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Analysis of Digital Literacy and the Readiness of MSMEs in Setupatok Village in Facing Digital Transformation

Abdul Robi Padri*, Ridho Ahmad Taupik, Jelita Nurul Aini, Daffa Alifan Farhan
Politeknik Siber Cerdika Internasional, Indonesia
Coresponding Author: ridhoahmadtaupik@gmail.com

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ABSTRACT

Background: Micro, small, and medium enterprises (MSMEs) account for most business units and employment in Indonesia, yet many traditional micro-enterprises in rural areas have not benefited from digital transformation. **Objective:** This study aims to analyze the level of digital literacy and digital-transformation readiness of traditional MSMEs in Setupatok Village, Mundu District, Cirebon Regency, and to identify the factors hindering technology adoption. **Method:** A descriptive qualitative design supported by simple descriptive tabulation was employed. Fifteen MSME actors engaged in culinary, grocery, and spice businesses were selected through purposive sampling. Data were collected through face-to-face structured interviews using ten digital-literacy statements on an agreement scale and open-ended questions, analysed using the Miles and Huberman interactive model, and interpreted through the Technology Readiness Index (TRI) and the Technology Acceptance Model (TAM). **Results:** Most respondents expressed disagreement or neutrality towards using digital features such as Google Maps and digital payments such as QRIS. The main barriers were limited devices and internet access, low technological skills, doubts about the security of non-cash transactions, and the absence of continuous mentoring. Conclusion: The digital literacy of traditional MSMEs in Setupatok Village remains at a basic level; continuous practice-based mentoring is therefore required to achieve optimal digital readiness.

INTRODUCTION

The use of digital technology encourages MSME actors to transform into digital MSMEs, both from Micro, Small, and Medium Enterprises so that things such as marketing, distribution, transactions, and business decision-making refer to digital matters (Kraus et al., 2022). In the context of the industrial revolution 4.0, the digitalization of MSMEs is an important strategy to increase competitiveness, expand market access, and maintain business continuity when physical interaction is limited, to a decrease in purchasing power. Efficiency, productivity, and business growth opportunities increase with MSME actors utilizing digital media, the internet, and information technology (Prihandono et al., 2024).

This study focuses on traditional MSMEs, which are often overlooked in national digitalization statistics. In such enterprises, digital adoption is frequently constrained by the lack of digital tools such as mobile phones, difficulties in operating technology (locally referred to as *gaptek*, or technological illiteracy), and hesitancy towards digital payment

methods (Hamzah Muchtar et al., 2024; Omrani et al., 2024). These constraints indicate that digital transformation at the village level cannot be understood solely through aggregate national indicators; it requires an examination of the actual conditions faced by micro-enterprise actors in the field. Globally, digital transformation has become a key determinant of the competitiveness of small businesses; however, the OECD reports that the digital gap between smaller and larger firms has widened inequalities among people, places, and firms, and that the benefits of digitalization risk accruing mainly to early adopters (OECD, 2021).

In Indonesia, MSMEs number approximately 64.2 million units, contribute 61.07% of gross domestic product, and absorb 97% of the national workforce ((Indonesia, 2021). Nevertheless, the national digital literacy index reached only 3.54 on a five-point scale in 2022, with the digital safety pillar recording the lowest score of 3.12 (Kadata, 2022). These data indicate that the large economic contribution of MSMEs has not yet been matched by adequate digital capability, particularly among micro-enterprises in rural areas. The advancement of digital technology requires MSME actors to have basic skills in using technology. However, not all MSME actors can follow these changes, especially those in rural areas (Morris et al., 2022).

Preliminary observations of 15 MSME actors in Setupatok Village indicated that some business actors do not have adequate digital devices, have difficulty using technology, and lack confidence in implementing digital payments. This condition suggests that low digital literacy and limited access to technology remain the main obstacles in the digitalization of village MSMEs. This situation makes the present study urgent: without an empirical picture of village-level digital literacy and readiness, digitalization assistance programmes risk being designed without reference to the actual needs and capabilities of traditional micro-enterprise actors.

A number of previous studies have confirmed that digital literacy plays an important role in determining the readiness of MSMEs to face digital transformation. Suwarni et al., (2019) stated that low digital literacy and human resource skills are the main obstacles for MSMEs in taking advantage of digital economy opportunities. Research by Hanim, L. et.al, (2022) also revealed that the digitalization of MSMEs can increase business competitiveness, but its implementation is still constrained by the readiness of business actors to understand and use digital technology. More recent studies have examined the challenges and strategies of rural MSME digitalization in Malang Regency Meinarto, (2025) and the readiness of MSMEs to face the digital economy.

These findings show that the digital transformation of MSMEs does not depend only on the availability of technology but is strongly influenced by the level of digital literacy, experience, and mentoring support that is in accordance with the characteristics of business actors at the village level. However, most of these studies describe barriers in general terms and have not explicitly interpreted the readiness of traditional village traders through technology-readiness and technology-acceptance frameworks.

Digital literacy is a person's ability to understand, use, and utilize digital technology appropriately and responsibly (Hussain & Phulpoto, 2024). This ability is not only related to the technicalities in using digital devices, but also includes an understanding of information, digital security, and the use of digital technology to support economic activities. If digital literacy is still low, it can cause MSMEs to be unprepared to face digital transformation. In

the Indonesian national framework, digital literacy is assessed through four pillars, namely digital skills, digital ethics, digital safety, and digital culture (Kadata, 2022).

Setupatok Village, which is located in Mundu District, Cirebon Regency, has a variety of micro-scale MSME actors, such as culinary businesses, grocery stores, and spice traders. Preliminary observations of 15 MSME actors conducted by the research team indicated that most of these businesses are still run in traditional ways and have not made the most of digital technology; spice and basic food traders in particular still face real technical obstacles. The use of social media and digital payment systems is still relatively low, so business development opportunities have not been fully utilized. This village-level pattern reflects the broader national challenge of MSME digitalization reported by the Ministry of Cooperatives and SMEs (Indonesia, 2023).

Based on these conditions, this study aims to determine the level of digital literacy of MSME actors in Setupatok Village, to assess the extent of their readiness to apply digital technology in daily business activities, and to identify the main obstacles, such as device limitations and technological understanding, that hinder their digital transformation. Accordingly, this study addresses three research questions: (1) What is the level of digital literacy of MSME actors in Setupatok Village? (2) How ready are village MSMEs to face digital developments? (3) What factors hinder the application of digital technology in MSMEs in rural areas?

This research is expected to provide benefits both academically and practically. Theoretically, it enriches the literature on digital literacy and the readiness of rural MSMEs for digital transformation by applying the TRI and TAM frameworks to traditional village enterprises. Practically, the results can serve as a consideration for village governments, MSME assistants, and policymakers in developing digital literacy programmes that match real field conditions. The main implication is that digitalization assistance for village MSMEs should be designed on the basis of the readiness profile of business actors rather than as uniform, one-way socialization.

The novelty of this research lies in three aspects. First, it focuses on traditional micro-enterprises at the village level, such as spice vendors, grocery stores, and food stalls, which are often excluded from national digitalization statistics. Second, unlike previous rural MSME studies that describe digitalization barriers in general terms (Meinarto, 2025), this study interprets digital literacy and readiness through the combined lens of the Technology Readiness Index (TRI) and the Technology Acceptance Model (TAM). Third, it integrates questionnaire tabulation with interview data obtained directly at the respondents' business premises, thereby providing a contextual picture of the challenges and needs of MSMEs in Setupatok Village. The results are therefore expected to serve as a reference for developing digital-based MSMEs in rural areas.

Based on the field conditions found and the support of previous research results, this study specifically focuses on the study on digital literacy and digital transformation readiness of micro MSMEs at the village level, with a case study in Setupatok Village. This research emphasizes the real condition of traditional MSME actors who still face various limitations in the use of digital technology, both in terms of devices, understanding, and trust in digital technology. The contribution of this research lies in providing an empirical picture based on

field data regarding the level of digital literacy, readiness, and obstacles faced by rural MSMEs in facing digital transformation.

By focusing on micro-MSMEs at the village level and using field data from 15 business actors, this study emphasizes the importance of digital literacy and the readiness of human resources in supporting the digital transformation of MSMEs. Therefore, this research is expected not only to complement the findings of previous research, but also to be a reference for future research and for stakeholders in formulating digital-based MSME development strategies that are in accordance with the characteristics of rural areas.

METHOD

This study employed a qualitative method with a descriptive approach, supported by simple descriptive tabulation of the questionnaire responses. The tabulation was not intended for statistical generalization but to describe response patterns that were subsequently interpreted qualitatively, consistent with descriptive designs that combine quantitative description and qualitative interpretation(Creswell, 2018). This approach was used to describe the state of digital literacy, the development of digital MSMEs, and the readiness of MSME actors to transform their businesses into digital MSMEs. The analysis was based on data collected directly from the field.

This research was conducted in Setupatok Village, Mundu District, Cirebon Regency, West Java. The study involved 15 MSME actors selected using purposive sampling(Sugiyono, 2022), with the following criteria: (a) owners or managers who directly run a micro-enterprise operating in Setupatok Village; (b) businesses representing the main local business types; and (c) willingness to be interviewed. The respondents represented several types of microenterprises, including spice vendors, prepared-food vendors, grocery stores, food stalls, and frozen-food businesses. Primary data were collected using a structured interview questionnaire.

The interview questionnaire consisted of the following sections:

a. Profile data: Name, age, highest level of education completed, and type of business.
b. Digital literacy indicators: Ten statements rated on a five-point agreement scale (Strongly Disagree, Disagree, Neutral, Agree, and Strongly Agree), covering the use of digital devices, social media, digital maps (Google Maps), digital payments (QRIS and bank transfers), and digital promotion.
c. Open-ended questions: Questions concerning business constraints, the need for digital assistance, and future expectations.

Data were collected through face-to-face interviews with all respondents using structured questionnaires. This method was employed to obtain primary data and ensure that each question was clearly understood by the MSME actors. The interviews were conducted at the respondents' respective business premises, allowing the researcher to gain a direct understanding of their business conditions and observe the circumstances in the field.

The research process began with preparatory activities, including the development of research instruments and the selection of respondents. Subsequently, the researcher collected data through face-to-face interviews with 15 MSME actors. After data collection was completed, the data were checked for completeness before being processed and analyzed.

The final stage involved presenting the analytical results and drawing conclusions based on the field findings.

The data were analyzed using descriptive analysis. Responses from the 15 questionnaires were tabulated to identify response patterns and facilitate further analysis. The predominance of disagreement and neutral responses was examined to identify and classify the obstacles encountered by MSME actors in Setupatok Village when adopting digital technology. The level of digital literacy was categorized on the basis of the dominant response pattern: a predominance of Strongly Disagree, Disagree, and Neutral responses was interpreted as a basic level, whereas a predominance of Agree and Strongly Agree responses was interpreted as an adequate level.

This study employed the interactive model proposed by Miles and Huberman, which comprises three stages: data reduction, data display, and conclusion drawing and verification ((Miles et al., 2014). This model was used to support the systematic analysis of the collected data and ensure that the findings remained grounded in the research context (Arifin & Kohar, 2022; Indonesia, 2021). To examine the readiness of MSME actors to adapt to technological developments and digitalization, the findings were interpreted using the Technology Readiness Index (TRI) (Parasuraman & Colby, 2015), which comprises four constructs: optimism, innovativeness, discomfort, and insecurity.

The first two constructs serve as drivers of technology readiness, whereas the latter two represent inhibitors. Because the TRI was not administered as a separate measurement scale, it was applied as an interpretive coding framework: responses to the questionnaire, open-ended questions, and interviews were classified into the four constructs (for example, difficulties in operating technology were coded as discomfort, and doubts about the security of non-cash transactions were coded as insecurity). In addition, the Technology Acceptance Model (TAM) proposed by Davis (1989), which posits that technology acceptance is influenced by perceived usefulness and perceived ease of use, was used as a second interpretive lens.

Responses concerning the benefits of digital technology for business were related to perceived usefulness, whereas responses concerning difficulties in operating digital devices and applications were related to perceived ease of use.Research ethics were observed throughout the study. Respondents were informed of the purpose of the research, participated voluntarily, and gave their consent before the interviews. Their identities are kept confidential and are not disclosed in this article.

RESULTS AND DISCUSSION

Results

The results of the questionnaire show that, although MSME actors are generally aware of the existence of digital technology, their obstacles lie in the operational and strategic stages. This finding is in line with Suwarni et al., (2019), who stated that the obstacle to the development of micro businesses in the digital era lies not in limited opportunities but in low digital literacy and human resource skills in the use of information technology. This means that general awareness has not yet translated into an understanding that digital technology is essential for increasing business competitiveness; only a few MSME actors have reached this understanding. The trigger for this low digital literacy is the lack of access to relevant training

and the inability of business actors to manage and analyze data systematically (Desviona et al., 2025; Suwarni et al., 2019).

The digital literacy condition of MSME actors is generally still at the operational stage, not yet at the broader strategic stage. Only a small number of MSME actors are able to use digital devices, utilize social media, and use digital payment methods such as bank transfers; for the majority, basic digital skills are still inadequate. These findings are in line with previous research, which confirms that although the potential of the digital economy is huge, MSME actors face major challenges in the form of technology literacy and sustainable assistance. Although a small number of MSME actors have developed their businesses towards digital practices, these skills have not been developed optimally at the managerial level, such as branding and marketing planning.

This can be seen from the fact that there are still many MSMEs that do not have a clear brand identity (logo), have not been registered on digital platforms such as Google Maps, do not have modern product packaging, and have not carried out digital promotions in a planned and sustainable manner. Thus, it can be concluded that the digital literacy of MSMEs is stronger in the ability to use basic technology, but has not developed optimally in terms of planning, branding, and digital marketing strategies. In fact, the integration of digital platforms is very helpful so that business locations are easy to find for potential customers, such as the integration of MSMEs using Google Business (Harahap et al., 2021; N et al., 2020).

The results of the questionnaire show that the low utilization of digital technology is one of the reasons for the limited technological facilities owned by MSME actors. Some respondents said that they do not have adequate devices, such as smartphones with stable internet access. On the other hand, there are MSME actors who have digital devices, but have not been able to use them optimally to support business activities. This condition shows that the ownership of digital devices has not been automatically followed by the ability to use technology productively.

In addition to the limitations of devices, the results of the questionnaire show that there are doubts among MSME actors about the use of digital payment systems. Some respondents still feel less confident in the security of non-cash transactions such as QRIS. This concern encourages MSME actors to continue using cash transactions because they are considered safer and easier to understand. Thus, the results of the questionnaire illustrate that MSME digital barriers are not only technical but also related to trust and understanding of digital technology. This concern arises because MSME actors feel less confident in the privacy of digital transactions and prefer to use traditional payment methods that are considered to have lower risks.

The results of the interviews conducted directly provided a more in-depth explanation of the questionnaire's findings. Based on the interview, it is known that most MSME actors find it difficult to use digital technology because they are not used to it and lack previous experience. Some MSME actors also said that age factors and traditional business habits are the main reasons they are reluctant to try digital technology which is considered complicated and risky. The barriers identified from the questionnaire, open-ended questions, and interviews are summarized in Table 1, together with their interpretation in terms of the TRI and TAM constructs used in this study.

Table 1. Barriers to digital adoption among MSME actors in Setupatok Village

Barrier category	Description of field findings	Related TRI/TAM construct
Devices and internet access	Some respondents do not own adequate smartphones with stable internet access.	External condition that lowers perceived ease of use (TAM)
Skills and experience	Difficulty operating technology, lack of habit and prior experience, and age-related reluctance.	Discomfort (TRI); low perceived ease of use (TAM)
Trust and security	Doubts about the security and privacy of non-cash transactions such as QRIS; preference for cash.	Insecurity (TRI)
Perceived benefits	Digital technology is regarded as an additional tool without a direct impact on sales.	Low perceived usefulness (TAM); limited optimism (TRI)
Managerial and strategic capability	No logo as brand identity, no Google Maps registration, non-modern packaging, and unplanned digital promotion.	Low innovativeness (TRI)
Mentoring and training	No continuous guidance; general socialization without hands-on practice.	Reinforces discomfort (TRI) and low perceived ease of use (TAM)

Source: Field data (questionnaires and interviews), processed by the authors.

Discussion

The results of the study show that MSME actors in Setupatok Village are still at the basic level in digital literacy. An analysis of 15 respondents revealed that the majority of business actors showed a disagreement or neutral attitude towards the ability to use digital technology to support their businesses. This reflects the limited understanding and skills of MSME actors in the use of digital devices. Many respondents said that they did not have adequate facilities such as mobile phones with internet access, while others admitted that they had problems in using technology because they were not used to it or felt that they were lacking in technology.

This low level of digital literacy has a direct impact on readiness to transform digitally. Findings in the field show that most MSME actors do not have the readiness to utilize digital platforms such as Google Maps or non-cash payment systems such as QRIS. In addition, the analysis of open-ended questions reveals several main problems faced by MSME actors, such as the lack of digital facilities, low understanding of the functions of digital technology, uncertainty about the security of non-cash payment methods, and lack of continuous guidance.

When interpreted through the TRI framework (Parasuraman & Colby, 2015), the readiness of MSME actors in Setupatok Village is shaped more strongly by inhibitors than

by drivers. Difficulties in operating digital devices, lack of habit, and age-related reluctance reflect the discomfort dimension, whereas doubts about the security and privacy of QRIS transactions reflect the insecurity dimension. Conversely, the driver dimensions remain weak: optimism about the benefits of technology is limited, and innovativeness is visible only among the small number of actors who already use bank transfers or social media. This configuration explains why ownership of digital devices does not automatically lead to productive use, as reported in the Results.

The results of the interviews show that MSME actors do not fully understand the long-term benefits of the use of digital technology. Some respondents considered that the use of digital technology did not have a direct impact on increasing sales. This view shows that digital technology is still considered an additional tool, not an important part of the business development strategy. This is in line with the findings of the questionnaire which showed the low use of digital media for promotional and marketing activities.

From the TAM perspective (Davis, 1989), this view indicates low perceived usefulness, while the difficulties in operating digital devices indicate low perceived ease of use; together, these perceptions explain the relatively low level of technology adoption. This finding differs from that of Hanim, L., et.al, (2022), who emphasized that digitalization can increase MSME competitiveness: in Setupatok Village, such benefits have not yet been perceived by business actors, suggesting that the potential benefits of digitalization need to be demonstrated concretely before they can drive adoption.

In addition, the results of the interviews show that the lack of mentoring and training is a factor that strengthens the low readiness of MSME actors in facing digital transformation. MSME actors stated that they have not received continuous guidance on the use of digital technology. General socialization activities without being followed by direct practical assistance cause MSME actors to experience difficulties in implementing digital technology independently. Therefore, these findings confirm that increasing the digital literacy of MSMEs requires a sustainable approach and in accordance with the conditions and capabilities of business actors at the village level.

This finding is consistent Suwarni et al., (2019), who highlighted low digital literacy and human resource skills. It also echoes the challenges of rural MSME digitalization examined by Meinarto, (2025) in Malang Regency. The present study, however, adds that among traditional village enterprises, the inhibiting factors are dominated by discomfort and insecurity rather than by a lack of business opportunities. Therefore, direct practice-based training and intensive mentoring according to the needs of partners are needed to increase the digital literacy of MSME actors. Some possibilities for collaborative problem-solving to create local economic independence in the digital era are to use a community participation-based approach, such as the formation of learning communities or "Smart Villages" (Fuadi et al., 2021; Satriana et al., 2026).

Overall, this study confirms that MSME actors in Setupatok Village are still in the early stages of the digital transformation process. Although in the digital economy era, MSMEs are required to adapt in order to increase competitiveness, expand market share, and increase business efficiency, conditions on the ground show that readiness for digital transformation still requires time and appropriate policy support. Therefore, a sustainable digital mentoring, education, and training program is needed, not just one-way socialization. With this support,

it is hoped that MSME actors will not only know digital technology, but also be able to use it effectively in their business activities to achieve optimal digital readiness.

CONCLUSION

This study concludes that the digital literacy of traditional MSME actors in Setupatok Village remains at a basic level and that their readiness for digital transformation is still low. Although business actors are generally aware of digital technology, few recognize its strategic importance, and most respond with disagreement or neutrality to the use of digital features such as Google Maps and QRIS. Readiness is constrained mainly by limited devices and internet access, discomfort in operating technology, insecurity regarding non-cash transactions, and the absence of continuous mentoring. These findings imply that village and regional governments should provide practice-based mentoring, including branding and Google Maps registration, rather than relying on one-way socialization. Future research should involve larger samples across several villages and evaluate the effectiveness of digital mentoring programmes on micro-enterprise turnover.

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CONFLICT OF INTEREST

The authors declare that this work was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

AUTHOR CONTRIBUTIONS

The contributions of each author are described using the Contributor Roles Taxonomy (CRediT) as follows. **Abdul Robi Padri:** Conceptualization, Methodology, Investigation, Formal analysis, Writing original draft. **Ridho Ahmad Taupik:** Conceptualization, Methodology, Supervision, Writing review & editing. **Jelita Nurul Aini:** Investigation, Data curation, Formal analysis, Writing original draft. **Daffa Alifan Farhan:** Investigation, Data curation, Visualization, Writing review & editing.

All authors have read and approved the final version of the manuscript and agree to be accountable for all aspects of the work.

GENERATIVE AI STATEMENT

The authors declare that generative AI was used in the preparation of this manuscript solely to refine language clarity and grammatical structure. Generative AI was not used to generate research data, analyse data, interpret findings, or produce references. All AI-assisted text was reviewed and edited by the authors, and its use adhered to established ethical guidelines on the use and disclosure of generative AI in scholarly research. Each author has made substantial intellectual contributions to the work, which has been rigorously checked for accuracy, and the authors take full responsibility for the integrity and final content of the manuscript.

REFERENCES

Arifin, A., & Kohar, K. (2022). Kesiapan Umkm Menghadapi Digitalisasi. *Jurnal Ilmiah Ekonomi Manajemen: Jurnal Ilmiah Multi Science*, *13*(1), 11–23. Https://Doi.Org/10.52657/Jiem.V13i1.1729

Desviona, N., Masruroh, M., Dewi, L. S., & Yasin, A. (2025). Peningkatan Literasi Digital Dan Analisis Data Umkm Melalui Pelatihan Spss Bagi Wirausaha Muda. *Kreatif : Jurnal Pengabdian Masyarakat Nusantara*, *5*(2).

Fuadi, D. S., Akhyadi, A. S., & Saripah, I. (2021). Systematic Review: Strategi Pemberdayaan Pelaku Umkm Menuju Ekonomi Digital Melalui Aksi Sosial. *Diklus: Jurnal Pendidikan Luar Sekolah*, *15*(1), 1–13.

Hamzah Muchtar, E., Trianto, B., Maulana, I., Alim, M. N., Marasabessy, R. H., Hidayat, W., Junaedi, E., & Masrizal. (2024). Quick Response Code Indonesia Standard (Qris) E-Payment Adoption: Customers Perspective. *Cogent Business & Management*, *11*(1). Https://Doi.Org/10.1080/23311975.2024.2316044

Hanim, L., Soponyono, E., & Maryanto, M. (2022). *Development Of Digital Msmes During The Covid-19 Pandemic.*

Harahap, H. S., Dewi, N. K., & Ningrum, E. P. (2021). Pemanfaatan Digital Marketing Bagi Umkm. *Journal Of Community Services In Humanities And Social Sciences*, *3*(2).

Hussain, N., & Phulpoto, S. (2024). Digital Literacy: Empowering Individuals In The Digital Age. *Assyfa Learning Journal*, *2*(2), 70–83. Https://Doi.Org/10.61650/Alj.V2i2.231

Indonesia, K. (2021). *Umkm Menjadi Pilar Penting Dalam Perekonomian Indonesia*.

Kadata Insight Center Kominfo. (2022). *Status Literasi Digital Di Indonesia 2022*.

Kraus, S., Durst, S., Ferreira, J. J., Veiga, P., Kailer, N., & Weinmann, A. (2022). Digital Transformation In Business And Management Research: An Overview Of The Current Status Quo. *International Journal Of Information Management*, *63*, 102466. Https://Doi.Org/10.1016/J.Ijinfomgt.2021.102466

Meinarto, D. P. (2025). Analisis Tantangan Dan Strategi Digitalisasi Umkm Di Daerah Perdesaan: Studi Pada Umkm Di Kabupaten Malang. *Jurnal Transparan Stie Yadika Bangil*, *17*(1), 104–114.

Miles, M., Huberman, A., & Saldana, J. (2014). *Qualitative Data Analysis*.

Morris, J., Morris, W., & Bowen, R. (2022). Implications Of The Digital Divide On Rural Sme Resilience. *Journal Of Rural Studies*, *89*, 369–377. Https://Doi.Org/10.1016/J.Jrurstud.2022.01.005

N, R. J., Wardhana, M. W., Haryanto, R., & Pebriyanto, A. (2020). Penerapan Digital Marketing Sebagai Strategi Pemasaran Umkm. *Jurnal Impact : Implementation And Action*, *2*(2).

Oecd. (2021). *The Digital Transformation Of Smes*. Https://Doi.Org/10.1787/Bdb9256a-En

Omrani, N., Rejeb, N., Maalaoui, A., Dabić, M., & Kraus, S. (2024). Drivers Of Digital Transformation In Smes. *Ieee Transactions On Engineering Management*, *71*, 5030–

5043. Https://Doi.Org/10.1109/Tem.2022.3215727

Parasuraman, A., & Colby, C. L. (2015). An Updated And Streamlined Technology Readiness Index. *Journal Of Service Research*, *18*(1), 59–74. Https://Doi.Org/10.1177/1094670514539730

Prihandono, D., Pandu Wijaya, A., Wiratama, B., Prananta, W., & Widia, S. (2024). Digital Transformation To Enhance Indonesian Sme Performance: Exploring The Impact Of Market Competition And Digital Strategy. *Problems And Perspectives In Management*, *22*(2), 103–113. Https://Doi.Org/10.21511/Ppm.22(2).2024.09

Satriana, D., Daulay, M. A., & Merliana, T. (2026). Transformasi Digital Umkm : Penguatan Strategi Pemasaran Dan Sdm Untuk Meningkatkan Daya Saing Di Era 5.0. *Jurnal Pembelajaran Pemberdayaan Masyarakat (Jp2m)*, *7*(10), 247–256. Https://Doi.Org/10.33474/Jp2m.V7i1.24559

Suwarni, E., Sedyastuti, K. (2019). Peluang Dan Hambatan Pengembangan Usaha Mikro Pada Era Ekonomi Digital. *Journals.Upi-Yai.Ac.Ide Suwarni, K Sedyastuti, Ah Mirzaikraith-Ekonomika, 2019•Journals.Upi-Yai.Ac.Id*.