KEYNESIA

The influence of using fintech P2P Lending and QRIS on MSME performance with e-commerce as an intervening variable

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A B S T R A C T

The growth of Financial Technology (Fintech) in Indonesia, particularly Peer-to-Peer (P2P) lending services, has significantly impacted financing access for Small and Medium Enterprises (SMEs) by facilitating loans through digital platforms. This serves as a vital alternative amid traditional financial constraints, promoting the development of Microfinance Institutions (MFIs). Concurrently, e-commerce transformation and Quick Response Code Indonesian Standard (QRIS) implementation have accelerated digital economy growth, enabling SMEs to expand their businesses and reach broader markets. Nonetheless, challenges such as enhanced governance, risk management, and regulatory adaptation remain crucial for supporting sustainable SME growth. This study investigates the effect of P2P Lending and QRIS on SME performance via e-commerce in Bandung City. Using quantitative research methods and a Likert scale, the study surveyed a population of 523,584 SMEs, targeting 300 respondents. Data analysis was conducted using Structural Equation Modeling (SEM) with SmartPLS. Results indicate a significant impact of P2P Lending and QRIS on SME performance through e-commerce, with P2P Lending contributing an influence of 0.109, QRIS 0.121, and e-commerce 0.329. These findings aim to enhance understanding of how P2P Lending and QRIS affect SME performance via e-commerce.

Keywords: E-commerce, Fintech, Peer to Peer (P2P) Lending, Quick Response Code Indonesia Standard (QRIS), SME performance.

1. INTRODUCTION

Bandung, as the center of creativity and innovation in West Java, plays an important role in the regional economy through the contribution of Micro, Small, and Medium Enterprises (MSMEs). Data from Open Data Jabar (2023), shows the significant growth of MSMEs in Bandung, reflecting the strong and diverse dynamics of the local economy. MSMEs are not only the backbone of the local economy but also a source of innovation and job creation (Portal Bandung, 2022).

The rapid growth of Financial Technology (Fintech) in Indonesia has changed the country's financial landscape, making it one of the largest Fintech markets in Southeast Asia. The adoption of Fintech services, especially individual-to-person lending (P2P Lending) has increased significantly, especially by MSMEs to gain access to financing. However, despite the existence of new financial technologies, MSMEs still face significant challenges in accessing traditional financing from formal financial institutions.

Non-Bank Financial Institutions, such as Microfinance Institutions (MFIs), have emerged as a potential alternative to bridge financial access for MSMEs. However, the complexity of laws and regulations, especially for MSMEs that do not yet have legal status or business licenses, is an ongoing challenge. The development and support of such financial entities is essential to empower MSMEs and increase their contribution to the economy.

The Fintech lending industry, regulated by OJK Regulation Number 77/POJK.01/2016, has played a significant role in providing easily accessible financing for MSMEs. This sector has shown significant growth, with total outstanding financing reaching IDR 55.98 trillion, of which IDR 21.58 trillion, or 38.54%, was allocated to MSMEs. This growth highlights the importance of Fintech lending in supporting MSMEs and contributing to their financial aspirations. Peer-to-Peer (P2P) lending is a bold money lending service, facilitating individuals or organizations to lend and borrow funds in the form of Rupiah currency through an information technology platform.

Financing through P2P lending has shown a significant positive impact on improving the performance of MSMEs, by providing wider and more flexible access to capital. Research by Syarifah (2019) confirms that P2P lending significantly increases the productivity, marketing, and profitability of MSMEs, showing its potential as an effective financing alternative outside the traditional financial system. Research conducted by Candra et al. (2020)explains the importance of examining what variables can assess how influential the adoption and use of fintech lending applications are, including perceived ease of, perceived usefulness, and e-trust.

MSMEs are more suitable for obtaining financing from P2P lending because of the fast application process, competitive interest rates, and wider access without strict collateral requirements, making P2P lending a more inclusive alternative and supporting the growth and stability of the MSME sector (Yeo & Jun, 2020). According to Otoritas Jasa Keuangan (2024), the number of active loan recipient accounts in West Java in February 2024 was 4,734,028 entities, down from 6,427,757 entities in February 2023. This change can be caused by various factors, including changes in government policy, economic performance, and the behavior of loan users.

Business transformation through e-commerce is another important element in Indonesia's digital economy strategy. The Ministry of Communication and Information (Kominfo, 2021) has prepared a 2020-2024 Strategic Plan, emphasizing the acceleration of digital transformation in various sectors, including the economy. West Java, and Bandung in particular, has seen significant growth in e-commerce, reflecting the increase in digital integration platforms in local businesses.

However, the COVID-19 pandemic has brought drastic changes in business operations globally. Although the pandemic has accelerated digitalization in many sectors, MSMEs often face difficulties in adapting due to limited resources and lower adaptive capacity. This condition is exacerbated by the perception of benefits and risks felt by MSMEs towards e-commerce adoption. According to research conducted by Kosasi et al. (2019), factors such as technology, organization, and environment play an important role in mediating the intention to use e-commerce by MSMEs.

The introduction of QRIS, a national standard for QR code payments developed by Bank Indonesia, has facilitated MSME operations by reducing transaction costs and running payment processes. Research shows that the implementation of QRIS has a positive impact on the financial performance of MSMEs, contributing to increased sales, better cash flow, and more effective financial management. Apart from that, research conducted by (Djoyo et al., 2022) found that perceived usefulness and security have a significant effect on user trust, which in turn affects the intention to use QRIS.

Ausat & Peirisal (2021) stated that there is a significant correlation between technological, organizational, and individual factors with e-commerce adoption, which is expected to substantially improve the performance of Micro, Small, and Medium Enterprises (MSMEs). In this context, technology plays a major role in facilitating more efficient and effective business operations, enabling MSMEs to access wider markets and conduct transactions at lower costs. Although internet user penetration and e-commerce transactions have shown an increase, the use of digital payment methods such as QRIS still faces several challenges. Research conducted by Wardhani et al. (2023) highlighted that a large number of micro-entrepreneurs have not adopted QRIS. The main reasons identified include ignorance about how to register for QRIS, poor network quality at business locations, transaction costs that can reduce daily income, and a preference for cash transactions.

In 2024, the focus is on bringing MSMEs to a more modern level and enabling them to compete in the digital market. Factors that can improve MSME performance include digital technology, employee digital skills, and digital transformation strategies. However, MSMEs also face major obstacles such as limited capital, barriers to adopting digital technologies, and significant variations between types of MSMEs that can complicate their digital transformation (Teng et al., 2022).

Overall, the interaction between P2P Lending, QRIS, and E-commerce in the Bandung MSME sector emphasizes the importance of digital financial solutions in improving economic resilience and small business growth. These technologies are not only innovations but also important tools in overcoming financial barriers faced by MSMEs, enabling them to thrive in the increasingly digital economy. This study aims to examine the effect of the integration of P2P Lending, QRIS, and e-commerce on the performance of MSMEs in Bandung. Through this study, it is expected to identify factors that influence the success of MSMEs in using financial and digital technology in their operations. The research approach used is quantitative, where data is collected through a survey targeted at MSME actors in the city of Bandung.

This study aims to investigate the impact of three pivotal digital financial innovations—Peer-to-Peer (P2P) lending, QRIS, and e-commerce—on the performance of MSMEs in Bandung City. By examining the interactions and effects of these innovations, the research seeks to provide valuable insights that will enable stakeholders to craft effective strategies for maximizing the potential of MSMEs in the evolving digital landscape. The ultimate goal is to contribute to Indonesia's economic growth by enhancing the performance and competitiveness of these enterprises.

A significant aspect of this study lies in its novel approach, combining the variables of QRIS and e-commerce to understand their joint influence on MSME performance. Unlike previous research, which often examined fintech's impact in broader or more generalized terms, this study delves deeper into the integration of fintech products like P2P lending and QRIS with e-commerce platforms. This integration offers a fresh perspective on the factors that drive MSME performance, adding a new dimension to the existing body of knowledge.

Furthermore, by focusing on MSMEs in Bandung City, this study provides a geographically concentrated analysis, offering more targeted insights compared to studies that span wider regions. Data collection was conducted through an online survey, engaging MSME actors to capture the internal and external dynamics influencing the adoption of financial technology and its subsequent impact on their business operations.

To contextualize this study within existing literature, several relevant studies were reviewed. For instance, Lontchi et al. (2023) examined the influence of fintech on MSME performance in

Cameroon post-COVID-19, with financial literacy as a mediator. The findings indicated that fintech significantly improved MSME performance, mediated by financial literacy. Another study by Djoyo et al. (2022) explored the factors affecting QRIS adoption among MSME merchants in South Tangerang, revealing the significant roles of perceived usefulness and security in fostering trust in QRIS.

The unit of analysis in this study is MSMEs that have adopted P2P lending and QRIS as part of their business operations, as well as those who have integrated e-commerce platforms into their marketing and sales activities. This approach allows this study to specifically measure the impact of financial technology and digitalization on business performance at the micro level, which contributes to the literature with new perspectives and empirical data that can be used as references for stakeholders in formulating policies or strategies to support MSME growth. Based on the theory and results of previous studies, a framework of thought can be obtained as in Figure 1. namely Peer to Peer (P2P) lending (X1) and QRIS (X2) affect MSME Performance (Y) with E-commerce (Z).
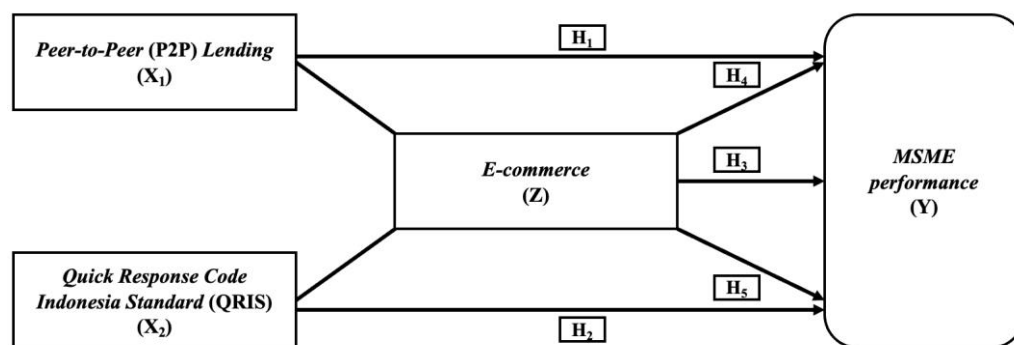

Figure 1. Framework of Thought

Source: processed data (2024)

2. METHOD

This study adopts two main paradigms, namely positivism and post-positivism. The positivist paradigm focuses on quantitative methods to test hypotheses that can be measured objectively, while the post-positivism paradigm recognizes the limitations of knowledge and allows the use of qualitative and quantitative methods for a deeper understanding of phenomena (Indrawan & Yaniawati, 2017). According to Sugiyono (2021), the research method is an essential scientific step that aims to produce valid and reliable data for specific research purposes, and this scientific method involves systematic, rational, and empirical characteristics. This research is descriptive in nature with the aim of collecting and analyzing data from samples to reflect the general characteristics of the population without manipulating variables (Sekaran & Bougie, 2016). The approach used is deductive, which involves a systematic process starting from problem identification, problem statement, hypothesis development, to data interpretation (Cooper & Schindler, 2014).

The method used is quantitative, in accordance with the philosophy of positivism, which involves the use of numerical data and descriptive statistical analysis to test the formulated hypotheses (Sugiyono, 2021). The research strategy applied is a quantitative survey to collect data on beliefs, characteristics, and behavior using questionnaires, so that the results can be generalized (Sugiyono, 2021). This research is causal, aiming to determine the causal relationship between the variables studied. Data collection was carried out at one point in time in a cross-sectional study to obtain an instant picture of the phenomenon being studied (Indrawan & Yaniawati, 2017). In this study, the variables studied were defined to identify relevant attributes or characteristics. The independent variables include Peer-to-Peer (P2P) Lending (X1) and QRIS (X2), each of which will be evaluated to determine its effect on MSME performance. The dependent variable is MSME performance, which is measured to assess the impact of the use of P2P Lending and QRIS. Meanwhile, the intervening variable is e-commerce, which will be examined for its role in influencing the relationship between the independent and dependent variables. The measurement scale used in this study is the Likert

scale. For more details, the operational variables of peer-to-peer lending, Quick Response Code Indonesia Standard (QRIS), MSME Performance, and E-commerce can be seen in table 1 below.

Table 1. Operasional Variabel

No	Variables	Latent Variables	Questionnaire Indicators	Item Numb.	Scale
1	**MSME** *Performance* (Dependent Variable/Y) (Lontchi et al., 2023)	*Operational performance*	I have managed to reduce the cost of production per unit in my business.	1	Ordinal
			I have reduced the product defect rate, significantly improved the quality.	2	Ordinal
			I have also managed to shorten the lead time and speed up the new product development cycle.	3	Ordinal
			My business is now more flexible in adjusting product designs and coping with production fluctuations.	4	Ordinal
			I have adopted modern techniques to improve my operational performance.	5	Ordinal
			My business has seen an increase in sales.	6	Ordinal
		Financial performance	I have managed to increase the level of operational profitability.	7	Ordinal
			The return on investment in my business has increased.	8	Ordinal
			I have managed to reduce production and logistics costs, improving overall efficiency.	9	Ordinal
2	***Peer-to-Peer* (P2P) *Lending*** (Independent Variable/X1) (Candra et al., 2020)	*Perceived Ease of Use*	Learning to use the fintech loan application is easy.	10	Ordinal
			I can easily become proficient in using the fintech loan application.	11	Ordinal
			The fintech loan application is very easy to use.	12	Ordinal
			The interaction using the fintech loan application is clear and easy to understand.	13	Ordinal
		Perceived Usefulness	I am very enthusiastic about using the fintech loan application.	14	Ordinal
			Using the fintech loan application will increase my productivity.	15	Ordinal
			Using the fintech loan application will enrich my experience.	16	Ordinal
			The fintech loan application is very useful.	17	Ordinal
			The fintech loan application is the best solution in the industry.	18	Ordinal
			The fintech loan application is very efficient.	19	Ordinal
			I believe that fintech loan applications will fulfill their vision, mission and promises.	20	Ordinal
			I trust the information provided by the fintech loan applications that I know.	21	Ordinal
			I believe that fintech loan applications will do a good job.	22	Ordinal
			I believe that fintech loan applications have security features to protect user data.	23	Ordinal
			I feel safe storing personal data in fintech loan applications.	24	Ordinal
		E-Trust	I am sure I can use fintech loan applications safely.	25	Ordinal
			The fintech loan applications that I know are very reliable.	26	Ordinal
			Fintech loan applications continue to be improved in accordance with technological developments.	27	Ordinal
			In my opinion, fintech loan applications always respond to consumer needs.	28	Ordinal
			Fintech loan applications have an easy-to-use design.	29	Ordinal
			I believe fintech loan applications always attract my attention.	30	Ordinal
			Fintech loan applications pay attention to consumer problems.	31	Ordinal
			If a problem occurs, I am sure it will be easy to make a complaint.	32	Ordinal
3		*Perceived Usefulness*	The implementation of QRIS increases my business productivity by simplifying transactions.	33	Ordinal

No	Variables	Latent Variables	Questionnaire Indicators	Item Numb.	Scale
	Quick Response Code Indonesia Standard **(QRIS)** (Independent Variable /X2) (Djoyo et al., 2022)	*Perceived Security*	QRIS makes my transaction process more efficient, reducing the time required per transaction.	34	Ordinal
			QRIS has added financial benefits to my business by lowering transaction costs.	35	Ordinal
			My overall business performance has improved since integrating QRIS into my payment system.	36	Ordinal
			QRIS improves the effectiveness of my payment handling, providing faster service to customers.	37	Ordinal
			QRIS ensures high standards of information security in my transactions.	38	Ordinal
			I feel safe storing personal data in QRIS transactions because of strong privacy measures.	39	Ordinal
			QRIS maintains the integrity of transaction data, ensuring accuracy and reliability.	40	Ordinal
		Perceived Ease of Use	QRIS is user-friendly, making it easy for customers and staff to use.	41	Ordinal
			Training staff to use QRIS is very easy because of its simple interface.	42	Ordinal
			The QRIS system is easy to understand, so new users can quickly master it.	43	Ordinal
			QRIS is flexible and easy to integrate into my existing sales system.	44	Ordinal
			QRIS management is very easy and gives me better control over my payment process.	45	Ordinal
3	*E-Commerce* (Intervening Variable/Z) (Christanti & Jatiputra, 2023)	*Operational Performance*	E-commerce helps product delivery quickly and easily.	46	Ordinal
			E-commerce improves the quality of services or products.	47	Ordinal
			E-commerce has payment security for me and customers online.	48	Ordinal
			E-commerce helps service or customer service to customers after sales.	49	Ordinal
			E-commerce helps find new suppliers that are cheaper or suitable.	50	Ordinal
			E-commerce helps customers to order or buy goods/services online, making it easier for customers and more interested.	51	Ordinal
			E-commerce makes it easier to communicate with suppliers.	52	Ordinal
		Marketing Performance	E-commerce makes it easier to advertise my goods or services online.	53	Ordinal
			E-commerce helps customers to learn about my products or services, and attracts customers to be interested in my business offerings.	54	Ordinal
			E-commerce helps in business brand recognition.	55	Ordinal
			E-commerce helps to market products or services through customer reviews.	56	Ordinal
			E-commerce expands the business market.	57	Ordinal
			E-commerce helps to grow business sales.	58	Ordinal
			E-commerce helps to grow the customer base or loyal customers.	59	Ordinal
		Financial Performance	E-commerce fosters better customer satisfaction.	60	Ordinal
			E-commerce helps businesses to be more proactive in improving business processes and optimization in meeting new quotas or quality standards.	61	Ordinal
			E-commerce helps businesses to have a competitive advantage.	62	Ordinal

Source: processed data (2024)

The population of this study consisted of MSMEs in Bandung City that utilize P2P Lending, QRIS, and e-commerce. The minimum sample size was determined based on the number of independent variables to be tested, following the guidelines from Hair et al. (2017). In studies testing two independent variables, this theory suggests that the minimum sample size required is 90, with a significance level of 5%. Taking a sample of 300 not only meets this minimum recommendation, but also provides a little extra room to address potential problems such as missing data or outliers that

may occur during the data collection process.

This study applies multivariate analysis and structural equation modeling (SEM) with the Partial Least Squares (PLS) approach. Multivariate analysis is used to evaluate the relationship between multiple variables, and PLS was chosen because of its ability to deal with non-normal data and small samples. PLS SEM is particularly effective in dealing with latent variables that cannot be measured directly, providing more accurate and valid estimates for testing the research model.

In addition, this study measures the validity and reliability of the model using several tests, including convergent and discriminant validity, as well as composite reliability. Convergent validity is assessed through the Average Variance Extracted (AVE) value and factor loading values, while discriminant validity ensures that the indicators measure the correct construct. Evaluation of model fit involves testing on the measurement model (outer model) and the structural model (inner model). The coefficient of determination (R^2) is used to assess the predictive power of the model, and path coefficients are estimated to determine significant effects between latent variables. The relevance of the model prediction is also examined using the Q^2 value, which indicates the predictive ability of the model. The T-test is conducted to test the significant effect of independent variables on the dependent variable.

3. RESULTS AND DISCUSSION

3.1 RESULT

Structural Equation Modeling Partial Least Square (SEM PLS) Analysis Results

This stage is related to the formation of the initial model of the initial structural equation model, before estimation is carried out. This initial model is formulated based on a theory or previous research.
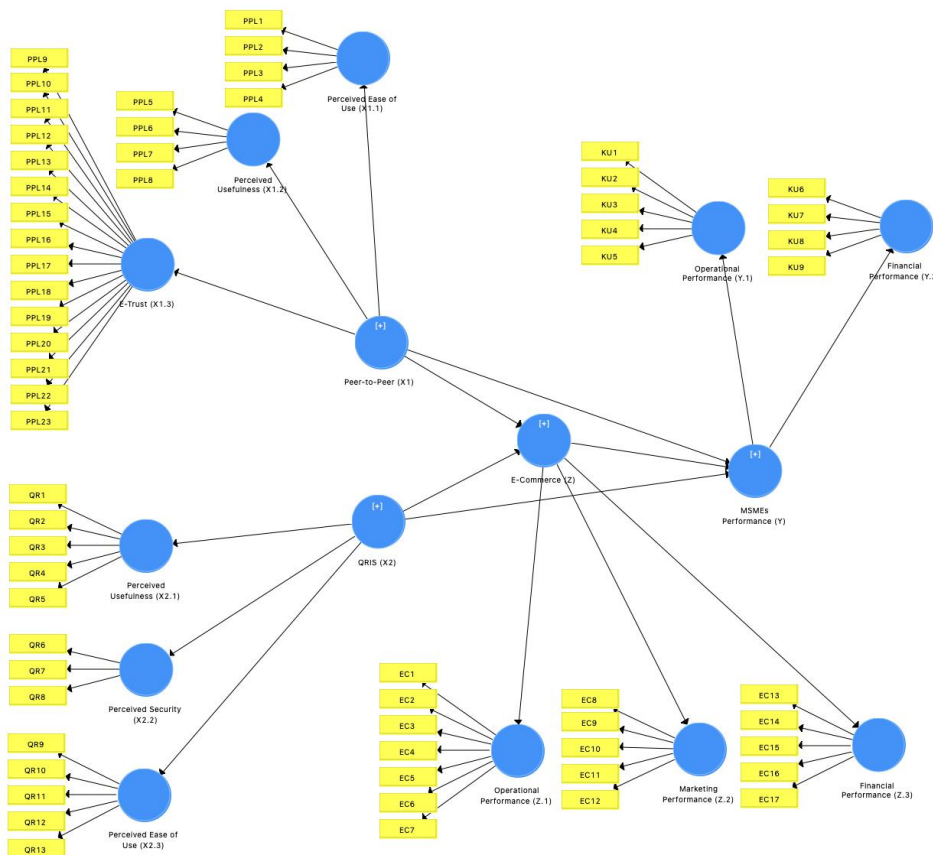

Figure 2. Conceptual Diagram of Partial Least Square (PLS) Model

Source: processed data (2024)

Inner model evaluation is an analysis to understand the relationship between constructs in research. The estimation of this relationship shows that the latent variable E-Commerce (Z) is influenced by Peer-to-Peer (P2P) Lending (X1) and QRIS (X2). In addition, MSME Performance (Y) is influenced by P2P Lending (X1), QRIS (X2), and E-Commerce (Z).

R-Square

Based on the test results with SmartPLS 4.0, the R Square results are as follows.

Table 2. R-Square

Endogen	R-*Square*	Strong Relationship
E-Commerce (Z)	0.364	*Moderate*
MSME *performance* (Y)	0.651	*Moderate*

Source: processed data (2024)

The test results using SmartPLS 4.0 produced an R-Square for the latent variable E-Commerce (Z) of 0.364, indicating that P2P Lending (X1) and QRIS (X2) affect E-Commerce by 36.4% with a moderate category. The rest, 63.6%, is influenced by other unmeasured factors. For MSME Performance (Y), the R-Square is 0.651, which means that P2P Lending (X1), QRIS (X2), and E-Commerce (Z) affect MSME Performance by 65.1%, also with a moderate category, while 34.9% is influenced by other factors.

F-Square

Table 3. F-Square

Impact	Effect Size	Rating
Peer-to-Peer (P2P) Lending (X$_1$) --> MSME *performance* (Y)	0.109	Small
QRIS (X$_2$) --> MSME *performance* (Y)	0.121	Small
E-Commerce (Z) --> MSME *performance* (Y)	0.329	Medium

Source: processed data (2024)

F-Square is used to measure how much influence the latent variable has on other constructs. Based on the test results, P2P Lending (X1) has a small influence on MSME Performance (Y) with an F-Square value of 0.109. QRIS (X2) also has a small influence on MSME Performance (Y) with an F-Square value of 0.121. E-Commerce (Z) has a moderate influence on MSME Performance (Y) with an F-Square value of 0.329.

Q-square Predictive Relevance

Q-square predictive relevance is used to measure how well a model can predict the results of observations. The calculation results show a Q-square of 0.778, which means this model has adequate predictive ability, because its value is greater than 0.

Hypothesis test

Table 4. Results of Path Coefficient, T-values, and P-Values

Impact	Path Coefficient (beta)	T-values	P-Values
X1 -> Y	0.257	2.954	0.003
X2 -> Y	0.275	2.894	0.004
Z -> Y	0.424	3.826	0.000
X1 -> Z -> Y	0.058	2.345	0.019
X2 -> Z -> Y	0.148	2.501	0.012

Source: processed data (2024)

The influence of variables on MSME performance was tested using the bootstrapping method with SmartPLS. The results show that Peer-to-Peer (P2P) Lending (X1) has a positive and significant influence on MSME Performance (Y), with a path coefficient (beta) of 0.257 and a t-value of 2.954 (p-value 0.003). Likewise, QRIS (X2) has a positive and significant influence on MSME Performance, with a beta of 0.275 and a t-value of 2.894 (p-value 0.004). E-Commerce (Z) also has a significant positive influence on MSME Performance with a beta of 0.424 and a t-value of 3.826 (p-

value 0.000). In addition, indirect effects were also analyzed. Peer-to-Peer (P2P) Lending (X1) has a positive and significant effect on MSME Performance through E-Commerce (Z), with a beta of 0.058 and a t-count of 2.345 (p-value of 0.019). QRIS (X2) also has a positive and significant effect on MSME Performance through E-Commerce, with a beta of 0.148 and a t-count of 2.501 (p-value of 0.012). All of these results indicate that E-Commerce plays an important mediating role in the relationship between P2P Lending, QRIS, and MSME Performance.

3.2 DISCUSSION

Analysis of Findings The results of this study demonstrate that digital financial innovations such as Peer-to-Peer (P2P) lending, QRIS, and e-commerce significantly impact MSME performance in Bandung City. The positive correlation between P2P lending and MSME performance is consistent with previous research by Mudmainah & Basuki (2023), where P2P lending was shown to increase productivity, marketing, and profitability. This is also in line with the findings of Syarifah (2019) and Harp et al. (2021) which show that P2P Lending can help MSMEs who have difficulty getting loans from traditional financial institutions. However, unlike some previous studies (Syarifah (2019), which found a non-significant relationship, our findings underscore the importance of fintech solutions in addressing financial accessibility challenges faced by MSMEs.

In terms of QRIS adoption, our findings align with Wardhani et al. (2023), illustrating that the use of QRIS enhances financial performance through improved transaction efficiency. This observation is supported by studies like Djoyo et al. (2022) and Usman et al. (2024), which emphasizes the importance of perceived ease of use and trust in the adoption of digital payment systems among MSMEs.

Additionally, this study highlights the intermediary role of e-commerce in enhancing MSME performance. The integration of P2P lending and QRIS through e-commerce platforms not only widens market access but also facilitates data-driven strategic decision-making. These findings are in line with those of Yacob et al. (2023) and Hussain et al. (2020), who highlighted the critical role of e-commerce in expanding business reach and improving customer engagement. The novelty of this study lies in its identification of e-commerce as a key mediator, which has not been extensively explored in previous studies.

Theoretically, this study contributes to the existing literature by offering a nuanced understanding of how fintech innovations, when integrated, can collectively boost MSME performance. This integration perspective offers a new dimension that extends beyond the isolated examination of individual fintech products, thus enriching the theoretical framework concerning MSME digitalization.

Practically, the results suggest that policymakers and MSME stakeholders should focus on promoting the adoption of integrated fintech solutions. P2P lending platforms should be designed with user-friendly interfaces and affordable terms to attract more MSME participation. Additionally, further enhancement of QRIS infrastructure and e-commerce platforms will be crucial in maximizing the benefits of fintech adoption for MSMEs. These insights can guide the development of tailored financial products that address the specific needs of MSMEs, ultimately improving their competitiveness and sustainability.

The primary limitation concerns the sample size and geographic scope, as the study was confined to MSMEs in Bandung City. This geographic focus may limit the generalizability of the findings to other regions with different economic and technological conditions. Future research should consider a broader geographic scope to validate these findings in different contexts.

Another limitation is the cross-sectional nature of the data, which only provides a snapshot of the phenomenon at a single point in time. Longitudinal studies would be beneficial in observing the long-term effects of fintech adoption on MSME performance. Additionally, while the study employed quantitative methods, a mixed-methods approach incorporating qualitative insights could provide a deeper understanding of the underlying mechanisms driving the observed relationships.

4. CONCLUSION

Research on MSMEs in Bandung City revealed that Peer-to-Peer (P2P) Lending has a significant influence on MSME performance. By providing easier and faster access to capital, P2P Lending enables MSMEs to expand their businesses, increase production, and optimize marketing strategies. Better access to funding sources helps MSMEs innovate and compete more effectively in a dynamic market. In addition, the implementation of the Quick Response Code Indonesian Standard (QRIS) also has a significant impact on MSME performance, by facilitating safe and efficient digital transactions. QRIS adoption increases customer trust and transaction convenience, and enables MSMEs to reach a wider market and improve operational efficiency.

Furthermore, it was found that P2P Lending and QRIS also contribute through e-commerce as an intervening variable. P2P Lending that encourages the use of e-commerce helps MSMEs utilize digital platforms to expand market share and increase competitiveness. Meanwhile, QRIS adoption facilitates digital transactions and encourages MSMEs to be more active in e-commerce, thereby strengthening their position in the digital market. The combination of financial technology and e-commerce adoption has an important role in improving the performance of MSMEs in the digital era, emphasizing the importance of technology integration in MSME business development.

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