Published by : Asosiasi Dosen Akuntansi Indonesia
https://journal.adaindonesia.or.id/index.php/sintamai

SINTAMA: Jurnal Sistem Informasi, Akuntansi dan Manajemen
journal homepage: https://jurnal.adai.or.id/index.php/sintamai

The Effect of Financial Technology and Innovation on Financial Performance in the Digital Age

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ARTIKEL INFO

Artikel History:
Menerima: 29 Maret 2023
Diterima: 29 Mei 2023
Tersedia Online: 31 Mei 2023

Kata kunci:
Financial Technology, Innovation, Financial Performance, Digital Era, PLS-SEM

ABSTRAK

Studi ini menyelidiki dampak teknologi keuangan dan inovasi terhadap kinerja keuangan perusahaan selama transformasi digital. Seiring digitalisasi membentuk kembali industri keuangan, memahami peran teknologi keuangan dan inovasi sangat penting untuk manajemen keuangan yang efektif. Penelitian ini menggunakan kerangka teoritis yang mengintegrasikan konsep teknologi keuangan, inovasi, dan kinerja keuangan. Berfokus pada era digital, penelitian ini menggunakan Partial Least Squares Structural Equation Modeling (PLS-SEM) melalui pendekatan G-Form untuk menetapkan pengaruh positif dan signifikan dari perkembangan teknologi dan inovasi terhadap kinerja. Temuan tersebut menggarisbawahi kontribusi penting dari penerapan teknologi keuangan dan inovasi untuk meningkatkan kinerja keuangan di era digital. Penelitian ini menawarkan wawasan berharga bagi perusahaan dan pembuat keputusan, memberikan panduan berbasis bukti di tengah lanskap digital yang dinamis. Hasilnya menegaskan bahwa memahami dampak teknologi keuangan dan inovasi terhadap kinerja keuangan memungkinkan perancangan strategi yang lebih efektif untuk mengoptimalkan hasil dalam lingkungan bisnis digital. Sebagai kesimpulan, penelitian ini menekankan peran penting teknologi keuangan dan inovasi dalam meningkatkan kinerja keuangan perusahaan selama era digital. Penelitian ini memperdalam pemahaman kita tentang bagaimana perusahaan dapat secara strategis memanfaatkan kemajuan ini untuk mencapai keberhasilan finansial. Penelitian ini berkontribusi pada pemahaman mendalam tentang hubungan rumit antara teknologi finansial, inovasi, dan kinerja keuangan perusahaan, serta menawarkan peta jalan untuk menavigasi tantangan dan peluang yang dihadirkan oleh transformasi digital.

Artikel History:
Received: 29 March 2023
Accepted: 22 May 2023
Available Online: 31 May 2023

Keywords:
Financial Technology, Innovation, Financial Performance, Digital Era, PLS SEM

This study investigates the impact of financial technology and innovation on companies' financial performance during digital transformation. As digitalization reshapes the financial industry, understanding the role of financial technology and innovation is crucial for effective financial management. The research employs a theoretical framework integrating concepts of financial technology, innovation, and financial performance. Focused on the digital era, the study utilizes Partial Least Squares Structural Equation Modeling (PLS-SEM) through the G-Form approach to establish a positive and significant influence of technological developments and innovation on performance. The findings underscore the vital contribution of adopting financial technology and innovation to enhance financial performance in the digital era. The research offers valuable insights for companies and decision-makers, providing evidence-based guidance amid the dynamic digital landscape. The results affirm that comprehending the impact of financial technology and innovation on financial performance enables the design of more effective strategies to optimize outcomes in the digital business environment. In conclusion, the study emphasizes the pivotal role of financial technology and innovation in elevating company financial performance during the digital era. It deepens our understanding of how companies can strategically leverage these advancements to achieve financial success. The research contributes to a nuanced comprehension of the intricate relationship between financial technology, innovation, and company financial performance, offering a roadmap for navigating the challenges and opportunities presented by digital transformation.

1. INTRODUCTION

In the ever-evolving digital age, the changing financial landscape has become increasingly dynamic and challenging. Technology has become a major catalyst in changing the way businesses and finance operate. In this context, the innovation and adoption of financial technology (fintech) has become an important factor influencing the financial performance of companies. As technology advances, companies around the world have leveraged various fintech solutions to optimise their operations, improve customer service, and achieve greater efficiency. Financial technology has created breakthroughs in the way financial transactions are conducted, from digital payments, technology-driven lending platforms, to advanced data analytics tools that enable companies to make decisions based on more accurate and real-time information.

Fintech is a network technology that offers new ways to empower people by increasing transparency, reducing costs, eliminating intermediaries and creating financial information. The goal is to facilitate public access to financial products and facilitate the business world. There are three types of financial technology services (Fintech), namely peer-to-peer (P2P), third-party payment systems and crowdfunding.

One of the Financial Technology (Fintech) services is peer to peer lending (P2P). Peer to peer lending (P2P) is a new financial market that has existed since the last few years which grew driven by the glob One of the financial technology (Fintech) services is peer-to-peer lending (P2P). Peer-to-peer (P2P) lending is a new financial market that has been around for the past few years and has grown as a result of the global financial crisis, which has led to a lack of trust in banks and a decline in consumer credit. regulation and capitalization. needs Peer-to-peer lending is also

defined as a "financial exchange" This is done directly between individuals without the use of traditional financial intermediaries. Peer-to-peer lenders offer loans with a wide range of principal balances, interest rates and repayment terms.

al financial crisis which resulted in a lack of confidence in banks and less attractive consumer loans caused by stricter regulatory oversight and more capital needs. Peer to peer Lending is also defined as a "financial exchange" that takes place directly between individuals without the use of traditional financial intermediaries. Peer to peer Lending organisers offer loans with a wide variety of principal balances, interest rates and repayment periods.

Innovation can be defined as the creation and invention of new ideas, practices, processes, products or services (Daft, 1978). Innovation is non-routine, substantive and involves the modification of existing organizational competencies (Mezias and Glynn, 1993). In an increasingly competitive environment, innovation is considered a key factor for firms seeking to create sustainable value and competitive advantage (Wang and Wang, 2012). Innovation can be described on two levels, which are improvements and new directions (Verganti, 2016). While improvements are new solutions that aim to respond optimally to existing value definitions or existing problems (Verganti, 2016), new directions of innovation are more radical in creating new value propositions and new paths. The emphasis on innovation has led to significant research efforts by professionals and researchers in the field to understand the role of innovation in firm performance (Datta and Roumani, 2015). Not surprisingly, more innovative firms are better able to develop new capabilities and respond to a changing business environment, leading to better performance (Calantone et al., 2002). Firm performance indicates how well a firm can achieve its goals compared to its main competitors (Cao and Zhang, 2011). According to (Muhammad Ibnu R et al., 2021) financial performance reflects the current state of the company, if the performance of the company is good, the performance of the company is good Firm performance indicates how well a firm can achieve its goals compared to its main competitors (Cao and Zhang, 2011). According to (Muhammad Ibnu R et al., 2021), the financial performance reflects the current state of the company, if the financial performance of the company is good, the company can produce the maximum profit for the company, but when the performance deteriorates, it reflects a decrease in income compared to ownership.

However, in this change, the question that arises is to what extent financial technology and innovation have affected the overall financial performance of companies. How has it impacted financial risk, especially in the context of data security and financial regulation? To answer these questions, this study aims to comprehensively examine the relationships between financial technology, innovation and financial performance in the digital age.

We better understand the impact of fintech and innovation on financial performance, it is expected that decision-making in the world of business and finance can become more informed and data-driven. In addition, the results of this study can also provide guidance to interested parties, including regulators and other stakeholders.

In the following chapters, we will discuss the theoretical framework, research methodology, findings, and practical implications of this study. We therefore hope that this research will contribute to a better understanding of how financial technology and innovation affect financial performance in the ever-changing digital age.

2. LITERATURE REVIEW

Financial Technology (Fintech)

Bank Indonesia defines Fintech as a phenomenon of combined technology and economic characteristics that transform weak financial models and barriers. It aims for market penetration that increases the number of operators implementing services and promotes financial inclusion. Fintech represents a new industry that combines all innovations in financial services applied with new technological developments. Fintech is committed to the financial services industry and is evolving to use all technologies used in the financial services industry, not just new innovations.

In Indonesia, fintech is known as money lending services and IT-based loan services. As for fintech, it is regulated by Financial Services Agency Order No. 77/POJK.01/2016, which concerns money lending and IT-based loan services. Article 1(3) of POJK 77/POJK.01/2016 states that fintech-based money loans and loan services are the provision of financial services to connect lenders and borrowers so that loans and credit agreements can be made in rupee currency directly through a bank. bank system electronically via the Internet.

The Effect of Fintech on Financial Performance

Performance is the result achieved by an organization, both for-profit and non-profit, produced within a certain period of time. Understanding performance can provide a holistic understanding. The word performance itself is sometimes equated with work efficiency, work efficiency, work results, goal achievement, work productivity. Basically, performance is individual because each employee has different abilities in carrying out their duties.

According to Irhan Fahm (2011: 2), financial performance is an analysis that is done to determine how much the company has correctly and properly applied the rules of financial management. Company and profitability is a description of a company and its financial condition, which is analyzed using financial analysis tools to determine the strengths and weaknesses of the company, and the financial position that reflects operations over a period of time. This is very important for the optimal use of resources in the face of environmental changes. The metrics include several ratios namely liquidity ratio, debt/solvency ratio, activity ratio, profitability/profitability ratio and valuation ratios.

According to Munawiri (2006: 31), the importance of evaluating the company and economic results is as follows: 1) Find out the level of liquidity, that is, the company and its ability to accept its financial obligations that must be fulfilled. immediately; or a company. ability to perform our tasks. financial when they are billed. 2) Knowledge of the level of solvency, ie. the company and its ability to manage its financial obligations in liquidation of the company, both in terms of short-term and long-term financial obligations. 3) Determining the level of profitability, or profitability, which indicates business activity and the ability to generate profit over a certain period of time. 4) Knowing the level of business stability, ie. the company and its ability to conduct business stably, which is measured by taking into account the company and its ability to pay the interest costs of its debt, including timely capital payments and regular payments. ability to pay dividends to shareholders without obstacles and without financial crisis.

Fintech is not a new phenomenon, but in the 20th century, banks introduced ATMs and credit cards. Some of the most commonly used fintech banking services are ATMs, mobile payments, electronic money, online banking and electronic banking or online banking.But only a few people enjoy these digital banking services. Banking penetration in Indonesia is still relatively low, with the Global Findex report showing that only 36% of Indonesian adults had a traditional bank account in 2014. Research firm Euromonitor (2018) found that 170 million Indonesians used smartphones in 2017, 130 million of whom used their phones to access the Internet, while 80 million had no access to financial services. The number of mobile payers is also increasing, dominated by non-bank fintechs. According to Agusta and Hutabarat (2018), Go Pay and TCash were the most widely used in 2017, then PayPro and OVO became services with a significant increase in the number of users, followed by mobile payments from banks or Mandiri ECash. If we pay attention, mobile payers have many users because of the wider range of services they offer.

Financial Risk in Fintech

FinTech has various positive sides and great opportunities in application and development in its application as well as risk factors that should not be ignored. Operational risks due to demoralization of both FinTech operators and customers require serious attention, otherwise FinTech may become a tool of fraud. In addition, in order to keep both parties safe, the risks of the security systems used must also be considered. Therefore, the government needs strict regulations and policies to support and protect it. So that the risks posed can be mitigated and the FinTech industry continues to have symbiotic interactions with stakeholders.

Research Model and Hypothesis

Progress in financial technology empowers organizations to harness digital linkages among individuals, data, information, and knowledge. Entities embracing technological advancements can integrate novel practices and innovative initiatives into their operational frameworks (Díaz-Chao et al., 2015). Consequently, financial technology facilitates the generation of fresh ideas and communication among business partners within the value chain. Thus, the authors posit the subsequent relationships in this study:

H1: A favorable correlation exists between financial technology and innovation.

Fintech represents a technological domain that has revolutionized and progressed the operations of the financial sector and the delivery of financial services. Fintech contributes to innovation by frequently introducing new business models that prioritize efficiency and convenience, such as digital payments, peer-to-peer lending, and robo-advisors. Additionally, fintech incorporates artificial intelligence and data analytics to assist companies in credit risk analysis, market trend prediction, and enhanced management of investment portfolios. This application can mitigate the risk of financial loss and enhance profitability. Previous studies on the influence of financial technology indicate a positive impact on business performance. Therefore, the authors make the following assumptions:

H2: A correlation exists between financial technology and financial performance in a favorable manner.

Amidst a business landscape marked by escalating competition and uncertainty, innovation has emerged as a crucial mechanism for the survival and growth of companies (Grønhaug et al., 1988). Innovation enhances organizational efficiency, contributes value, and introduces intangible resources to the firm (Wang and Wang, 2012). Companies characterized by a higher degree of innovation exhibit increased responsiveness to customer needs and can cultivate additional capabilities that result in enhanced performance (Calantone et al., 2002). Consequently, the authors posit the subsequent relationship in this study:

H3: A favorable correlation exists between innovation and the performance of a company.

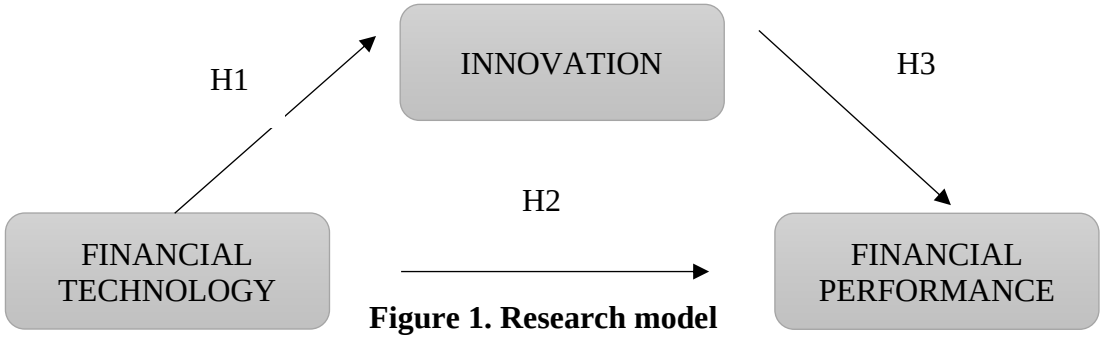

Figure 1. Research model

This study seeks to investigate the correlation between financial technology and innovation in Indonesia and financial performance excellence. It aims to determine whether there is a notable positive relationship between these factors, as elucidated in the earlier discussion on the determinants impacting financial performance.

3. RESEARCH METHODOLOGY

The study employs the Partial Least Square (PLS-SEM) analytical approach to assess the structural equation model, as outlined. PLS-SEM has demonstrated its effectiveness in examining relatively intricate models, especially when dealing with limited sample sizes, as affirmed by Reinatrz et al. (2009).

The survey engaged 55 participants, comprising university students, economics students, and a selection of employees. The target respondents included students, particularly those studying economics, and employees with a grasp of financial technology, innovation, and financial performance development. Data collection was conducted using a Google Form, distributed to the respondents in October 2023.

4. RESULTS OF RESEARCH AND DISCUSSION

The following is a descriptive overview of the survey respondents' profiles. A total of 55 respondents can be seen:

Table 1. Descriptive Profile of Respondents

Category	Description	Frequency of Respond	Frequency %
Age	< 20 years	14	25,50%
	20-30 years	41	74,50%
	31-40 years	0	0
Sex	Male	15	27,30%
	Female	40	72,70%
Level Of Education	SD/SMP	0	0
	SMA/SMK	16	29,10%
	Diploma	0	0
	Sarjana(S1)	38	69,10%
	Pascasarjana(S2/S3)	1	1,80%
Work	Colleger	51	92,70%
	Private Officers	1	1,80%
	Female Employees	1	1,80%
	Work	1	1,80%
	-	1	1,80%

Source: Data Processsed

Validity and Reliability Test of research variables

Based on table 2, the correlation statements for all corrected item totals show this pattern clearly have a value greater than 0.700. So it can be said that all statements are valid.

Table 2. Validity Test

	Creecyted Item-Total Correlation	Sig.(2-tailed)
Financial Performance		
FP1	0.873	0
FP2	0.742	0
FP4	0.853	0
Financial Technology		
FT1	0.777	0
FT2	0.859	0
FT3	0.846	0
FT4	0.868	0
Innovation		
INO1	0.941	0
INO2	0.877	0
INO3	0.896	0
IN04	0.860	0

Source: Data Processed

The reliability test shows the consistency of the variables used in the study. And the variable must have an alpha-cronbachandgt; 0.6. It can be seen that all variables used are reliable and eligible to continue to the next stage.

Table 3. Reliability Test

Variable	*Cronbach's alpha*	Information
Financial Performance	0.763	Reliabel
Financial Technology	0.859	Reliabel
Innovation	0.916	Reliabel

Source: Data Processed

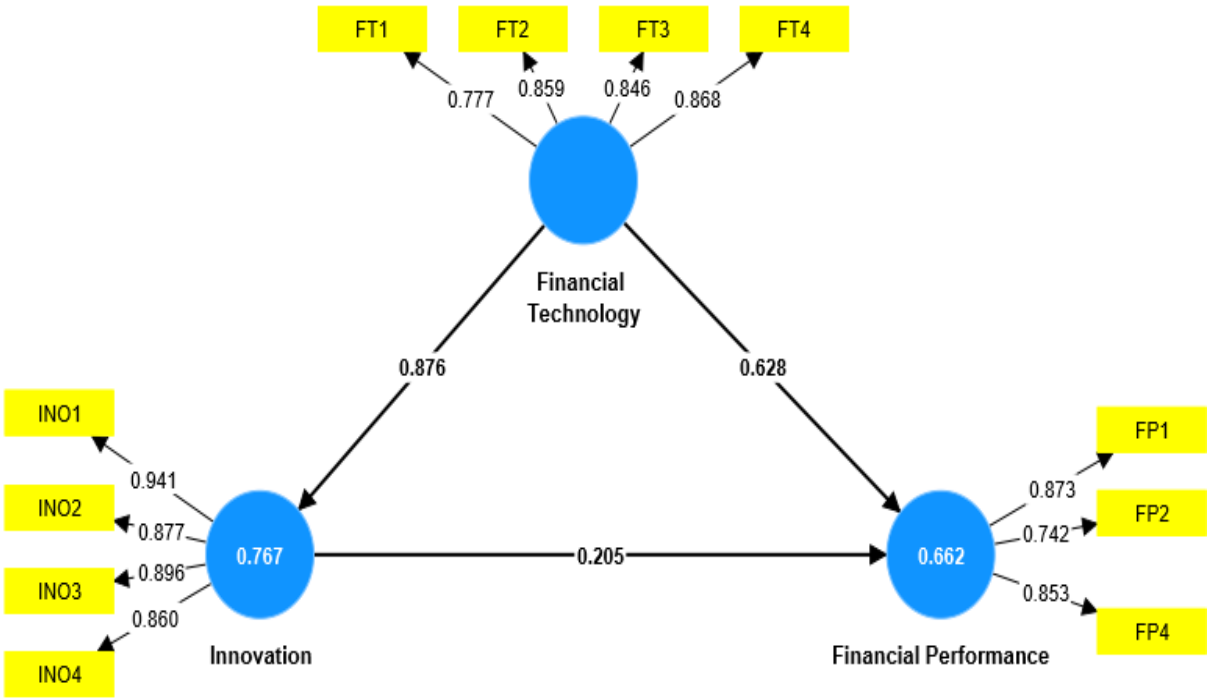

Figure 2. Partial Least Square (SEM-PLS)

Indicator Reliability

Indicator reliability tests the consistency of indicators used in research. The minimum requirement is 0.7. You can see all the variables used to fulfil the requirement so you can proceed to the next step.

Table 4. Indicator Reliability

Variable	Indicator	Reliability
Financial Performance	FP1	0.873
	FP2	0.742
	FP4	0.853
Financial Technology	FT1	0.777
	FT2	0.859
	FT3	0.846
	FT4	0.868
Innovation	INO1	0.941
	INO2	0.877
	INO3	0.896
	INO4	0.860

Source: Data Processed

Internal Consistency Reliability

Internal consistency reliability is used to measure the composition of the variables used in the study and provides a composite reliability above 0.6. It appears that all variables fulfil the requirements, so there is a possibility to continue the research to the next phase.

Table 5. Internal Reliability

Variable	Composite reliability (rho_a)	Composite reliability (rho_c)	Description
Financial Performance	0.777	0.864	Reliable
Financial Technology	0.866	0.904	Reliable
Innovation	0.921	0.941	Reliable

Source: Data Processed

Convergent Validity

The Convergent Validity value measures the accuracy of the variables used in the study when the required AVE value is above 0.5. It appears that all variables used are valid and can be continued to the next step.

Table 6. Convergent Validity

Variable	Average variance extracted (AVE)	Description
Financial Performance	0.680	Valid
Financial Technology	0.703	Valid
Innovation	0.799	Valid

Source: Data Processed

Rated R-Square and Q-Square

It can be seen that the percentage of the influence of Financial Technology and Innovation on Financial Performance in the digital era is 66.2%.

Table 7. R-square

Variable	R-square
Financial Performance	0.662
Financial Technology	-
Innovation	0.767

Source: Data Processed

Value Q2 = 1-(1-0.662)
= 1- 0.338
= 0.662

The Q-Square value shows the PLS model used in the study. It can be seen that the suitability of the model used is 66.2%. It can be concluded that the model used is very good.

Hypothesis testing

The rules of thumb for supporting a research hypothesis are: (1) Should the coefficient or direction of the variable relationship (as indicated by the original sample value) align with the hypothesis, and (2) if the t-statistic is greater than 1.64 (two-tailed) or 1.96 (one-tailed), and the probability value (p-value) is less than 0.05 or 5%.

Table 8. Hypothesis Testing Results

Variable	Path Coefficient	Description
Financial Technology -> Financial Performance	0.628	Accepted
Financial Technology -> Innovation	0.876	Accepted
Innovation -> Financial Performance	0.205	Accepted

Source: Data Processed

R2 (R-square) of 0.662 and customized R-square of 0.649 or 65.00%, which means that the influence of variables other than financial technology and innovation on financial performance is 35.00%. The results of this study support or confirm the research results of Henfridsson et al. (2018), Nambisan et al. (2017) and Nwankpa and Roumani (2016). Where previous research shows how the unique nature of digital technology allows for new types of innovation and entrepreneurship that are different from analog industrial processes. The purpose of this study is to ascertain whether financial technology actually has an impact on financial performance. Of the two factors studied, both were shown to have an impact on financial performance. The model studied also has a high explanation rate of 94.1%, which means that financial technology and innovation can significantly explain financial performance. These findings contribute significantly to efforts to improve financial performance. These findings can be used as the next step for other companies or industries to improve their financial performance by using financial technology.

One of the limitations of this study is mainly related to respondents, which in this study is limited to the level of education of respondents, most of whom are students who only know in general about finance. To get more generalizable results, we suggest expanding the population to companies that have implemented financial technology.

5. CONCLUSION

The impact of the influence of financial technology and innovation on financial performance in the current era is significant and needs to be improved. By using financial technology, companies can manage their finances more efficiently, while innovations in products and services open up new revenue opportunities. But challenges such as security and regulation must also be considered. However, those who can leverage financial technology to improve efficiency and mitigate risks have gained a competitive advantage. Moreover, innovations that help companies better face challenges and opportunities are an important foundation for achieving better economic outcomes. To compete in today's era, firms must continuously invest in financial technology and foster or encourage a strong culture of innovation. This allows them to gain a competitive advantage and look to the future with confidence in managing their finances and achieving sustainable performance.

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