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## The Impact of Mobile Payments on the Performance of SMEs Using the Technological, Organizational, and Environmental (TOE) Framework

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### ABSTRACT

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The presence of SMEs in the Indonesian economy has contributed to the country's economic development. The business world is now embracing innovations such as digital payment methods. The growth of mobile payments in Indonesia has been significant over time. The aim of this research is to examine the factors that influence mobile payment adoption in enhancing the performance of SMEs. This study focuses on the technology, organization, and environment contexts. Approximately 144 samples were collected and used as data for this research, targeting SMES in the Klaten region. The results of this study indicate that technological factors (Cost Effectiveness and Security Concern) have a positive impact on mobile payment adoption. However, organizational context, specifically Innovativeness, does not influence mobile payment adoption, while Entrepreneur Orientation has a positive impact on mobile payment adoption. Additionally, environmental factors (Competitive Pressure and External Support) positively influence mobile payment adoption. And, mobile payment adoption positively affects SMES performance. This research contributes valuable insights for SMES to integrate mobile payment into their businesses.

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## 1. INTRODUCTION

According to Law No. 20 of 2008 of the Republic of Indonesia concerning Micro, Small, and Medium Enterprises (MSMEs), MSMEs are independently owned productive economic entities with legal status, operating in industries, trade, and services. MSMEs have a high level of labor absorption, support regional development, and have the potential to grow into large enterprises (Chege et al., 2020). The contribution of MSMEs to Indonesia's GDP through business activities is substantial, with the vast number of MSMEs requiring the government to maintain this sector's stability. The MSME sector is a key driver of Indonesia's economy (T. Firza Faldani, Amri, 2023). This is further supported by the fact that MSMEs account for 96.92% of the Indonesian workforce and contribute 60.51% to GDP (KEMENKOPUKM).

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In Government Regulation No. 7 of 2021 concerning SMES Criteria, micro-enterprises are classified under the micro-business category, with the first criterion being that micro-businesses must have a maximum business capital of IDR 1,000,000,000, excluding land and buildings used for business operations. The second criterion is that micro-businesses must have a maximum annual turnover of IDR 2,000,000,000.

According to Irham Fahmi (2020), SMES performance analysis is conducted to assess how well a company performs by adhering to financial management principles. SMES performance is measured based on the potential growth and development of an organization's SMES using available resources. SMES performance is a metric used to evaluate and measure a company's SMES health based on its ability to generate profits (Soelaiman & Utami, 2021).

Digitization refers to the process of converting analog and noisy information into digital data, while digitalization describes the changes within organizations resulting from the increasing use of digital technology to enhance performance and expand the scope of operations (Aligarh & Nugroho, 2023). The business world is now embracing innovations such as digital payment methods (Morgan, 2019). Mobile payment, often known as m-Payment or m-wallet, is a digital payment method that utilizes technology on smartphones to expedite payment transactions. The growth of smartphone users in Indonesia, exceeding the number of active bank accounts, presents a significant opportunity for the widespread adoption of mobile payment systems. Consumers are increasingly inclined to conduct online transactions to reduce physical contact, thereby prompting MSMEs to adapt their payment methods to align with changing consumer behavior (Aprisca & Aligarh, 2024).

The development of mobile payments in Indonesia has experienced significant growth, as evidenced by the increasing number of users and digital payment transactions during 2017 and 2018 (Wahyudi & Yanthi, 2021). According to data from Bank Indonesia (BI), the value of digital payments, or electronic money, exceeded IDR 47.19 trillion in 2018. This amount increased nearly eightfold compared to the previous year's transactions, which amounted to around IDR 12.37 trillion. Before the pandemic, only 10% of the population used digital platforms; however, throughout 2020, user satisfaction increased by 44%, potentially indicating that user engagement will continue to grow. This information was reported by Neurosensum Indonesia Research (Houston, 2020).

Another survey was conducted by Ipsos in Southeast Asia (Saragih & Rikumahu, 2022). Based on the survey results, the general public more frequently used digital wallets than bank accounts when making online purchases. Among the most widely used digital wallet applications in Indonesia are ShopeePay, OVO, GoPay, DANA, and LinkAja. By the end of 2020, ShopeePay had become profitable and established itself as the most recognized digital payment method, with a usage rate of 34%. Following this, OVO accounted for 28%, GoPay for 17%, DANA for 14%, and LinkAja for 8%. A recent study conducted by InsightAsia, titled "Consistency That Leads: 2023 E-Wallet Industry Outlook," also revealed that digital payments have become the most popular payment method among the general public, compared to bank transfers and cash payments. The survey results show that 74% of respondents actively use digital platforms for various types of financial transactions (Saragih & Rikumahu, 2022).

The theory of technology adoption in mobile payment includes TAM. Based on TAM theory, mobile payment technology provides utility for users by speeding up payment transactions, enhancing payment effectiveness, and instilling confidence that mobile payment applications will bring benefits, thus tending to exhibit a positive attitude toward mobile payment usage (Wahyudi & Yanthi, 2021). Then there is UTAUT. Research conducted by (Saragih & Rikumahu, 2022) has contributed

theoretically by extending the UTAUT model with risk and cost. UTAUT develops a comprehensive theory based on a thorough review of dominant technology adoption models.

The Diffusion of Innovations (DOI) Theory explains that technology adoption is influenced by innovations spreading within organizations or among people over time. DOI theory plays a crucial role in enhancing adoption intent and actual adoption of a technology. Lastly, there's TOE, or Technological, Organizational, and Environmental, which is a common model or framework used to investigate several information system anomalies. According to (Lala Huwaida Mahirah, Kristina Sisilia, 2022) TOE is a working tool that can be used to understand technology adoption in the context of MSMEs.

This study is conducted to understand the implementation of mobile payments among SMEs in Indonesia and to determine whether it brings positive impacts on their business performance. The study will be based on the Technological Organizational Environmental (TOE) theory. The TOE Framework is chosen because research concludes that it is one of the commonly used theories in studying the adoption of technology within organizations. By leveraging the TOE framework, we will investigate the technological, organizational, and environmental contexts related to mobile payment adoption, thus impacting business performance.

## **Literature Review**

### ***Innovation Diffusion Theory***

The principle behind IT adoption is explained through the use of Rogers (2003) Diffusion of Innovations (DOI) paradigm, which describes a theory explaining IT adoption. The main goal of this theory is to accelerate the adoption and use of technical innovations. The diffusion of innovations theory, according to (Matias, J. B., & Hernandez, 2021) explains the diffusion mechanism of adoption patterns and further assists in predicting the success of technological innovations.

Since the diffusion of innovations theory and technology adoption models are considered appropriate models for predicting user interest in accepting new technologies. Nonetheless, due to its simplicity and ease of use, the technology adoption model is often used in studies of mobile service acceptance (Venkatesh, V. & Davis, 2000). Additionally, the predictive capability of the technology adoption model can be enhanced by adding new constructs. Information technology adoption, in general, has been studied using various forms of technology adoption extensions (Chen & Teng 2013) in (Houston, 2020).

The 4 elements of Diffusion of Innovations are as follows: Innovation Ideas, thoughts, messages, or meanings considered new by an individual or other adoption unit. Communication Channels: Means of communication used to receive messages from one person to another. Time: The decision process where individuals move from the first knowledge of an innovation to its adoption or rejection. Social System: A set of interrelated units engaged in joint problem-solving to achieve common goals (Houston, 2020).

### ***Technological Organizational Environmental Theory (TOE)***

The theoretical model used in this study is based on the Technological Organizational Environmental (TOE) framework. The most relevant theory to apply is TOE because this theory examines internal and external factors that influence the adoption of technological innovations (Lala Huwaida Mahirah, Kristina Sisilia, 2022). The TOE framework explains that the conditions of technological advancement, organizational structure, and the industrial environment influence the acceptability of an information system (Aligarh et al., 2023). The TOE framework has three main

contexts: technological context, organizational context, and environmental context. Technological Context: Refers to the current technology and the alignment of the latest technology with the company. Organizational Context: The scope and size of the organization relate to its organizational environment. Environmental Context: Pertains to the environment in which the company operates.

The TOE framework was chosen as the theoretical foundation for this study for several reasons: Relevance in the MSME Context: Examining adoption in the context of MSMEs is beneficial for the TOE framework. Strong Empirical and Theoretical Support: The TOE framework supports consistent empirical findings and has a clear theoretical foundation. High Explanatory Power: The explanatory strength of this framework is reinforced and enhanced because TOE aligns with other IT innovation theories at the organizational level. Comprehensive and Holistic: TOE is considered a comprehensive framework that can be applied to study IT adoption. Holistic Overview: The TOE framework provides a holistic overview of the elements driving IT adoption decisions, giving it an advantage over alternative adoption models in three contexts (technology, organization, and environment) (Sulaiman et al., n.d, 2021.).

### **Hypotheses Development**

The Technology context consists of Cost Effectiveness, which serves as a reference in decision-making processes regarding the balance between costs and the priority of selecting the optimal alternative (D. Quartey, Jonathan, 2022). By comparing outcomes and the costs incurred, one can analyze whether the use of technology falls into the category of effective or less effective. (Ardiansyah & Sawitri, 2021) state that cost effectiveness is considered one of the advantages. MSMEs lack the financial strength that large companies possess. Research conducted by (D. Quartey, Jonathan, 2022) indicates that cost effectiveness has a significant impact on mobile payment adoption. Similarly, the study by (Ardiansyah & Sawitri, 2021) shows that cost effectiveness significantly influences mobile payment adoption. Therefore, the hypothesis in this study is:

H1: Cost Effectiveness positively impacts Mobile Payment Adoption..

Security concerns, as stated by (Setiyani, L., & Rostiani, 202 C.E.), arise from companies' level of trust in technology to protect sensitive data, as well as potential issues such as viruses, hacking, and data breaches. A higher level of security reduces customers' worries about their private information, leading to increased customer satisfaction. The confidence that MSMEs have in mobile payment systems to safeguard their business information is what the researchers examine as a security issue. Research conducted by (Lala Huwaida Mahirah, Kristina Sisilia, 2022) shows that the technology variable, specifically security concerns, has a significant and positive impact on mobile payment adoption. This is supported by the study conducted by (Senyo et al., 2016), which found that security concerns positively influence mobile payment adoption. Therefore, the hypothesis in this study is:

H2: Security Concerns positively impact Mobile Payment Adoption

The Organizational Context consists of innovation. Innovation is how an MSME uses innovation for its business, starting from product launches, processes, and finding new ideas (Mahakittikun et al., 2020). A company can achieve extraordinary results if it continuously improves its innovation. Consequently, continuous improvement and process innovation within the company can lead to better firm performance (Beyhan Yasar, N., Sezen, B., & Karakadilar, 2019). Research conducted by (Mahakittikun et al., 2020) indicates that the innovation variable influences mobile

payment adoption. Similarly, the study by (Aprisca & Aligarh, 2024) finds that the innovation variable has a positive impact on mobile payment adoption. Therefore, the hypothesis in this study is:

H3: Innovation positively impacts Mobile Payment Adoption.

Entrepreneurial Orientation is a method used by managers to act entrepreneurially by supporting new ideas with their practices (Tajudeen, F. P., Jaafar, N. I., & Ainin, 2018). Developing a business through an entrepreneurial orientation strategy involves constantly innovating in product development, being bolder in business expansion, and not fearing the risks that may arise. In relation to technology, managers must act entrepreneurially to be prepared for responses from others due to open communication within the technology (Martínez-Núñez, M., & Pérez-Aguilar, 2014). Research conducted by (Tajudeen, F. P., Jaafar, N. I., & Ainin, 2018) found that entrepreneurial orientation positively influences mobile payment adoption. This finding is also supported (Chau, N. T., Deng, H., & Tay, 2021) and (Maroufkhani, P., Iranmanesh, M., & Ghobakhloo, 2022), who state that entrepreneurial orientation has a positive impact on mobile payment adoption. Therefore, the hypothesis in this study is:

H4: Entrepreneurial Orientation positively impacts Mobile Payment Adoption.

The Environmental Context consists of Competitive Pressure, which is the condition where companies compete in an environment where similar activities occur (Mahakittikun et al., 2020). Research by (Hou, B., Hong, J., & Zhu, 2019) shows that companies feel pressure from technological advancements and are forced to adopt technology to stay competitive. MSMEs tend to believe they can adopt innovations without external pressure from business partners or the government, focusing on innovation as the main driver, and the competitive pressure variable has a positive impact on mobile payment adoption. Research conducted by (Mahakittikun et al., 2020) shows that the Competitive Pressure variable influences mobile payment adoption. Similarly, research by (Aprisca & Aligarh, 2024) on external support shows a significant impact on mobile payment adoption. Therefore, the hypothesis in this study is:

H5: Competitive Pressure positively impacts Mobile Payment Adoption.

External Support refers to assistance during the process of adopting mobile payment (Mahakittikun et al., 2020). (Eze, S. C., Chinedu-Eze, V. C., Bello, A. O., Inegbedion, H., Nwanji, T., & Asamu, 2019) state that support from the government and payment providers can positively impact the sustainability of mobile payment systems and affect their business. With adequate external support for merchants during the use of mobile payments, merchants will benefit from this, resulting in better performance. Research conducted by (Mahakittikun et al., 2020) shows that the External Support variable influences mobile payment adoption. However, research by (Aprisca & Aligarh, 2024) on external support shows a negative impact on mobile payment adoption. Therefore, the hypothesis in this study is:

H6: External Support positively impacts Mobile Payment Adoption.

Mobile Payment can be defined as the use of mobile phones to facilitate payments from customers to businesses. To accept mobile payments from customers, companies must have a payment terminal or digital wallet (Mahakittikun et al., 2020). Research by (Kwabena, G. Y., Mei, Q., Ghumro, *The Impact Of Mobile Payment On The Performance Of Smes Using The Technology, Organization, And Environment (Toe) Framework* (Delia Eva Puspita, Frank Aligarh)

T. H., Li, W., & Erusalkina, 2021) states that mobile payment adoption positively impacts SMES Performance. Similarly, research by (Aprisca & Aligarh, 2024) on mobile payment adoption shows a significant impact on SMES performance. Therefore, the hypothesis in this study is:

H7: Mobile Payment Adoption positively impacts SMES Performance.

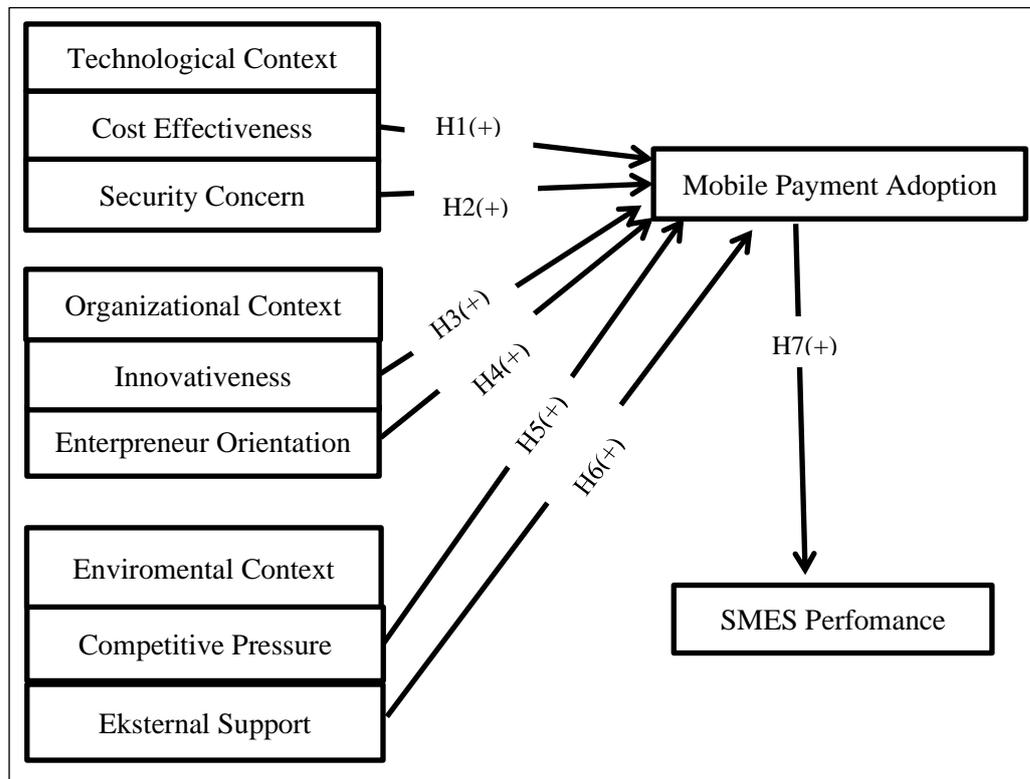


Figure 1: Schematic Diagram of the Study

## 2. METHOD

### Research Design

The type of research in this study is quantitative research conducted in Klaten. (Sekaran, U., & Bougie, 2017) define quantitative research as a scientific method where the data is numerical or can be processed and examined using mathematical or statistical calculations.

### Participants/Sample Selection and Data Sources

The data used in this research is primary data. According to (Sekaran, U., & Bougie, 2017), primary data is information collected by the researcher directly or indirectly about variables of interest for specific research purposes. The data sources were obtained by distributing questionnaires to SMES in the Klaten area, making mobile payment methods the object of this research.

### Instrumentation/Data Collection

The data collection method in this research is a questionnaire. According to (Sekaran, U., & Bougie, 2017), a questionnaire is a set of questions prepared by the researcher and then answered by the respondents. The questionnaire was distributed online using Google Forms and sent to the respondents, which were SMES in Klaten. The questionnaire was also distributed offline by giving it directly to SMES. The purpose of using the questionnaire method in this research is to process the data obtained and provide information to the researcher.

### Data Analysis/Estimating Model/Variable Measurement

Data analysis was conducted using SEM-PLS because this research aims to develop a new research model. To determine the influence of each TOE factor on the dependent variable, which is company performance (PERF), multiple regression analysis was used. Multiple regression can test the relationship between more than one independent variable and one dependent variable (Aprisca & Aligarh, 2024). In this research, the sampling technique is based on (Hair, et al, 2021), which states that the minimum sample size should be ten times the total number of variables or ten times the number of variables. A total of 144 samples were collected and used as data in this research.

### 3. RESULTS AND DISCUSSION

#### Results

Table 1 presents the demographic data of respondents in this study. It is evident from the table that many SMEs have not received accounting technology training from either the government or private sector (55%) compared to those who have received training (45%). The annual income varies, starting from less than 300 million (96%), 300 million - 500 million (3%), 500 million - 1 billion (0.7%), and the highest being more than 1 billion (0.7%).

In terms of operational duration, less than 1 year (37%) and the majority at 1-5 years (40%), with a smaller portion over 5 years (23%). The most commonly used mobile payment type is Shopeepay (41%), followed by Gopay (18%), LinkAja (5%), OVO (9%), and Dana (27%).

Table 1. Respondent Data

Characteristics	Category	Total	Percentage
Received Training on Accounting Technology Systems	Yes	65	45%
	No	79	55%
Annual Income	< 300 million	138	96%
	300 million – 500 million	4	3%
	500 million – 1 billion	1	0,7%
	>1 billion	1	0,7%
Years of Operation	<1 year	53	37%
	1 - 5 year	58	40%
	>5 year	33	23%
Types of Mobile Payments Used	Go-pay	44	18%
	Shopeepay	102	41%
	LinkAja	12	5%
	OVO	21	9%
	Dana	65	27%

(Source: Data analysis)

The results of validity and reliability testing show that all items are valid and meet the criteria. As seen in Table 2, the factor loading values of all items are above 0.7. Therefore, it can be concluded that all constructs in this study are reliable. Furthermore, the Average Variance Extract (AVE) values of each variable are above 0.5. This indicates that each indicator has sufficient reliability to measure its related variable.

Table 2. Validity and Reliability

Indicators	Factor Loading	AVE
<b>Cost Effectiveness</b>		
The use of Mobile Payment is more cost-efficient compared to other marketing strategies.	0,885	0,698
SMES can avoid unnecessary costs and time by using Mobile Payment.	0,778	
Mobile Payment saves time, effort, and costs.	0,839	
<b>Security Concerns</b>		
I am confident that Mobile Payment has a variety of security technologies to protect my personal information and transaction records.	0,894	0,750
Mobile Payment provides various high-level authentication methods before conducting transactions.	0,868	
Mobile Payment offers high-level confidentiality, with encryption and decryption adopted to protect the security of personal information.	0,835	
<b>Innovativeness</b>		
I feel confident that using Mobile Payment can advance my business.	0,720	0,537
I feel that using Mobile Payment is often seen as new by customers.	0,752	
I feel that Mobile Payment only has minor changes from the usual payment methods.	0,734	
I feel that using Mobile Payment often brings me into competition with new competitors.	0,726	
<b>Entrepreneur Orientation</b>		
To boost sales, we are ready to accept orders with high risks (tight deadlines, large quantities, and low profits).	0,820	0,643
Even though the cost of adopting mobile payment is high, we still use it.	0,782	
In handling orders, we are prepared to face changing situations.	0,802	
<b>Competitive Pressure</b>		
I believe that if I don't use Mobile Payment, I will lose customers.	0,887	0,794
I feel this is a strategic necessity to use Mobile Payment to compete in the market.	0,895	
<b>Eksternal Support</b>		
I feel that some of my competitors have started using Mobile Payment.	0,803	0,679
I believe my competitors are aware of the importance of using Mobile Payment and are using it for operations.	0,868	
My customers demand the use of Mobile Payment as a payment method.	0,799	
<b>Mobile Payment Adoption</b>		
My SMES or the SMES where I work uses Mobile Payment as a business management tool.	0,856	0,679
My SMES or the SMES where I work has fully adopted Mobile Payment.	0,825	
I feel that using Mobile Payment is very important for my business.	0,790	
<b>SMES Performance</b>		

The use of Mobile Payment reduces manual work such as money reconciliation and receipts.	0,738	0,591
The use of Mobile Payment reduces risk costs, such as errors in transaction recording.	0,715	
The use of Mobile Payment enhances customer service.	0,840	
The use of Mobile Payment speeds up customer queues during payments.	0,796	
The use of Mobile Payment makes transaction searching easier.	0,748	

(Source: Data analysis)

Table 3 presents the results of the discriminant validity test. This measurement indicates that the correlation between a variable and itself should not be smaller than the correlation with other variables. Thus, it can be concluded that discriminant validity has been achieved.

Table 3. Discriminant Validity

Variable	CS	SC	I	EO	CP	ES	MPA	SP
Competitive Pressure (CP)	0,891							
Cost Effectiveness (CS)	0,370	0,835						
Eksternal Support (ES)	0,716	0,423	0,824					
Entrepreneur Orientation (EO)	0,663	0,338	0,625	0,802				
SMES Perfomance (SP)	0,603	0,502	0,710	0,602	0,769			
Innovativeness (I)	0,446	0,582	0,500	0,507	0,434	0,733		
Mobile Payment Adoption (MPA)	0,647	0,559	0,672	0,657	0,694	0,533	0,824	
Security Concen (SC)	0,317	0,523	0,345	0,380	0,395	0,373	0,524	0,866

(Source: Data analysis)

Table 4 provides additional empirical evidence for the reliability test from the values of Cronbach's alpha and composite reliability.

Table 4. Cronbach-alfa and Composite Reliability

	Cronbach's Alpha	Composite Reliability
Competitive Pressure (CP)	0,740	0,885
Cost Effectiveness (CS)	0,784	0,874
Eksternal Support (ES)	0,763	0,864
Entrepreneur Orientation (EO)	0,722	0,844
SMES Perfomance (SP)	0,828	0,878
Innovativeness (I)	0,737	0,823
Mobile Payment Adoption (MPA)	0,763	0,864
Security Concen (SC)	0,835	0,900

(Source: Data analysis)

The testing results above indicate that all variables meet the criteria of  $>0.7$  for composite reliability and Cronbach's alpha. Therefore, it can be concluded that the measures used in this study have passed the reliability test. Table 6 below presents the path analysis in hypothesis testing:

Table 5. Structural Model Test

	Original Sample	T Statistic	p-values	Information
Cost Effectiveness -> Mobile Payment Adoption	0,204	2,621	0,009*	Supported
Security Concen -> Mobile Payment Adoption	0,178	2,759	0,006*	Supported
Innovativeness -> Mobile Payment Adoption	0,030	0,368	0,713	Not Supported
Entrepreneur Orientation -> Mobile Payment Adoption	0,024	2,678	0.008*	Supported
Competitive Pressure -> Mobile Payment Adoption	0,172	1,927	0,055**	Supported
Eksternal Support -> Mobile Payment Adoption	0,232	2,578	0,010*	Supported
Mobile Payment Adoption -> SMES Performance	0,694	16,535	0,000*	Supported

Notes: Significant at level \*5%, \*\* 10%

Based on the hypothesis testing results, it is evident that 6 out of 7 hypotheses are significantly supported. The only hypothesis rejected is H3, which states that Innovativeness does not affect mobile payment adoption (p-value 0.713). The Technology Context represented by H1 and H2 indicates that Cost Effectiveness and Security Concern positively influence mobile payment adoption. H4, representing the Organizational Context, also positively influences mobile payment adoption. Additionally, the Environmental Context represented by H5 and H6 shows that Competitive Pressure and External Support positively influence mobile payment adoption. Table 6 also includes H7, indicating that mobile payment adoption positively impacts SMES performance.

## Discussion

This research examines mobile payment adoption using the technology, organization, and environment contexts. It also employs the theory of diffusion of innovation to support H1 in the environmental context as a result of statistical analysis. H1 indicates that cost effectiveness has a positive impact on mobile payment adoption. This means that mobile payment is regarded as an efficient digital payment method that can be utilized by MSMEs to support their business transactions.

This study aligns with the research conducted by (D. Quartey, Jonathan, 2022), which shows that decision-making related to cost effectiveness positively influences mobile payment adoption. Compared to traditional media, digital payments offer lower-cost options and provide better tracking of transaction history, which can be used to generate financial reports. Additionally, digital payments facilitate financial reconciliation, allowing MSMEs to match their daily, weekly, or monthly revenues with their sales records.

For the technological factors, H2 states that security issues have a positive impact on mobile payment adoption. This means that MSMEs feel secure when adopting digital payment systems to run their businesses. Additionally, regarding the level of trust that MSMEs have in technology to protect sensitive company information amidst potential issues, previous studies emphasize the importance of security in adopting innovations.

For instance, research conducted by (Senyo et al., 2016) indicates that trust in data protection tends to have a positive influence on the use of mobile payment. Mobile payments implement several security measures to protect users from theft, fraud, or unauthorized access. These include data verification processes that require users to enter a verification code via SMS or email when logging in, the use of PINs or passwords, and monitoring activities so that any suspicious actions can lead to account blocking.

Regarding the organizational context, this research adopts variables from (Mahakittikun et al., 2020). Data analysis produced inconsistent findings, as evidenced statistically by the rejection of H3, which states that innovativeness does not influence mobile payment adoption. This hypothesis contrasts with (Mahakittikun et al., 2020), who reported a positive impact. This indicates that there are other payment methods that MSMEs find more comfortable to use. If mobile payment methods have already met users' basic needs, the motivation to adopt other technologies will be lower.

Meanwhile, H4 is based on research from (Noor et al., 2023), which found that entrepreneurial orientation does not significantly impact MSME performance. This result differs from H4, which indicates that entrepreneurial orientation positively influences mobile payment adoption. This implies that managers should possess qualities such as innovation, risk-taking, resilience, and creativity.

The belief that success comes from one's own efforts, along with high self-confidence and openness, can lead to increased sales. Entrepreneurs are capable of identifying opportunities, anticipating changes in future demand, formulating strategic actions to achieve goals, and following up on business execution. The primary function of high entrepreneurial orientation is to effectively measure and take risks.

Furthermore, in the environmental context, this study adopts variables from (Mahakittikun et al., 2020). The results of H5 indicate that competitive pressure also positively influences mobile payment adoption. This suggests that such pressure arises when businesses observe their competitors beginning to adopt new technologies. Compelling them to align with market demands.

In line with the research conducted by (Mahakittikun et al., 2020), competitive pressure has a positive impact on mobile payment adoption. High competitive pressure in adopting innovations can improve the performance of MSMEs, as MSME actors recognize the level of competition they must face to maintain good performance and avoid losing market share to other sellers. Therefore, the competitive pressure among MSMEs in Klaten is high.

H6 further shows that external support has a positive influence on mobile payment adoption. This hypothesis aligns with (Mahakittikun et al., 2020), which found that competitive pressure is positively related to mobile payment adoption and is the strongest predictor among environmental factors. MSME actors believe that they can adopt innovations, ensuring they do not fall behind other businesses and increasing their confidence in using new innovations.

Next, H7 indicates that mobile payment adoption positively influences firm performance. This aligns with the research by (Aprisca & Aligarh, 2024), which states that the integration of mobile payment systems has a transformative impact on MSMEs, leading to increased efficiency, reduced costs, and overall business performance improvement. The higher the application and understanding of mobile payment adoption among MSMEs in Klaten, the more significant the benefits. By enhancing their understanding and awareness of the advantages of mobile payment systems, MSMEs in Klaten can experience improved performance due to technological innovations in accounting.

The results indicate that nearly all hypotheses are supported, making the findings consistent with previous research. The only hypothesis that was rejected is H3, which stated that innovativeness does not influence mobile payment adoption. This finding corroborates the research of (Mahakittikun et al., 2020), which also revealed similar results. A possible explanation is that most respondents have alternative preferences regarding the adoption of mobile payment innovations.

#### 4. CONCLUSION

This study aims to develop a research model for SMES performance by adopting mobile payments using the contexts of technology, organization, and environment. The findings indicate that the technology context (Cost Effectiveness and Security Concern) positively influences mobile payment adoption. However, the organizational context shows that Innovativeness does not affect mobile payment adoption, whereas Entrepreneurial Orientation positively influences mobile payment adoption. Additionally, environmental factors (Competitive Pressure and External Support) positively influence mobile payment adoption. Lastly, mobile payment adoption positively impacts SMES performance.

This study has both theoretical and practical contributions. Theoretically, it offers a new research model to explain mobile payment adoption. Practically, it provides valuable insights for SMES to implement mobile payments in their operations. Like other studies, this research has several limitations that must be acknowledged. It does not delve deeply into the importance of understanding the latest technology, and the sample size in this study does not refer to official SMES data, which includes information on those already using mobile payment systems. The researcher could not find reliable data to serve as a benchmark for determining the sample size. Therefore, future research is recommended to use broader research objects or data beyond this study and highlight the importance of understanding technology for SMES advancement.

#### 5. REFERENCES

- Aligarh, F., & Nugroho, A. (2023). *Zakat , Infaq And Shadaqah ( Zis ) Digitalization : A Case Study Using Technology Organization Environment Framework*. 11(1), 78–95.
- Aligarh, F., Sutopo, B., & Widarjo, W. (2023). The Antecedents Of Cloud Computing Adoption And Its Consequences For Msmes ' Performance : A Model Based On The Technology-Organization- Environment ( Toe ) Framework The Antecedents Of Cloud Computing Adoption And Its Consequences For Msmes ' Performance. *Cogent Business & Management*, 10(2). <https://doi.org/10.1080/23311975.2023.2220190>
- Aprisca, D. P., & Aligarh, F. (2024). *Revolutionizing Msmes : The Impact Of Mobile Payment Readiness Through*. 1(1), 28–41. <https://doi.org/10.31603/itej.10657>
- Ardiansyah, M., & Sawitri, P. (2021). *Using Toe Framework To Analyze Factors Influencing Social Media Usage By Micro , Small And Medium Enterprises*. 6(2), 159–164. <https://doi.org/10.31572/inotera.vol6.iss2.2021.id160>
- Beyhan Yasar, N., Sezen, B., & Karakadilar, I. S. (2019). Mediating Effect Of Continuous Improvement On The Relationship Between Innovation And *The Impact Of Mobile Payment On The Performance Of Smes Using The Technology, Organization, And Environment (Toe) Framework (Delia Eva Puspita, Frank Aligarh)*

- Financial Performance. *Total Quality Management And Business Excellence*, 30, 893– 907. <https://doi.org/10.31289/jkbm.v7i1.4285>
- Chau, N. T., Deng, H., & Tay, R. (2021). A Perception-Based Model For Mobile Commerce Adoption In Vietnamese Small And Medium-Sized Enterprises. *Journal Of Global Information Management*, 29(1), 44–67. <https://doi.org/10.4018/jgim.2021010103>
- Chege, S. M., Wang, D., & Suntu, S. L. (2020). Impact Of Information Technology Innovation On Firm Performance In Kenya. *Information Technology For Development*, 26(2), 316–345. <https://doi.org/10.1080/02681102.2019.1573717>
- D. Quartey, Jonathan, L. G. N. (2022). *Economic Sustainability Of Mobile Money Payments In Ghana: Does A Tax On Transactions Matter?* 10(December), 112–131.
- Eze, S. C., Chinedu-Eze, V. C., Bello, A. O., Inegbedion, H., Nwanji, T., & Asamu, F. (2019). Mobile Marketing Technology Adoption In Service Smes: A Multi-Perspective Framework. *Journal Of Science And Technology Policy Management*, 10, 569–596. <https://doi.org/10.1108/jstpm-11-2018-0105>
- Hair, J. F., Jr., Hult, G. T. M., Ringle, C. M., Sarstedt, M., & Danks, N. P., & Ray, S. (2021). *Partial Least Squares Structural Equation Modeling (Pls-Sem) Using R: A Workbook* (P. 197). Springer Nature.
- Hou, B., Hong, J., & Zhu, R. (2019). Exploration/Exploitation Innovation And Firm Performance: The Mediation Of Entrepreneurial Orientation And Moderation Of Competitive Intensity. *Journal Of Asia Business Studies*, 13, 489 – 506. <https://doi.org/10.1108/jabs-11-2017-0206>
- Houston, D. D. (2020). Adopsi Penerimaan Digital Payment Pada Kalangan Milenial. *Medium*, 7(2), 55–67. [https://doi.org/10.25299/medium.2019.vol7\(2\).4094](https://doi.org/10.25299/medium.2019.vol7(2).4094)
- Kwabena, G. Y., Mei, Q., Ghumro, T. H., Li, W., & Erusalkina, D. (2021). Effects Of Atechnological-Organizational Environmental Factor On The Adoption Of The Mobile Payment System. *Journal Of Asian Finance, Economics And Business*, 8, 329–338. <https://doi.org/10.13106/jafeb.2021.vol8.no2.0329>
- Lala Huwaida Mahirah, Kristina Sisilia, R. S. (2022). *Analisis Toe Mempengaruhi Adopsi Media Sosial Jimea | Jurnal Ilmiah Mea ( Manajemen , Ekonomi , Dan Akuntansi )*. 6(3), 176–194.
- Mahakittikun, T., Suntrayuth, S., & Bhatiasevi, V. (2020). *The Impact Of Technological-Organizational-Environmental ( Toe ) Factors On Fi Rm Performance : Merchant ' S Perspective Of Mobile Payment From Thailand ' S Retail And Service Fi Rms. September*. <https://doi.org/10.1108/jabs-01-2020-0012>

- Maroufkhani, P., Iranmanesh, M., & Ghobakhloo, M. (2022). Determinants Of Big Data Analytics Adoption In Small And Medium-Sized Enterprises (Smes). *Industrial Management And Data Systems*. <https://doi.org/10.1108/Imds-11-2021-0695>
- Martínez-Núñez, M., & Pérez-Aguilar, W. S. (2014). Efficiency Analysis Of Information Technology And Online Social Networks Management: An Integrated Dea-Model Assessment. *Information And Management*, 51, 712–725. <https://doi.org/10.1016/j.im.2014.05.009>
- Matias, J. B., & Hernandez, A. A. (2021). Cloud Computing Adoption Intention By Msmes In The Philippines. *Global Business Review*, 22, 612–633. <https://doi.org/10.1177/0972150918818262>
- Noor, R., Helmi, M., & Rezekiah, A. (2023). *Internal Terhadap Kinerja Perusahaan Furniture Di Kota Banjarbaru Kalimantan Selatan Entrepreneurship Orientation Analysis And Internal Resources To The Performance Of Furniture Companies In The City Of Banjarbaru , South Kalimantan*. 06(2), 307–315.
- Purwantini, A. H., Hidayati, L. L. A., & Aligarh, F. (2024). The Influence of Organizational Readiness on e-Commerce Adoption and Its Impact on Micro-enterprises Performance. In *E3S Web of Conferences* (Vol. 500, p. 05001). EDP Sciences.
- Saragih, Y. W., & Rikumahu, B. (2022). Analisis Faktor Adopsi E-Wallet Gopay, Ovo, Dan Dana Dengan Model Utaut2 Pada Masyarakat Jawa Barat. *Nominal Barometer Riset Akuntansi Dan Manajemen*, 11(1), 98–121. <https://doi.org/10.21831/Nominal.V11i1.43075>
- Sekaran, U., & Bougie, R. (2017). *Metode Penelitian Untuk Bisnis: Pendekatan Pengembangan-Keahlian*. Salemba Empat.
- Senyo, P. K., Effah, J., & Addae, E. (2016). Preliminary Insight Into Cloud Computing Adoption In A Developing Country. *Journal Of Enterprise Information Management*, 29(4), 505–524. <https://doi.org/10.1108/Jeim-09-2014-0094>
- Setiyani, L., & Rostiani, Y. (202 C.E.). Analysis Of E-Commerce Adoption By Smes Using The Technology-Organization-Environment (Tooe) Model: A Case Study In Karawang, Indonesia. *International Journal Of Science*. <https://doi.org/http://ijstm.inarah.co.id>
- Soelaiman, L., & Utami, A. R. (2021). *Faktor-Faktor Yang Mempengaruhi Adopsi Media Sosial*. 5(1), 124–133.

- Sulaiman, E., Handayani, C., & Widyastuti, S. (N.D.). *Transformasi Digital Technology-Organization- Environment ( Toe ) Dan Inovasi Difusi E-Business Untuk Umkm Yang Berkelanjutan : Model Konseptual*. 51–62.
- T. Firza Faldani, Amri, J. (2023). *Faktor-Faktor Yang Mempengaruhi Kontribusi Umkm Dalam Pdb Indonesia*. 8(3), 147–157.
- Tajudeen, F. P., Jaafar, N. I., & Ainin, S. (2018). Understanding The Impact Of Social Media Usage Among Organizations. *Information And Management*, 55, 308–321. <https://doi.org/10.1016/j.im.2017.08.004>
- Venkatesh, V. & Davis, F. . (2000). A Theoretical Extension Of The Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*. *Four Longitudinal Field Studies*. *Management Science*, 186–204.
- Wahyudi, B., & Yanthi, M. D. (2021). *Penerimaan Teori Tam Terhadap Penggunaan Mobile Payment Dengan Kompatibilitas Sebagai Variabel Eksternal*. 15(1), 55–72.