

Adoption of Digital Technology in Micro, Small, and Medium Enterprises (MSMEs): Integration of Innovation Diffusion Theory and Resource-Based View (RBV) Theory (A Case Study on MSMEs in Surakarta City)

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ABSTRAK: Penelitian ini fokus pada adopsi teknologi digital Usaha Mikro Kecil dan Menengah (UMKM) di Kota Surakarta, dengan fokus pada penggunaan media sosial, aplikasi kasir, dan digital payment. Berdasarkan teori difusi inovasi dan teori resource-based view (RBV), penelitian menggunakan teknik purposive sampling untuk mengumpulkan data dari 145 UMKM melalui kuesioner dan menganalisis data menggunakan regresi logistik dengan SPSS25.

Hasil penelitian menunjukkan bahwa *direct selling* tidak berpengaruh pada penggunaan aplikasi kasir dan digital payment, tetapi berpengaruh positif pada penggunaan media sosial. *Onlinepay other/competitive pressure* berpengaruh positif terhadap penggunaan media sosial, aplikasi kasir dan digital payment. *Owner fund/kepemilikan dana* oleh pemilik UMKM berpengaruh positif pada penggunaan media sosial, tetapi tidak berpengaruh pada penggunaan aplikasi kasir dan digital payment. *Technology user/awareness* berpengaruh positif pada penggunaan media sosial, tetapi tidak berpengaruh pada penggunaan aplikasi kasir dan digital payment. *Konektivitas internet* berpengaruh positif pada penggunaan media sosial, tetapi tidak berpengaruh pada penggunaan aplikasi kasir dan berpengaruh negatif terhadap digital payment. *Akses permodalan* berpengaruh positif terhadap penggunaan media sosial, aplikasi kasir dan digital payment. Penelitian ini memberikan wawasan tentang faktor-faktor yang memengaruhi adopsi teknologi digital oleh UMKM, yang penting untuk pengembangan strategi dan kebijakan yang mendukung pertumbuhan sektor UMKM dalam perekonomian.

Kata Kunci: *Direct Selling, Onlinepay Other/Competitive Pressure, Owner Fund/Kepemilikan Dana, Technology User/Awareness, Konektivitas Internet, dan Akses Permodalan, Penggunaan Media Sosial, Penggunaan Aplikasi Kasir, Penggunaan Digital Payment.*

ABSTRACT: This research focuses on the adoption of digital technology in Micro, Small and Medium Enterprises (MSMEs) in the City of Surakarta, with a focus on the use of social media, cashier applications and digital payments. Based on the diffusion of innovation theory and resource-based view (RBV) theory, the research used purposive sampling techniques to collect data from 145 MSMEs through questionnaires and analyzed the data using logistic regression with SPSS25.

The research results show that *direct selling* has no effect on the use of cashier and digital payment applications, but has a positive effect on the use of social media. *Onlinepay other/competitive pressure* has a positive effect on the use of social media, cashier applications and digital payments. *Owner funds/ownership of funds* by MSME owners has a positive effect on the use of social media, but has no effect on the use of cashier and digital payment applications. *Technology user/awareness* has a positive effect on the use of social media, but has no effect on the use of cashier and digital payment applications. *Internet connectivity* has a positive effect on the use of social media, but has no effect on the use of cashier applications and has a negative effect on digital payments. *Access to capital* has a positive effect on the use of social media, cashier applications and digital payments. This research provides insight into the factors influencing the adoption of digital technology by MSMEs, which is important for the development of strategies and policies that support the growth of the MSME sector in the economy.

Keywords: *Direct Selling, Onlinepay Other/Competitive Pressure, Owner fund/financial, Technology User/Awareness, Internet Connectivity, and Access to Capital, Use of Social Media, Use of Cashier Applications, Use of Digital Payment.*

1. INTRODUCTION

The development of Information and Communication Technology (ICT) has significantly transformed life, particularly in managing accounting information systems. Rapid global advancements have enhanced information exchange, enabled electronic commerce, and improved system efficiency (Haneem et al., 2019). Computer-based Accounting Information Systems are now crucial for managing accurate financial data, benefiting both large companies and Micro, Small, and Medium Enterprises (MSMEs) (Haneem et al., 2019). However, MSMEs face challenges in adopting digital technology, especially regarding digitization (Siregar et al., 2021). This study explores the adoption of digital tools such as social media, point-of-sale applications, and digital payment systems by MSMEs in Surakarta City, which play a vital role as the backbone of Indonesia's economy (Aligarh et al., 2023). The widespread use of the internet has simplified transactions that previously required face-to-face meetings, allowing transactions to be conducted effortlessly through gadgets, the internet, and applications (Aisiyah et al., 2023). Technological advancements also impact various aspects of life, including philanthropy (Aligarh et al., 2023).

Despite numerous studies on technology adoption in large businesses, research on digital technology use in MSMEs remains limited. Previous studies, such as those by Widanengsih (2021) and Hari et al. (2018), focus on ICT advancements in large companies but do not adequately address the specific challenges faced by MSMEs. This gap includes insufficient evaluation of digital technology adoption in MSMEs, particularly regarding social media, point-of-sale applications, and digital payments. This study aims to fill this gap by investigating the factors influencing digital technology adoption in MSMEs and its impact on business performance improvement.

The primary objective of this study is to evaluate how factors such as direct selling, competitive pressure, funding ownership, technology awareness, internet connectivity, and capital access affect the adoption of social media, point-of-sale applications, and digital payments in MSMEs (Pamungkas et al., 2022; Najib & Fahma, 2020). Additionally, the study aims to assess the impact of digital technology adoption on operational efficiency and MSME performance, offering insights for developing policies and strategies to support MSME digital transformation.

By employing a comprehensive theoretical framework, this research will demonstrate that while MSMEs face constraints like limited funds and technology awareness, certain factors can significantly influence the effective adoption and use of digital technology (Haneem et al., 2019). The study is expected to identify key factors in digital technology adoption in MSMEs and provide recommendations for enhancing support and implementation in this sector. The Theory of Innovation Diffusion, introduced by Everett M. Rogers (1962), explains how new ideas or products spread and are accepted within a social system, while the Resource-Based View (RBV) theory, developed by Wernerfelt (1984), highlights the importance of internal resources in creating competitive advantage. This research applies these theories to analyze how variables like direct selling, competitive pressure, funding ownership, technology awareness, internet connectivity, and capital access influence digital technology adoption by MSMEs, offering a deeper understanding of digital technology adoption in this sector (Ndubuisi et al., 2017; Prayogo & Ratmono, 2022).

2. METHOD

To achieve the research objectives, an exploratory research design was used, focusing on owners or managers of micro and small enterprises (MSEs). The study targeted businesses that significantly utilize digital technology in their processes, such as social media, point-of-sale applications, and digital payment. Surakarta, Indonesia,

was chosen due to its large and diverse population of MSEs, with relatively few businesses adopting these technologies. The sample included industries such as food and beverage, retail, and others, selected using purposive sampling.

Descriptive statistics were used to describe the demographics of the respondents, including industry type, position, and gender. A variant-based logistic regression approach was applied to measure the relationships between these variables, and SPSS25 was used for theory development. The study included three dependent variables: *social media use*, *point-of-sale application use*, and *digital payment use*, as well as seven independent variables: *direct selling*, *onlinepay other/competitive pressure*, *owner fund*, *technology user/awareness*, *internet connectivity*, and *access to capital* (Trinugroho et al., 2022).

3. RESULT AND DISCUSSION

3.1 Result

Table 1. Respondent Profile

Description	Category	Number	Percentage (%)
Industry Classification	Food and Beverage	95	65,5%
	Retail	40	27,6%
	Etc.	10	6,9%
Position/Job Title	Owner	55	37,9%
	Manager	90	62,1%
Gender	Male	45	31%
	Female	100	69%

This study gathered a total of 145 respondents. Table 1 shows that 65.5% of the MSME respondents are engaged in the food and beverage sector, while 27.6% are in retail, and 6.9% are involved in other types of businesses. Additionally, 37.9% of the MSME respondents serve as owners, while 62.1% are managers. Unlike previous studies in this field, the sample consists of more females than males.

3.2 Structural Model

Model 1:

$$\text{Ln} \frac{MS}{1 - MS} = \alpha + \beta_1 DS + \beta_2 OO/CP + \beta_3 OF/KD + \beta_4 TU/A + \beta_5 KI + \beta_6 AP + e$$

Model 2:

$$\text{Ln} \frac{PAK}{1 - PAK} = \alpha + \beta_1 DS + \beta_2 OO/CP + \beta_3 OF/KD + \beta_4 TU/A + \beta_5 KI + \beta_6 AP + e$$

Model 3:

$$\text{Ln} \frac{PDP}{1 - PDP} = \alpha + \beta_1 DS + \beta_2 OO/CP + \beta_3 OF/KD + \beta_4 TU/A + \beta_5 KI + \beta_6 AP + e$$

Table 3. Hypothesis Test

No	Variable Name	Estimate	Wald	Sig.	Description
1	<i>Direct Selling -> Use of Social Media</i>	2,724	4,536	0,033	H2a (Accepted)

No	Variable Name	Estimate	Wald	Sig.	Description
2	<i>Direct Selling -> Use of Point-of-Sale Applications</i>	0,003	0,000	0,996	H2b (Accepted)
3	<i>Direct Selling -> Use of Digital Payment</i>	0,011	0,001	0,980	H2c (Accepted)
4	<i>Onlinepay Other/Competitive Pressure -> Use of Social Media</i>	3,307	5,387	0,020	H3a (Accepted)
5	<i>Onlinepay Other/Competitive Pressure -> Use of Point-of-Sale Applications</i>	2,568	8,061	0,005	H3b (Rejected)
6	<i>Onlinepay Other/Competitive Pressure -> Use of Digital Payment</i>	2,729	4,921	0,027	H3c (Rejected)
7	<i>Owner Fund/Financial Ownership -> Use of Social Media</i>	3,546	6,373	0,012	H4a (Accepted)
8	<i>Owner Fund/Financial Ownership -> Use of Point-of-Sale Applications</i>	0,144	0,030	0,861	H4b (Rejected)
9	<i>Owner Fund/Financial Ownership -> Use of Digital Payment</i>	0,960	1,961	0,161	H4c (Rejected)
10	<i>Technology User/Awareness -> Use of Social Media</i>	6,902	9,443	0,002	H5a (Accepted)
11	<i>Technology User/Awareness -> Use of Point-of-Sale Applications</i>	-263	0,022	0,883	H5b (Rejected)
12	<i>Technology User/Awareness -> Use of Digital Payment</i>	-2,016	0,936	0,333	H5c (Accepted)
13	<i>Internet Connectivity -> Use of Social Media</i>	3,078	5,385	0,020	H6a (Accepted)
14	<i>Internet Connectivity -> Use of Point-of-Sale Applications</i>	0,176	0,043	0,836	H6b (Accepted)
15	<i>Internet Connectivity -> Use of Digital Payment</i>	-2,676	4,927	0,026	H6c (Accepted)
16	<i>Access to Capital -> Use of Social Media</i>	0,975	4,134	0,042	H2a (Accepted)
17	<i>Access to Capital -> Use of Point-of-Sale Applications</i>	0,551	9,863	0,002	H2b (Accepted)
18	<i>Access to Capital -> Use of Digital Payment</i>	0,430	11,786	0,001	H2c (Accepted)

The research finds that direct selling positively impacts social media use among SMEs in Surakarta, as it aligns with the diffusion of innovation theory. Direct selling enhances customer interaction and market reach, boosting social media use. However, it does not affect the adoption of cash register applications or digital payments, which are driven more by operational needs and consumer preferences.

Market competition and online payment systems positively influence the adoption of social media, POS applications, and digital payments. Competitive pressure encourages SMEs to leverage these technologies to improve visibility and efficiency. These findings align with the diffusion of innovation theory and previous research by

Trinugroho *et al.*, (2022), which highlights the positive effects of competitive pressure on technology adoption.

Owner funds positively affect social media use, allowing SMEs to invest in digital marketing strategies. However, these funds do not significantly influence the adoption of cashier applications or digital payments, which are more affected by operational needs and customer preferences. This supports Trinugroho *et al.*, (2022), indicating that owner funds do not always impact the use of these technologies.

Technology user awareness positively influences social media use, consistent with the diffusion of innovation theory. However, it does not affect the adoption of cashier applications or digital payments, which depend more on operational needs and infrastructure. These results align with Trinugroho *et al.*, (2022), showing that awareness alone does not drive the adoption of these technologies.

Internet connectivity positively impacts social media use but does not affect cashier application adoption. Surprisingly, high connectivity is negatively correlated with digital payment adoption due to concerns about transaction reliability and infrastructure issues. These findings align with Trinugroho *et al.*, (2022), demonstrating that strong internet connectivity supports social media use but not necessarily digital payments or cashier applications.

Access to capital positively impacts the adoption of social media, cashier applications, and digital payments. Greater financial resources enable SMEs to invest in digital marketing and advanced technologies, enhancing business efficiency and reach. This supports the Resource Based View (RBV) theory and Trinugroho *et al.*, (2022), highlighting the role of capital in technology adoption.

4. CONCLUSION

Based on the data analysis regarding the influence of various factors such as direct selling, onlinepay other/competitive pressure, owner fund, technology user/awareness, internet connectivity, and access to capital on the use of social media, point-of-sale applications, and digital payment among MSMEs in Surakarta, it can be concluded that several factors have a significant positive impact on technology adoption by MSMEs. Specifically, onlinepay other/competitive pressure and access to capital have been shown to play a crucial role in driving the adoption of social media, point-of-sale applications, and digital payment.

Conversely, internet connectivity has a positive effect on social media usage but a negative effect on the use of digital payment. This indicates that while good connectivity supports social media presence, there are challenges with digital payment utilization that may require further attention.

This study has some limitations, such as difficulties in identifying and contacting MSMEs willing to participate and variations in the definitions of micro and small enterprises. These limitations affect the scope and representativeness of the collected data. For future research, it is recommended that alternative data sources be explored and consultations with relevant parties be conducted to obtain more consistent definitions of business categories. These steps will help broaden the sample coverage and enhance the accuracy of the research findings, providing deeper insights into the factors influencing technology use among MSMEs.

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