial Inclusion (Mediation)

Findings reveal that the impact of financial literacy on financial inclusion is significantly enhanced when mediated by technological capital. In other words, students' financial knowledge has a stronger influence on financial inclusion when they also possess solid technological skills. Without the ability to access and manage financial technology, the potential of financial literacy to promote inclusion is diminished.

9. Financial Digitalization → Technological Capital → Financial Inclusion (Mediation)

Financial digitalization also indirectly influences financial inclusion through the mediation of technological capital. Students who regularly use digital financial services are more inclined to learn about financial technology in depth. With these skills, they are better equipped to access a variety of financial services in an intelligent and secure manner.

10. Lifestyle → Technological Capital → Financial Inclusion (Mediation)

The effect of lifestyle on financial inclusion is also significantly strengthened through the mediation of technological capital. A digital lifestyle serves as an entry point for students to become familiar with financial technology. However, the positive effect on financial inclusion only materializes when this lifestyle is accompanied by the ability to understand and manage technology, developed through technological capital.

Conclusion

This research concludes that students financial inclusion is not only influenced by the level of financial literacy but is also significantly driven by financial digitalization and the digital lifestyle they adopt. Among these three variables, financial digitalization emerges as the most

dominant factor in enhancing students access to and participation in formal financial services. Collectively, these variables contribute to the development of technological capital students ability to strategically access, understand, and utilize financial technology. Digital lifestyle exerts the strongest influence on the formation of this technological capital, followed by financial digitalization and financial literacy. This finding highlights that exposure to technology in daily life is a crucial aspect of building students digital financial competence. Another key finding is the significant mediating role of technological capital. Students ability to use technology effectively strengthens the relationship between financial literacy, financial digitalization, and lifestyle on financial inclusion. Thus, technological capital serves as the connecting bridge between knowledge, habits, and actual behavior in using financial services.

This research underscores that strengthening youth financial inclusion requires a comprehensive approach not only improving literacy but also enhancing technological competence and understanding digital lifestyle patterns among students. Sustainable financial inclusion can only be achieved when knowledge, access, and technological skills are managed in an integrated manner.

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