

Analysis of Efficiency and Effectiveness of Operational Cost Control on Financial Performance through the Implementation of Financial Technology

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ABSTRACT

The rapid development of Financial Technology (FinTech) has significantly transformed the global financial system, including in Indonesia. One of its innovations is the Shopee PayLater service, which utilizes digital technology to accelerate transactions and provide easier access to consumer financing. This research applies a quantitative approach using primary data obtained from questionnaires distributed to employees in the operational and finance departments, as well as secondary data from company financial reports and documentation. Data were analyzed using multiple regression and mediation testing through the Structural Equation Modeling (SEM) approach. The previous research results indicate that the efficiency and effectiveness of operational cost control have a positive and significant effect on financial performance. The implementation of Financial Technology strengthens this relationship by improving transaction speed, reducing manual costs, and increasing financial reporting accuracy. Therefore, FinTech acts as a mediating variable that enhances the impact of operational efficiency on the company's financial performance. This study provides practical implications for FinTech companies to continuously enhance operational digitalization systems and optimize cost control to achieve sustainable profitability.

INTRODUCTION

Financial Technology (Fintech) plays an important role in increasing operational efficiency and providing convenience in financial services, which in turn has a positive impact on financial performance (Dedyanti, 2025). The implementation of fintech such as digital payment, e-money, e-accounting, e-banking and automation system makes it possible to reduce optional costs, speed up the transaction process and increase transparency. Financial Technology (Fintech) has significantly changed the business landscape, especially in the financial sector.

In the context of the company, the efficiency and effectiveness of operational cost control is an important factor to maintain optimal financial performance. Ineffective cost control can cause waste of resources, increased risk of bad credit, and decreased profitability.

The development of financial technology (fintech) has changed the way people and financial institutions conduct transactions, manage funds, and provide services. Services that previously required a physical branch office and a lot of manpower, can now be done digitally through mobile applications and online platforms.

The application of fintech such as digital payment systems, accounting automation, big data analytics, to digital lending is seen to be able to increase cost efficiency through manual labor reduction, accelerate data-based decisions, minimize administrative errors, and expand access to low-cost services. For fintech companies and financial institutions that adopt fintech, controlling operational costs is one of the keys to maintaining healthy financial performance. Technology implementation can reduce the need for physical branches, reduce administrative and transaction costs and automate processes that were previously manual.

A number of studies show that fintech adoption is related to a decrease in the cost-to-income ratio (BOPO/CIR) and an increase in the profitability of financial institutions. However, on the other hand, fintech also causes new costs, such as Technology infrastructure investment (server, cloud, cyber security), Application development and system maintenance costs, User acquisition and retention costs (promotion, discount, cashback).

Therefore, it is interesting to analyze the extent to which the efficiency and effectiveness of operational cost control really contribute to the improvement of financial performance of fintech companies and financial institutions that utilize fintech.

The problems that are bumped in the analysis of efficiency and effectiveness of operational cost control on financial performance through the implementation of Financial Technology affects the efficiency of operational cost control. The implementation of the efficiency and effectiveness of operational cost control on financial performance through the implementation of Financial Technology aims to analyze the effect of the implementation of Financial Technology on the efficiency of operational cost control, analyze the effect of the implementation of Financial Technology on the effectiveness of operational cost control and analyze the impact of fund efficiency, the effectiveness of operational

cost control through the implementation of Financial Technology on the financial performance.

This research is expected to provide theoretical benefits for the development of financial management science as well as practical benefits for fintech companies in strengthening cost control systems and improving financial performance.

LITERATURE REVIEW

Operational Cost Control Efficiency

Efficiency is the company's ability to use resources optimally to produce output at the lowest possible cost. The operational cost efficiency means the ability to reduce system costs, commissions, and technology infrastructure maintenance without reducing service quality. Efficiency is measured through the Operating Expense Ratio (OER) the smaller the ratio, the more efficient the company. Other indicators include BOPO, labor efficiency ratio, and comparison of technology costs to total assets.

Effectiveness of Operational Cost Control

According to Anthony and Govindarajan (2020), effectiveness is the level of success of a company in achieving financial goals such as lowering costs, increasing profits, and controlling cash flow. Effectiveness can be measured through the appropriateness of cost with budget, timeliness of operational activities, and achievement of performance targets. In fintech companies the effectiveness of cost control is greatly influenced by the automation of the financial system, which allows real-time cost monitoring and accelerates evaluation and reporting.

Basic Concept of Financial Technology

Financial Technology (Fintech) is a technological innovation that increases efficiency, effectiveness, and financial inclusion. According to Amer, Barberis, and Buckley (2022), fintech is the application of digital technology in financial services to encourage innovation and expand financial access. OJK (2023) defines fintech as technological innovation in the financial services sector that produces new products, services, or business models and contributes to national financial inclusion. Its services include digital payments, online loans, digital investments, insurtech, to digital credit systems such as Buy Now Pay Later (BNPL).

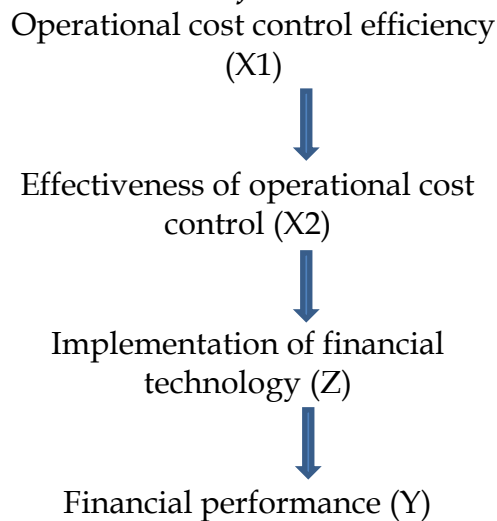
Fintech began to grow rapidly in Indonesia since 2015 with the presence of GoPay, OVO, DANA, and Kredivo. Growth is getting faster after regulations such as POJK 77/2016 are published. In the period of 2020–2024, digital transactions soared due to the pandemic, with a transaction value of more than Rp 5,400 trillion in 2023 (BI, 2024). BNPL is one of the fastest growing sub-sectors because it offers fast unsecured credit access through the application

Financial Performance

Financial performance describes the company's ability to generate profit. According to Brigham & Houston (2019), this performance is assessed through

the main ratios such as ROA (profit from assets), ROE (profit from own capital), and NPM (cost efficiency to income). In fintech financial performance is also affected by technology cost efficiency and credit costs that affect long-term profitability.

Conceptual Framework Of Research



Hypothesis

H1: Operational Cost Control Efficiency Has a Positive Effect on Financial Performance

H2: The Effectiveness of Operational Cost Control has a Positive Impact on Financial Performance

H3: The Implementation of Financial Technology Has a Positive Effect on Financial Performance

METHODOLOGY

This research uses a quantitative approach with descriptive and verifiative analysis methods. Quantitative approach is used to measure the influence between efficiency variables and the effectiveness of operational cost control on financial performance through the implementation of Finance Technology. While a qualitative approach is used to strengthen the results with a descriptive explanation based on literature and annual reports (OJK, and Bank Indonesia).

The population in this study is all optional financial reports, transaction activity data related to the cost efficiency and financial performance of e-commerce companies in Indonesia in the period 2020 - 2024. Samples are taken using the purposive sampling technique, which is sample selection based on certain criteria.

The type of data and data sources in this study consist of quantitative data in the form of financial statements, operational costs and the financial ratios and qualitative data in the form of annual reports, previous research results and official publications from OJK, Bank Indonesia, and the Indonesian Fintech Association (AFTECH). The data source used in this study.

The data analysis method in this study consists of; Descriptive Test, Classical Assumption Test, Multiple Linear Regression Test or SEM (Structural

Equation Modeling), and Sobel Test. The Definition of Operational and Its Measurement in this research is as follows:

Table 1. The Definition of Operational and Its Measurement

Variable	Operational Definition	Indicators	Scale
Operational Cost Efficiency Control (X1)	The level of the company's ability to save the use of operational resource without reducing output or quality.	<ul style="list-style-type: none"> • Cost savings in processes • Reduction of manual labor • Speed of process completion • Output-input comparison 	Likert (1-5)
Effectiveness Of Operational Cost Control (X2)	The level of the company's success in achieving cost control objectives according to the targets.	<ul style="list-style-type: none"> • Accuracy of cost monitoring systems • Alignment of actual costs with the budget • Achievement of efficiency targets • Implementation of SOPs 	Likert (1-5)
Implementation Of Financial Technology (Z)	The level of digital technology adoption in supporting activities and financial systems.	<ul style="list-style-type: none"> • Use of digital payment systems • Automation of financial reporting • Data integration and systems security • Ease and speed of transactions 	Likert (1-5)
Financial Performane (Y)	The final outcome of company activities in generating and profit and maintaining financial stability.	<ul style="list-style-type: none"> • Return on Assets (ROA) • Return on Equity (ROE) • Net Profit Margin (NPM) • Revenue Growth 	Likert (1-5)

RESEARCH RESULTS AND DISCUSSIONS

Based on the results of the study, an overview of previous research is presented as follows:

- a. Several empirical studies have found that the implementation of financial technology (FinTech) is generally positively associated with operational efficiency and the financial performance of financial institutions (especially banks). The use of technology reduces processing costs, accelerates transactions, and improves reporting accuracy, thereby supporting better profitability ratios (Amin et al., 2025).

The specific results that are often reported and the discussions are as follows:

- a. Reduction of Operational Costs or Improvement of Efficiency
 Studies in the banking sector show a positive effect of FinTech on operational efficiency (e.g., lower operating expenses-to-income ratios, automated processes). These findings are consistent with the theory that digitalization reduces manual activities and work duplication (Amin et al., 2025)

b. Impact on Financial Performance (Profitability/Ratios)

Several studies state that FinTech has a positive effect on banks' profitability ratios (ROA, ROE). However, this impact depends on the quality of implementation, initial investment costs, and credit risk management (Syafiie et al., 2024).

Table 2. Results of Previous Studies

Research	Main Focus	Relevance with Current Research
Banking operational efficiency through fintech implementation Gozman, D., Liebenau, J., & Mangan, J. (2018). The Innovation Mechanisms of FinTech. <i>Journal of Management Information Systems</i> , 35(1), 145-179	Fintech lowers operational costs and increases bank profits through a decrease in BOPO	Reinforce that fintech has a direct effect on cost efficiency
The impact of fintech on the efficiency of public banks Beck, T., Chen, T., Lin, C., & Song, F. (2016). Financial Innovation and Bank Performance. <i>Journal of Financial Intermediation</i>	Fintech has a significant effect on operational efficiency and business process productivity	Supporting the relationship between fintech and improving efficiency
Financial technology, inclusive finance & bank performance Narayan, P. K., & Phan, D. (2019). FinTech and Financial Inclusion: International Evidence. <i>Finance Research Letters</i>	Fintech increases profitability through rising ROA and falling cost-to-income ratio	Shows that cost efficiency leads to improved financial performance
Fintech and bank profitability stability Chen, M., Wu, Q., & Yang, B. (2019). How Fintech Affects Bank Performance: Evidence from China. <i>Pacific-Basin Finance Journal</i>	Cost-to-income ratio has a negative effect on ROA; fintech becomes a positive moderation factor	Clarify the role of cost efficiency for profit increase
Fintech and financial institution performance Puschmann, T. (2017). FinTech. <i>Business & Information Systems Engineering</i>	Fintech increases fee-based revenue and operational efficiency	Shows the dual influence of fintech on income & efficiency
Fintech and financial performance of sharia banking Abubakar, A., & Handayani, R. (2020). FinTech and Its Impact on Islamic Banking. <i>International Journal of Economics and Management Studies</i>	Fintech increases market access, transaction efficiency, and ROA	Shows that fintech is also relevant to the sharia sector
The influence of fintech on traditional bank performance	Bank-fintech collaboration increases cost and profit efficiency, pure	Strengthen the urgency of cost efficiency to face competition

Research	Main Focus	Relevance with Current Research
Tang, H. (2019). Peer-to-Peer Lending and Bank Competition. <i>Journal of Financial Economics</i>	fintech competition forces banks to be more efficient	
Fintech and MSME cost efficiency Jagtiani, J., & Lemieux, C. (2018). The Roles of Big Data and Machine Learning in FinTech. <i>Journal of Economics and Business</i> .	Fintech reduces transaction costs and improves user financial performance	Showing the benefits of fintech for the non-bank sector
Fintech & banking innovation Chen, J., & Wu, J. (2022). Digital Innovation and Banking Transformation. <i>Technovation</i> .	Banks that collaborate with fintech experience cost transformation & efficiency improvement	Relevant to assess collaboration strategies in operational efficiency

CONCLUSIONS AND RECOMMENDATIONS

Based on the results of theoretical studies, previous research, and analysis of the relationship between variables, the following things can be concluded:

1. Efficiency and effectiveness of operational cost control has an important role in improving the company's financial performance. Targeted cost management, optimal resource utilization, and the implementation of a strong control system can reduce waste and increase profit margins.
2. The implementation of Financial Technology (FinTech), especially in the form of digital services, is proven to have a positive effect on operational efficiency and effectiveness. FinTech supports transaction process automation, accelerates the flow of financial information, increases data accuracy, and reduces manual and administrative costs.
3. FinTech plays a role as a mediation variable between cost control and financial performance. That is, cost efficiency accompanied by the application of financial technology produces a more significant impact on financial performance than cost control without digitization.
4. The results of the study also show that the implementation of FinTech can improve financial performance through profitability indicators such as ROA, ROE, and NPM, although in the early stages of implementation, companies need to bear technology investment and higher digital credit risk.
5. Based on previous studies, there is still a research gap at the level of PayLater service provider companies. Most of the research focuses on user behavior, not on the direct impact on operational cost efficiency and company profitability. This is an opportunity for further empirical research in the future.

ADVANCED RESEARCH

An advanced avenue for future research is to empirically investigate how the integration of FinTech particularly PayLater platforms – optimizes

operational cost control mechanisms and amplifies financial performance within digital-based lending institutions. Future studies should incorporate multi-dimensional performance metrics, longitudinal data, and technology adoption maturity models to analyze how digital automation, predictive analytics, and real-time financial monitoring strengthen the mediating role of FinTech between cost efficiency and profitability. Moreover, exploring heterogeneity across PayLater providers such as differences in risk management algorithms, credit scoring accuracy, and customer acquisition costs will provide deeper insights into why some firms achieve superior ROA, ROE, and NPM outcomes despite high initial investment and digital risk exposure. This advanced approach will help close the existing research gap and build a more comprehensive theoretical model on the strategic impact of FinTech-enabled cost control on corporate financial sustainability.

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