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The influence of digital financial literacy and financial technology on managerial performance in Vapestores

Erlangga Defry Sutardjo
Corresponding author:
erlanggadsutardjo@gmail.com
Sam Ratulangi University
Indonesia

Jullie J. Sondakh
Sam Ratulangi University
Indonesia

Djeini Maradesa
Sam Ratulangi University
Indonesia

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ABSTRACT

This study investigates whether digital financial literacy and financial technology improve managerial performance in vapestore businesses. The rapid expansion of the vapestore industry has increased competition and required managers to enhance financial management capabilities and adopt digital financial tools. However, many vapestore managers still face limitations in digital financial literacy and financial technology utilization, which may hinder managerial effectiveness. This study uses a quantitative approach with data collected from 40 vapestore managers in Manado, Tomohon, Mandolang, and Airmadidi. Data were analyzed using multiple linear regression with SPSS 26. The findings reveal that digital financial literacy has a positive and significant effect on managerial performance, as indicated by a regression coefficient of 0.591 and a significance value of 0.000. Financial technology also has a positive and significant effect, with a regression coefficient of 0.492 and a significance value of 0.000. Furthermore, the adjusted coefficient of determination shows that 88.4% of managerial performance is explained by digital financial literacy and financial technology, while 11.6% is explained by other factors outside the model. These results indicate that strengthening digital financial literacy and optimizing financial technology utilization are important in improving managerial performance in vapestore businesses.

Keywords: digital financial literacy; financial technology; managerial performance; vapestore
JEL Classification: G53; G23; M10

1. Introduction

The rapid development of digital technology has transformed the way businesses manage financial activities and make managerial decisions. For small and medium-sized enterprises (SMEs), the integration of digital financial systems has become increasingly important as businesses are required to adapt to changing market conditions and intensifying competition. The use of digital financial tools, such as mobile banking, e-wallets, QRIS, and fintech-based financing platforms, enables business actors to conduct transactions more efficiently, monitor cash flow in real time, and improve the quality of financial decision-making. In this context, digital financial literacy and financial technology have become important factors that may support managerial performance in business operations (Yudha et al., 2020; Jayanti and Karnowati, 2023).

The vapestore industry in Indonesia has experienced rapid growth since around 2015, driven by increasing public interest in electronic cigarettes as an alternative to conventional tobacco products. This development has encouraged the emergence of many vapestore businesses and intensified competition among business actors. As a result, vapestore managers are not only required to maintain product quality and customer relationships, but also to improve managerial effectiveness in planning, financial control, and decision-making. However, many vapestore businesses still rely on conventional financial practices, such as manual bookkeeping and cash-based transactions, which may reduce efficiency and hinder managerial performance. Under these conditions, the ability to understand digital finance and utilize financial technology becomes increasingly relevant for supporting business management and maintaining competitiveness.

It is also worth noting that vape products are subject to specific excise-tax and trade regulation in Indonesia (regulated as Hasil Pengolahan Tembakau Lainnya/HPTL since 2018), and that the health and public-policy debate surrounding electronic cigarettes remains active both domestically and internationally. While the present study focuses exclusively on managerial performance rather than health outcomes, this regulatory and public-health context is acknowledged here to situate the managerial challenges investigated in this paper, particularly the excise-compliance and record-keeping burden that digital financial tools may help vapestore managers address.

Digital financial literacy plays an important role in helping managers understand digital financial services, evaluate financial risks, and make better financial decisions. Likewise, financial technology provides practical support through digital payments, financial applications, and technology-based financial services that improve efficiency and facilitate business management. Managers who are able to understand digital financial information and utilize fintech services are expected to manage their businesses more effectively, particularly in controlling finances, evaluating business performance, and making strategic decisions (Sahamony, 2022; Yudha et al., 2020).

Previous studies have shown that financial literacy and financial technology are associated with better business and financial performance. Putri et al. (2022) found that financial literacy and financial technology positively affect the financial performance of young entrepreneurs. Similarly, Arifuddin et al. (2023) reported that financial literacy and financial technology contribute to improving SME performance, while Sari and Kurniawan (2024) highlighted the role of financial literacy, managerial capability, and fintech payment systems in strengthening business performance. Despite these findings, most prior studies have focused on financial performance or SME performance in general, while limited attention has been given to managerial performance as the main outcome variable, particularly in the context of vapestore businesses.

This study addresses that gap by examining the influence of digital financial literacy and financial technology on managerial performance in vapestore businesses. By focusing on vapestore managers in Manado, Tomohon, Mandolang, and Airmadidi, this study seeks to provide empirical evidence on whether digital financial literacy and financial technology contribute to improving managerial performance. The findings are expected to enrich the literature on digital financial behavior and managerial performance, while also offering practical insights for vapestore business owners and other SMEs in strengthening their competitiveness in the digital economy

2. Literature review

Digital financial literacy and managerial performance

Digital financial literacy refers to an individual's understanding and ability to manage financial activities through digital technology. It includes knowledge of digital financial services, online transactions, financial applications, and awareness of risks and privacy issues in the digital environment. In the context of business management, digital financial literacy is important because managers are increasingly required to adapt to digital systems for financial planning, transaction recording, cash flow monitoring, and decision-making. Managers with stronger digital financial literacy are more capable of understanding financial information, utilizing digital financial tools, and making better financial decisions in business operations (Sahamony, 2022).

From a managerial perspective, digital financial literacy is not only related to financial knowledge but also to the ability of managers to plan, control, evaluate, and make strategic decisions. Managers who are digitally financially literate are more likely to manage business finances effectively, analyze financial conditions accurately, and respond to market changes in a timely manner. In line with the behavioral accounting perspective, managerial decisions are influenced by an individual's understanding and use of financial information in decision-making processes (Supriyono, 2018). Therefore, digital financial literacy is theoretically expected to improve managerial performance.

Previous studies provide empirical support for this relationship. Putri et al. (2022) found that financial literacy and financial technology positively affect business performance. Arifuddin et al. (2023) also reported that financial literacy contributes to improving the performance of SMEs. Similarly, Sari & Kurniawan (2024) showed that financial literacy plays an important role in strengthening business performance, while Hamidah (2024) emphasized that financial literacy can improve business performance through the support of financial technology. These findings indicate that better financial understanding enables business actors to improve financial management, strengthen operational control, and enhance business performance. Based on this theoretical and empirical foundation, the following hypothesis is proposed:

H1: Digital financial literacy has an effect on managerial performance.

Financial technology and managerial performance

Financial technology, commonly referred to as fintech, refers to the use of technology in financial systems to create products, services, and innovations that improve efficiency, accessibility, and convenience in financial activities. Fintech has become increasingly important in the digital era because it enables faster and more efficient financial services, including payments, financing, transfers, and financial record-keeping. According to Yudha et al. (2020), financial technology offers various benefits, such as saving time, reducing costs, and simplifying financial transactions. In addition, the development of fintech has become an important part of financial services innovation, particularly for businesses that need efficient and flexible access to financial systems (Yudha et al., 2020; Kusuma et al., 2020).

In the context of business management, financial technology supports managerial activities by facilitating digital transactions, improving access to financial information, and enhancing the efficiency of financial administration. Applications such as QRIS, e-wallets, digital payment systems, and financial recording applications enable business managers to monitor cash flow in real time, reduce manual recording errors, and simplify financial transactions. As a result, managers are better able to control business finances, evaluate operational performance, and make more accurate and timely decisions. Managerial performance itself refers to the ability of managers to achieve organizational goals through effective and efficient resource management, including planning, controlling, evaluating, and decision-making activities that support business operations (Rasulong et al., 2025; Kewo, 2024). Therefore, the use of financial technology is expected to improve managerial performance by supporting more effective planning, control, evaluation, and decision-making processes.

Empirical studies also support this expectation. Putri et al. (2022) found that financial technology positively contributes to business performance and financial management. Arifuddin et al. (2023) similarly reported that financial technology improves the performance of SMEs by supporting financial activities and operational efficiency. Khusnah et al. (2023) highlighted the role of financial technology in strengthening financial inclusion and financial behavior, while Pandak and Nugroho (2023) found that financial technology and managerial capability contribute to improving SME performance. Astari and Candraningrat (2022) also showed that fintech plays an important role in improving financial performance, particularly when supported by financial literacy. These findings indicate that the use of financial technology can strengthen business management and improve managerial effectiveness. Based on this theoretical and empirical foundation, the following hypothesis is proposed:

H2: Financial technology has an effect on managerial performance.

Conceptual framework

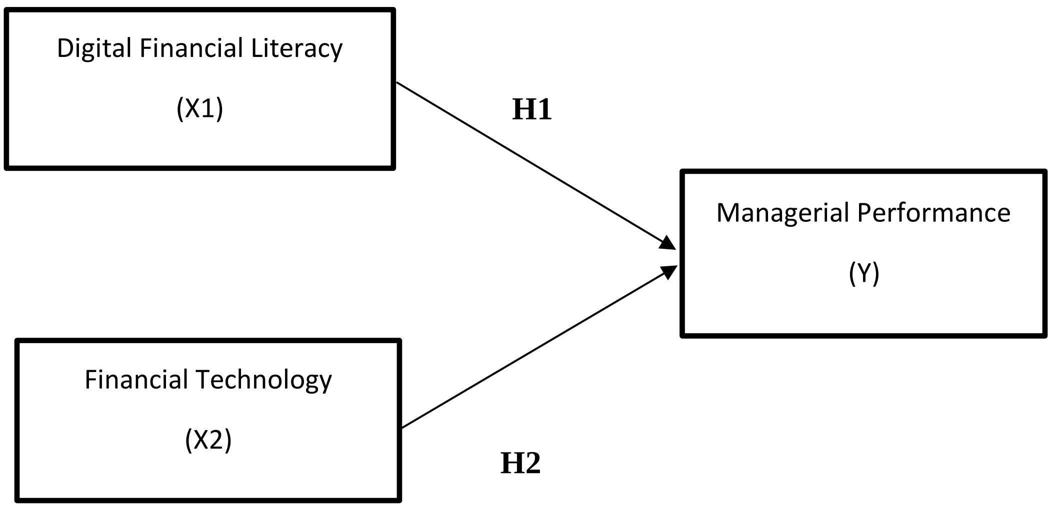

Figure 1. Conceptual framework

3. Research method

This study employed a quantitative approach to examine the effect of digital financial literacy and financial technology on managerial performance in vapestore businesses. Quantitative research is used to examine relationships between variables through numerical data and statistical analysis (Sugiyono, 2013). The study was conducted among vapestore managers in Manado, Tomohon, Mandolang, and Airmadidi. The population consisted of 40 vapestore managers, all of whom were selected as respondents using a total sampling technique. These four sub-districts were selected because, together, they contain the researchers' accessible and verifiable population frame of formally operating vapestores in the Manado metropolitan area, rather than the wider North Sulawesi province, for which no complete business registry was available at the time of the study.

With N = 40 and two predictors, the achieved sample is smaller than common minimum sample-size guidelines for multiple regression (e.g., Green's rule of thumb of $N \geq 50 + 8m$ for testing individual predictors, suggesting a minimum of approximately 66 respondents for this design). Because the population itself is bounded at 40 managers, this constraint could not be resolved by drawing a larger sample within the same frame; the implications of this limitation for the stability of the estimated coefficients and the generalizability of the findings are discussed in the Limitations

Primary data were collected through questionnaires distributed directly to the respondents. The questionnaire items were measured using a five-point Likert scale and were developed based on the indicators of each research variable. Digital financial literacy was measured through indicators related to conceptual understanding, data security, digital financial decision-making, digital risk understanding, and trust in fintech. Financial technology was measured using indicators such as fintech use for transactions, fintech-based financing, time efficiency, business system integration, and trust in fintech services. Managerial performance was measured through indicators of business planning, financial control, periodic evaluation, use of management applications, and decision-making.

Both independent variables and the dependent variable were measured through the same questionnaire completed by a single respondent (the vapestore manager) per business. This single-informant, same-source design creates a risk of common method bias (CMB), which may partly explain the unusually high explanatory power reported

Before hypothesis testing, the research instrument was examined using validity and reliability tests. The regression model was then evaluated through classical assumption tests, including normality, multicollinearity, and heteroscedasticity tests. Hypothesis testing was conducted using multiple linear regression analysis with SPSS version 26. The regression model used in this study is formulated as follows:

$$Y = \alpha + \beta_1 X_1 + \beta_2 X_2 + e$$

Where Y represents managerial performance, X_1 represents digital financial literacy, X_2 represents financial technology, α is the constant, β_1 and β_2 are the regression coefficients, and e is the error term. Hypothesis testing was carried out using the t-test to examine the partial effect of each independent variable on managerial performance, while the coefficient of determination (R^2) was used to assess the explanatory power of the model.

Table 1. Variables, measurement, and scale

Variables	Measurement	Scale
Digital Financial Literacy (X1)	Conceptual Understanding, Data Security, Digital Financial Decision-Making, Digital Risk Understanding, Trust in Fintech	Likert
Financial Technology (X2)	Fintech Use for Transactions, Fintech Financing, Time Efficiency, Business System Integration, Trust in Fintech Services	Likert
Managerial Performance (Y)	Business Planning, Financial Control, Periodic Evaluation, Use of Management Applications, Decision-Making	Likert

4. Result and discussion

Instrument testing

Table 2. Descriptive statistics of research variables

Variable	N	Mean	Std. Deviation	Minimum	Maximum
Digital Financial Literacy (X1)	40	2.94	1.20	1	5
Financial Technology (X2)	40	3.06	1.13	1	5
Managerial Performance (Y)	40	2.99	1.24	1	5

Table 2 presents the descriptive statistics of the research variables based on responses from 40 vapestore managers. Digital financial literacy has a mean score of 2.94, financial technology has a mean score of 3.06, and managerial performance has a mean score of 2.99. These results indicate that respondents generally exhibit a moderate level of digital financial literacy, financial technology utilization, and managerial performance.

Table 3. Validity Test and Reliability Test

Variable	Item	r-count	r-table	Sig	Result
Digital Financial Literacy (X1)	LKD1.1	0.784	0.312	0.000	Valid
	LKD2.1	0.786	0.312	0.000	Valid
	LKD3.1	0.731	0.312	0.000	Valid
	LKD4.1	0.758	0.312	0.000	Valid
	LKD5.1	0.766	0.312	0.000	Valid
	Reliability	α = 0.861	≥ 0.70	—	Reliable
Financial Technology (X2)	FT1.1	0.675	0.312	0.000	Valid
	FT2.1	0.723	0.312	0.000	Valid
	FT3.1	0.799	0.312	0.000	Valid
	FT4.1	0.774	0.312	0.000	Valid
	FT5.1	0.696	0.312	0.000	Valid
	Reliability	α = 0.841	≥ 0.70	—	Reliable
Managerial Performance (Y)	KM1.1	0.844	0.312	0.000	Valid
	KM2.1	0.804	0.312	0.000	Valid
	KM3.1	0.691	0.312	0.000	Valid
	KM4.1	0.835	0.312	0.000	Valid
	KM5.1	0.822	0.312	0.000	Valid
	Reliability	α = 0.878	≥ 0.70	—	Reliable

All questionnaire items have r-count values greater than the r-table value of 0.312 and significance values below 0.05, indicating that all items are valid. The reliability test results show that all variables have Cronbach's Alpha values above 0.70, meaning that the research instrument is reliable and internally consistent.

Normality Test

Table 4. Classical Assumption Test Results (Normality and Multicollinearity)

Variable	Kolmogorov-Smirnov			
	Statistic	p	Tolerance	VIF
Digital Financial Literacy (X1)	0.141	0.054	0.328	3.047
Financial Technology (X2)	0.133	0.074	0.328	3.047
Managerial Performance (Y)	0.130	0.087	-	-

All Kolmogorov–Smirnov p-values (0.054–0.087) are above the conventional 0.05 threshold but close enough to it that the normality assumption should be regarded as only marginally, rather than unambiguously, satisfied. Because the Kolmogorov–Smirnov test has relatively low power at N = 40, the Shapiro–Wilk statistics in Table 5 provide a more appropriate check for this sample size; taken together, the two tests support proceeding with parametric regression while acknowledging that the normality assumption is borderline rather than strongly confirmed. The tolerance values for X1 and X2 are above 0.10 and the VIF values are below 10, indicating that the regression model does not suffer from multicollinearity.

Based on the normality test reported in the study, the data were considered appropriate for regression analysis.

Heteroscedasticity Test

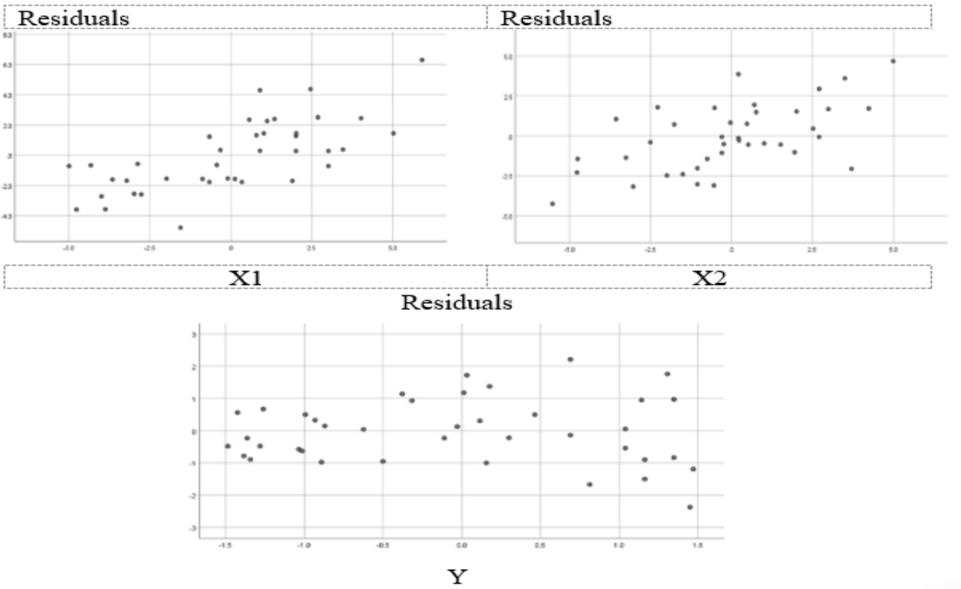

Figure 1. Heteroscedasticity Test Results

The heteroscedasticity test indicates that the residuals are randomly scattered and do not form a particular pattern, suggesting that heteroscedasticity is not present in the regression model.

Hypothesis Testing

Table 5. Multiple Linear Regression Results

Predictor	Estimate	Std. Error	t-value	Sig.	Stand. Estimate
Intercept	-1.266	1.002	-1.264	0.214	
Digital Financial Literacy (X1)	0.591	0.101	5.865	0.000	0.559
Financial Technology (X2)	0.492	0.109	4.498	0.000	0.429

The regression equation is formulated as follows:

$$Y = -1.266 + 0.591X_1 + 0.492X_2 + e$$

The regression results indicate that both digital financial literacy and financial technology have positive and significant effects on managerial performance. Digital financial literacy has a regression coefficient of 0.591 (p = 0.000), while financial technology has a regression coefficient of 0.492 (p = 0.000), suggesting that improvements in both variables are associated with higher managerial performance.

Table 6. Partial t-Test Results

Hypothesis	Relationship	t	p	Decision
H1	Digital Financial Literacy → Managerial Performance	5.865	0.000	Supported
H2	Financial Technology → Managerial Performance	4.498	0.000	Supported

The t-test results show that digital financial literacy significantly affects managerial performance, with a t-value of 5.865 and a significance value of 0.000. Financial technology also significantly affects managerial performance, with a t-value of 4.498 and a significance value of 0.000. Thus, both hypotheses are supported.

Table 7. Coefficient of Determination

Model	R	R^2	Adjusted R^2
1	0.943	0.890	0.884

Table 7 shows that the adjusted R^2 value is 0.884, indicating that 88.4% of the variance in managerial performance is explained by digital financial literacy and financial technology, while the remaining 11.6% is attributable to other factors outside the model.

Discussion

The effect of digital financial literacy on managerial performance

The findings indicate that digital financial literacy has a positive and significant effect on managerial performance. This is evidenced by the regression coefficient of 0.591, the t-value of 5.865, and the significance value of 0.000. These results suggest that higher levels of digital financial literacy among vapestore managers are associated with better managerial performance. In practice, managers who understand digital financial concepts, data security, digital financial risks, and the use of financial information for decision-making are more capable of planning, controlling, evaluating, and managing their businesses effectively.

This finding supports the behavioral accounting perspective, which emphasizes that managerial decisions are influenced by knowledge and understanding of financial information. Managers with stronger digital financial literacy are better able to interpret financial data and utilize digital financial systems in a productive manner. As a result, they can improve financial control, make more accurate business decisions, and respond more strategically to changes in the business environment. In the vapestore context, digital financial literacy helps managers monitor cash flow more effectively, improve financial decision-making, and support overall managerial performance.

This result is also consistent with previous studies showing that financial literacy contributes positively to business management and performance (Putri et al., 2022; Arifuddin et al., 2023; Hamidah, 2024). Unlike these general-SME studies, however, the present findings suggest that the practical value of digital financial literacy in the vape retail context may be amplified by the sector's regulatory and excise-compliance demands, an interpretation that future qualitative or comparative work could test directly.

These studies suggest that stronger financial understanding allows business owners and managers to improve financial management, enhance operational efficiency, and strengthen managerial effectiveness. Therefore, the present study confirms that digital financial literacy is an important factor in improving managerial performance in vapestore businesses.

The effect of financial technology on managerial performance

The findings also show that financial technology has a positive and significant effect on managerial performance. This is indicated by the regression coefficient of 0.492, the t-value of 4.498, and the significance value of 0.000. This means that greater use of financial technology in vapestore businesses is associated with better managerial performance. In other words, fintech adoption contributes positively to business management effectiveness.

From a managerial perspective, financial technology provides tools such as QRIS, digital payment systems, fintech-based financing, and digital financial records that support business operations. These services enable managers to access financial information more quickly and accurately, reduce administrative inefficiencies, simplify transaction processes, and improve cash flow monitoring. Consequently, managers are able to make more rational, timely, and data-driven decisions, which in turn strengthens managerial performance.

This result also aligns with previous studies indicating that financial technology improves business performance and financial management. For vapestore businesses, the adoption of fintech is especially relevant because it helps managers adapt to changing customer payment preferences, improve operational efficiency, and strengthen financial control. Thus, financial technology should be viewed not only as a transaction tool, but also as a managerial support system that enhances planning, control, and decision-making quality within the business.

5. Conclusion

This study shows that digital financial literacy and financial technology each have a positive and significant effect on managerial performance in vape retail businesses, jointly explaining 88.4% of its variance (Adjusted $R^2 = 0.884$), $F(2, 37) = 149.68$, $p < .001$. Theoretically, the findings extend behavioral finance and technology-adoption perspectives to a novel, excise-regulated retail context by treating digital financial literacy as a determinant of managerial decision quality and financial technology as a managerial-support mechanism, and they point to sector-specific regulatory demands, such as excise-tax compliance, as a relevant boundary condition for future models. Practically, vapestore owners and industry associations such as APVI can act on these results through targeted training on QRIS/e-wallet reconciliation aligned with excise-taxed sales reporting, fintech-based inventory-financing tools suited to regulated retail products, and wider use of digital financial-recording applications in place of manual bookkeeping.

These conclusions should be read alongside several limitations. The sample ($N = 40$), though a full census of vapestore managers in the four study sub-districts, is small relative to conventional regression sample-size guidelines, and both predictors and the outcome were collected from a single self-reported questionnaire per business, creating a risk of common method bias that plausibly contributes to the unusually high Adjusted R^2; the cross-sectional design further precludes causal inference, and the two predictors were modeled as independent, additive effects without testing their potential interaction. Future research should therefore pursue larger, multi-region samples, incorporate objective or multi-informant performance measures, apply longitudinal or quasi-experimental designs, and explicitly test the interaction between digital financial literacy and financial technology.

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