Annals of Human Resource Management Research (AHRMR)
ISSN: 2774-8561, Vol 5, No 1, 2025, 169-182 https://doi.org/10.35912/ahrmr.v5i1.2854

Empowering MSMEs in South Sumatra: The role of digital transformation

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Article History
Received on 1 May 2025
1st Revision on 9 May 2025
2nd Revision on 11 May 2025
Accepted on 18 May 2025

Abstract
Purpose: This study aimed to examine the relationship between resilience and sustainability of culinary MSEs through digital transformation in South Sumatra Province.
Research Methodology: Sample selection with criteria, namely respondent had been having business for at least 5 years, had passed fluctuating conditions such as surviving covid conditions, rising inflation, monetary policy and so on. The number of samples was 130 MSEs, which were local culinary businesses. Knowing the relationship of each variable X to variable Y was tested using *structural equation Modelling* (SEM-PLS) analysis.
Results: This study found a resilience relationship with digital transformation of 0.834 anda sustainability relationship with digital transformation of 0.400. The relationship between resilience and digital transformation was stronger than that between sustainability and digital transformation. The main cause was that MSEs lacked long-term commitment, and it was difficult for them to grow in dynamic environmental and social conditions while also focusing on profits. Digital transformation in MSEs was defensive rather than supporting holistic sustainability, limited sustainable resources simultaneously, and integrated with digital transformation. Therefore, MSE actors need to be educated, trained, and given guidance in changing mindset and social behavior for the long-term sustainability of MSEs.
Limitations: The study was limited to culinary MSEs in South Sumatra and used non-probability sampling, which may have affected generalizability.
Contribution: This study revealed that resilience had a stronger influence than sustainability in driving digital transformation among culinary MSEs.
Novelty: This study offers a novel perspective by integrating resilience and sustainability in analyzing digital transformation within culinary MSEs.
Keywords: *Digital Transformation, Micro and Small Enterprises, Resilience, Sustainability*
How to Cite: Hermawati, L., Pusvita, E., Khairunnisa, D., & Putri, A. K. (2025). Empowering MSMEs in South Sumatra: The role of digital transformation. *Annals of Human Resource Management Research,* 5(1), 169-182.

1. Introduction

Micro and Small Enterprises (MSEs) played an important role in the Indonesian economy because they were able to absorb a large workforce and make a significant contribution to the national Gross Domestic Product (GDP) (Sofyan, 2017; Tasyim et al., 2021). However, MSEs were also vulnerable to global economic turmoil such as the Covid- 19 pandemic, which had the potential to disrupt the

sustainability of their business (Bai et al., 2021; Donal et al., 2022). Furthermore, there is an increase in inflation that has the potential to reduce purchasing power and suppress MSE income (Tan & Zevaya, 2024). Indonesia's inflation in April 2022 was recorded at 3.55% (yoy) (BPS, 2022a), which was a challenge for MSEs in maintaining business continuity. The World Bank estimated that Indonesia's inflation rate in 2024 would be around 3.7% (Bank, 2022), abovethe normal inflation target of 3.5%±1%. The Global Food Crisis, which had led to an increasein the price of raw food materials at the global level, had the potential to reduce the competitiveness of MSEs because production costs were getting more expensive (Dewi et al., 2023; Jati et al., 2021) and MSEs had limited access to capital, which were generally still difficult to obtain funding from various parties. In aggregate, these conditions become obstacles to digital transformation to improve resilience and sustainability (Endris & Kassegn, 2022; Kumara et al., 2020; Suardi & Nugroho, 2024).

One way to increase the resilience and sustainability of MSEs is to carry out digital transformation (Pablos & Anshari, 2024). Digital transformation allows MSEs to adapt to the dynamics of the modern business environment using digital technology (Jundrio et al., 2023). Various studies mention that digital transformation has the potential to increase the competitiveness of MSEs by expanding markets, increasing productivity, andoptimizing financial and resource management (Santiago et al., 2022; Siregar & Sudarmanto, 2023).

However, there were many challenges that MSEs faced in carrying out digital transformation, especially MSEs engaged in the culinary sector, including limited capital to invest in the development of digital technology, lack of skills and digital literacy of workersand MSE owners, uneven digital technology infrastructure, especially in regions, the mindsetof MSE owners who were still traditional and reluctant to adapt to digital trends, and weak government support in the form of mentoring, training, and funding for MSEs (Tsabita Khwarazmita, 2024).

South Sumatra was one of the provinces in Indonesia that had a significant number of culinary MSEs but had not fully utilized the potential of digital transformation. Based on datafrom the Ministry of Cooperatives and Small and Medium Enterprises, in 2022, the number of MSEs engaged in the culinary sector in South Sumatra reached 45,232 business units or 16.5% of the total MSEs in the province (Komenkop, 2022). Despite the large number, the level of digitalization of South Sumatra's culinary MSEs was still low. A survey of MSE digitalisation by the Indonesian E-Commerce Association (idEA) in 2021 showed that only 25.6% of culinary MSEs in South Sumatra had websites and advertise products online. Therest are still unfamiliar with the benefits of social media and e-commerce in improving business (idEA, 2021).

In addition, based on data obtained online through digital platforms from the Central Bureau of Statistics of South Sumatra Province, the total sales turnover of culinary MSEs in South Sumatra was only about 10 %. The other 90% still cames from conventionaloffline saled (BPS, 2022b). This shows the great potential of South Sumatra's culinary MSEs in utilizing digital transformation to increase competitiveness and business income. Sustainable interventions are needed to improve the digitalization capacity of MSEs in the province.

Various studies have been conducted starting from the Covid-19 condition, where the condition of the UMK was very concerning. It was difficult to survive in conditions where everything was limited to interactive activities. Putritamara et al. (2023)and Aiawani and Noviaiawan (2023) examined the influence of the dynamics of capabilities and digital transformation on MSME Resilience. Digital transformation has become an important strategy carried out by Chinese companies (Wang & Chen, 2022). Meanwhile, according to the study Astuty, Sudirman, and Aryanto (2024) uncover strategies for resilience and sustainability in maximizing the strength of small businesses in the digital era. This study showed that there was an alignment of resources from the internal side and responsive strategies that can build a resilient strategy and continuity that can be shown from reorientation, life, sustainability, and synergy in micro businesses. In addition, a study of the influence of digital transformation on MSME Resilience in the 5.0 era of Palembang City was conducted to gain knowledge about the level of digital user adoption in MSMEs (Putri, Mirani, et al., 2023). While previous studies have explored

the roles of resilience and sustainability separately in relation to digital transformation, few have simultaneously examined how both factors interact and influence digital transformation, particularly within the context of culinary MSEs in South Sumatra. Moreover, most existing research focuses on general MSME conditions or urban settings, lacking a detailed analysis of rural or region-specific culinary sectors. This study addresses this gap by integrating resilience and sustainability perspectives to comprehensively assess their relationship with digital transformation among culinary MSEs in South Sumatra. Therefore, this study aims to measure the relationship between resilience, sustainability, and digital transformation in MSEs engaged in the culinary sector in South Sumatra to produce policy recommendations in strengthening the resilience and sustainability of MSEs through digital transformation. Thus, it was hoped that inclusive and sustainable economic development would be created.

2. Literature review

2.1. Theoretical Foundation

This research was based on several core theories, namely, business resilience theory, business sustainability theory, and technology adoption theory. According to Sheffi and Rice (2005), this theory explains that business resilience is very important in facing various disruptions and fluctuations in the business environment. Resilience allows companies to quickly adapt, recover, and maintain their business performance amidst various pressures. Some key concepts in business resilience theory include (1) resilience, namely the ability to absorb disruptions without experiencing structural damage and business functions. (2) Flexibility: The ability to adapt to change quickly through business process innovation. (3) Preparedness for responding to various possible risk scenarios. (4) Supply chain coordination to ensure the continuity of operations during a crisis.

Conceptually, this theory is relevant to determine how resilience (independent variable) affects the competitiveness of MSMEs through digital transformation (dependent variable). Resilience and flexibility are key factors in the success of MSMEs competing in the digital era. Thus, business resilience theory was the right basis for understanding this article in depth (Sheffi, 2005). Meanwhile, the theory of business sustainability according to Elkington (2013), namely this theory, can be used to examine the implementation of sustainable business practices in MSMEs. According to this theory, business sustainability not only prioritizes profit but must also pay attention to people (social) and the planet (environment) or the 3P concept. This concept was then known as the triple bottom line, which was the basis for the growth of sustainable business practices. This theory explains that business sustainability requires a balance between economic, social, and environmental aspects to survive in the long term. Specifically for small businesses, sustainable business practices can include: (1) paying attention to social impacts by empowering the surrounding community. (2) Maintaining the environment by reducing waste and emissions. (3) Optimizing resource management for long-term cost efficiency. This theory is relevant to understanding the influence of sustainability practices (independent variables) in determining the competitiveness of MSMEs through digital transformation (dependent variables).

The theory of technology adoption (Rogers et al., 2003), namely the theory of technology adoption of a technological innovation by individuals or organizations, proceeds in stages, namely: (1) Innovator (2.5%): Pioneers were quick to try new technologies. (2) Early adopters (13.5%): Opinion leaders who play an important role in the diffusion process. (3) Early majority (34%): A cautious group that tended to follow the majority. (4) Late majority (34%): A skeptical group that only joined after adoption became mainstream. (5) Laggard (16%): The last to adopt because they were most reluctant to change. This theory is relevant to understanding the level and factors of digital transformation adoption among MSEs as research subjects. By studying the path of technology diffusion, efforts to increase digital adoption in MSEs can be optimized.

2.2. Previous Research

Historically, this research was also based on several previous studies, including Iswanto, Zainal, Murodov, El-Ebiary, and Sattarova (2022), who examined the Digital Transformation of SMEs in a

developing country during the COVID-19 pandemic. This study analyzed the digital transformation of MSEs during the Covid-19 pandemic in Indonesia as a developing country. The background was the impact of the pandemic, which forced MSEs to switch to digital platforms. The results show that the level of adoption of MSE digital technology, such as social media and websites, was relatively low. The main challenges were limited human resources and digital literacy. However, the pandemic played a role as an early pioneer in the digital transformation of MSEs. Continuous support is needed to improve the digital capabilities of MSEs in the future. This study is useful for understanding the process of digital transformation of MSEs in developing countries during the global pandemic. Goonawardena, Surangi, and Ranwala (2023) assessed the impact of digital transformation on SME performance. The results of the analysis show that digital transformation significantly improves improvement of financial and nonfinancial performance. The dimensions of digital product and service transformation had a positive impact on sales and profit growth. Digital business process transformation had a positive impact on increasing productivity and customer satisfaction. Thus, it was estimated that digital transformation could increase the competitiveness and sustainability of MSEs.

Nurfadilah, Samidi, and Daryanto (2023) and Zamani, Smyth, Gupta, and Dennehy (2023) researched how SMEs develop digital resilience: a multi-dimensional framework. The results produced a multidimensional digital resilience framework consisting of five important dimensions: connectivity, flexibility, anticipation, learning capabilities, and collaboration. These dimensions have been proven to play a role in building MSE Resilience against digital disruption. This study contributes to developing a comprehensive digital resilience framework for MSEs. The implementation of this framework is expected to increase the digital resilience of MSEs in the future. Agarwal, Mathiyazhagan, Malhotra, and Pimpunchat (2023) researched business digital transformation under environmental uncertainty: an organizational learning perspective, sustainability. The results showed that explorative and exploitative learning play an important role in improving a company's digital transformation capabilities. Explorative learning (discovering new knowledge) supports the ability to anticipate, whereas exploitative learning (utilizing old knowledge) supports the ability to respond to uncertainty during digital transformation. Therefore, support for organizational learning needs to be a priority agenda for companies facing future digital disruption.

Yang and Deng (2023) examined whether the digital era can increase corporate sustainability, evidence was shown from the perspective of the Resilience of a Chinese company. The results showed that significant digitalization can increase resilience in companies. However, if digitalization exceeds the limit, it can hinder the resilience of the company. This means that the relationship between digitalization and resilience was inverted U-shaped; this was steep and showed a marginal increasing trend. Utilization in allocating resources and accessibility of information in conveying the impact of digitalization on resilience. The effect of digitalization on corporate resilience was an increase in high marketing, labor-intensive industries, and technology. The impact of digitalization on the sustainable development of small and medium enterprises, private companies, and foreign-funded businesses is more significant.

3. Methodology

Culinary MSMEs continue to compete in dynamic environmental conditions (Mustofa et al., 2022). It took effort and hard work to maintain and rebuild the business you were running (Srimulyani, 2022). In digital conditions, MSMEs must follow rapid technological developments. Digital transformation is used as a tool to simplify and accelerate business (Corvello et al., 2022; Hermawati et al., 2024; Hermawati, Pusvita, & Jayanti, 2025; Hermawati, Pusvita, Marwa, et al., 2025). Digital competition erodes business actors who do not have technological skills. Therefore, the challenges faced are becoming increasingly difficult for novice MSME actors without good skills and management. MSMEs were tough in following technological advances, facing various obstacles from having to survive in dynamic conditions, and continuing to strive to run sustainable businesses. Various existing studies showed that there were various obstacles to culinary MSMEs, but the various factor studies had not connected together the resilience and sustainability factors influencing digitalization transformation.

While these theories are distinct, they intersect significantly in this study: resilience equips MSEs with the capacity to adapt quickly to digital transformation. Sustainability ensures that digital adoption is not just reactive but supports long-term value creation. Technology adoption stages explain why some MSEs lag in digital transformation, highlighting the need for targeted interventions to move them from laggards to the early majority. Thus, digital transformation is positioned as a mediating pathway through which resilience and sustainability enhance the competitiveness and survival of MSE.

3.1. Data Collection

This study was conducted at culinary UMK in South Sumatra Province, Indonesia. The study was conducted for two months from August to September 2024. The sample size was determined using a non-probability sampling technique. Samples were selected based on the criterion that respondents had been operating their businesses for at least five years and had faced fluctuating conditions such as surviving Covid conditions, increasing inflation, monetary policy, and so on. The number of people contacted was 300 and the number of confirmed samples was 130. All the participants in this study were culinary food entrepreneurs. Data were obtained from the questionnaire using a list of questions arranged based on a Likert scale, namely with five alternative answers: value 1 (Strongly Disagree), 2 (Disagree), 3 (Less Agree), 4 (Agree), and 5 (Strongly Agree)(Latif et al., 2016).

3.2. Model Specifications

From the results of the Likert questionnaire, a selection of factors from each business indicator was carried out, namely the Y variable (digital transformation/endogenous), X1 (Resilience/exogenous), and X2 (Sustainable/exogenous). Knowing the relationship of each X variable to the Y variable from each variable has a manifest variable, then testing was carried out using Structural Equation Modeling analysis (SEM-PLS) (Miftahul et al., 2014).

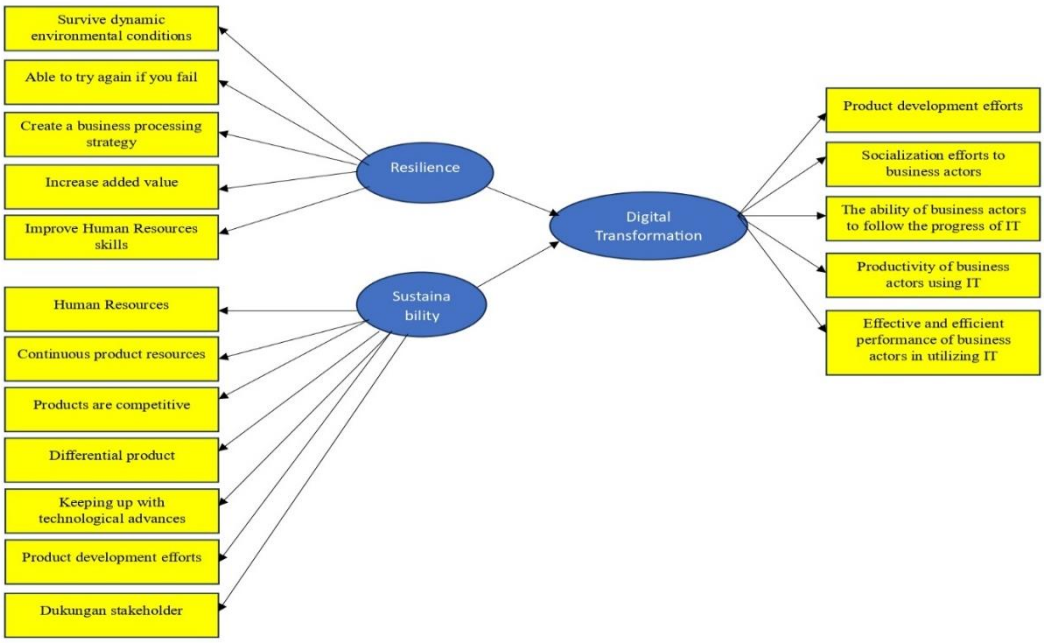

Figure 1. SEM-PLS Structure of the Relationship between Resilience and Sustainability and Digital Transformation

This study used structural equation modeling (SEM) analysis using the partial least squares (PLS) method. SEM analysis combines factor analysis, structural models, and path analysis. (Marsh et al., 2013). The SEM method was chosen because it can explain the influence between variables directly or indirectly and can provide an explanation of the simultaneous correlation between latent variables (exogenous and endogenous). In addition, it provides an explanation for measurement errors and the presence of factor loadings. SEM-PLS analysis consists of (1) the outer model analysis stage, which

was how each indicator relates to its latent variables and ensures that the measurement used was worthy of being a valid and reliable measure. The test carried out on the outer model showed convergent validity if the factor loading value was 0.5 to 0.7, it was considered valid. Yuliawan (2021), Composite Reliability, and Cronbach's alpha are considered reliable if > 0.6. An Average Variance Extracted (AVE) of more than 0.5 indicates that more than half of the construct can explain the indicator. (2) The inner model stage is a model structure that is useful for estimating causal relationships between latent variables or variables that cannot be measured directly. For example, analyzing R2, namely the coefficient of determination, using bootstrapping in SEM-PLS. The R2 value was divided into three categories (1) R2 = 0.67 (strong), (2) R2 = 0.33 (moderate), (3) R2 = 0.19 (weak) (Chin, 1998). (Figure 1) showed the relationship between endogenous variables (Y) and exogenous variables (X 1, 2). There was one endogenous variable and two exogenous variables. The model equation with the research path and the Equation for the Structural Model in Figure 1.

$$\eta 1 = \gamma 11\xi 1 + \delta 1$$
$$\eta 1 = \gamma 22\xi 2 + \delta 2$$

The equation of the exogenous variable measurement model is shown in Figure 1.

$$X1 = \lambda 11\xi 1 + \delta 1$$
$$X12 = \lambda 12\xi 1 + \delta 2$$
$$X13 = \lambda 13\xi 1 + \delta 3$$
$$X14 = \lambda 14\xi 1 + \delta 4$$
$$X15 = \lambda 15\xi 1 + \delta 5$$
$$X2 = \lambda 2\xi 1 + \delta 1$$
$$X21 = \lambda 21\xi 1 + \delta 2$$
$$X22 = \lambda 22\xi 1 + \delta 3$$
$$X23 = \lambda 23\xi 1 + \delta 4$$
$$X24 = \lambda 24\xi 1 + \delta 5$$
$$X25 = \lambda 25\xi 1 + \delta 6$$
$$X26 = \lambda 26\xi 1 + \delta 7$$

The equation of the endogenous variable measurement model is shown in Figure 1.

$$Y1 = \lambda 1\eta 1 + \varepsilon 1$$
$$Y2 = \lambda 2\eta 1 + \varepsilon 2$$
$$Y3 = \lambda 3\eta 1 + \varepsilon 3$$
$$Y4 = \lambda 4\eta 1 + \varepsilon 4$$
$$Y5 = \lambda 5\eta 1 + \varepsilon 5$$

Information:

ξ (ksi)	= notation of exogenous latent variables
ε (eta)	= notation of endogenous latent variables
γ (gamma)	= parameters to describe the direct correlation of exogenous variables to endogenous variables
δ (zeta)	= structural error that existed in an endogenous variable
δ (delta)	= measurement error that was correlated with exogenous variables
ε (epsilon)	= measurement error that was correlated with endogenous variables
λ (lambda)	= factor loadings, which were parameters that describe the direct correlation between the exogenous and manifest variables.
X	= manifest variables that were correlated with exogenous variables
Y	= manifest variables that were correlated with endogenous variables

4. Results and discussions

4.1. Result

4.1.1. Respondent Characteristics

The total population response was 300 questionnaires distributed to culinary MSEs inSouth Sumatra Province, Indonesia, and 130 questionnaires were returned. The percentage rate of return of the

distribution of questionnaires was 43% of the total.

Table 1. Characteristics of MSEs in South Sumatra Province

Respondent Characteristics	Frequency (N=130)
Gender	
Male	45
Women	85
Age of MSE Owner (years)	
< 19	0
20 – 30	45
31 – 40	55
41 – 50	22
> 50	8
Length of time running the SME	
5 – 10	78
11 – 15	17
16 – 20	26
21 – 25	5
> 25	4
SME Owner Education	
no education	15
completed high school	58
Undergraduate	57
Number of Labourers	
(0)Family Labour	57
1-5	46
6-10	13
11-15	7
15 – 20	5
> 20	2

Sumber: Author's Calculation, (2024)

(Table 1) showed that the MSE owners in this study were mostly women with an age classification of 31-40 years. MSE owners had been running their businessesfor between five and ten years. Based on the National Small Business provision standards, MSEscan be categorized into four groups. The group divisions were micro, very small, small, and medium. Categories can be grouped again based on the number of workers, total assets, andturnover. This research used the number of employees to categorize SMEs. Micro enterpriseswere those with less than five employees: very small (less than ten employees), small (less than 50 employees), and medium (less than 100 employees) (Farisi, Salman al, Iqbal fasa muhammad, 2022; Hendra, 2017). The results of the data accumulation research showed that most of the samples employ family labor and labor outside the family in the range of one tofive workers; it can be concluded that the business was included in the micro business category.

4.1.2. Resilience of MSME

The progress of a country lies in the sustainable development of its economic and social sectors. The driver of the economy was the sustainability of Micro and Small Enterprises (MSMEs), which were growing rapidly. Before achieving sustainability, MSMEs often experience fluctuating conditions due to rising fuel prices, so that all nine main staple foods for the community increase, such as oil, rice, and sugar. This condition concerned business actors who were just starting and developing. In addition, the Covid-19 condition has devastated all sectors, especially the economy. Due to social restrictions, all face-to-face activities had stopped. Under these conditions, many MSMEs in the community have gone

bankrupt. Digital transformation was a solution to social restrictions, and all online media can be used as a market to market MSME products. Resilience in dynamic fluctuation conditions makes it difficult for business actors to grow the economy, create jobs, and eradicate poverty.

Table 2. Resilience Factors of SME Actors

Description	Mean	Standard Deviation
X1 Survive dynamic environmentalconditions	4.577	0,509
X12 Able to try again if youfail	4.508	0,515
X13 Create a businessprocessing strategy	4.546	0,513
X14 Increase added value	4.531	0,514
X15 Improve HR skills	4.523	0,515

Composite reliability (rho_a) 0,955, average variance extracted (AVE) 0,833, Cronbach's alpha 0,949, composite reliability (rho_c) 0,961.
Source: Author's Calculation, (2024)

Table 2 shows the loading factor as a measure used as a latent variable, namely, the resilience indicator had a composite reliability (rho_a) of 0.955. This value indicates good or satisfactory reliability validity. A Cronbach's alpha of 0.949> 0.70 was generally accepted as satisfactory (Campbell-sills & Stein, 2007). According to Campbell-Sills and Stein (2007), Cronbach's alpha of 0.80 was consistent with other studies that use a ten-item scale to measure resilience. Cronbach's alpha was 0.85 (Markman & Baron, 2003). Connor and Davidson (2003) showed a Cronbach's alpha of 0.81, and according to the study Fatoki 2018) used the same scale to measure MSE Resilience with a Cronbach's alpha of 0.82.

4.1.3. Sustainability of MSME

Sustainability was defined as how to continue to survive and continue the operation of MSMEs under any condition. For example, in South Africa, a high rate of MSME failure has a negative impact on sustainable development. Likewise, in Indonesia, the concept of sustainability often encounters resilience conditions; if the MSME actors are able to survive, then sustainability would run. MSMEs had an important role if they were sustainable, namely as a supporter of the country's future. This can increase job opportunities, reducing unemployment. Increasing the power of critical thinking innovation to make products and increasing productivity by using technology. All these factors can increase economic growth if MSMEs continue to be sustainable.

Table 3. Sustainability Factors of MSME Actors

Description	Mean	Standar Deviasi
X2 Human resources	4.531	0,514
X21 Continuous product resources	4.469	0,499
X22 Competitive products	4.477	0,499
X23 Differentiated products	4.438	0,496
X24 Following technological advances	4.477	0,499
X25 Product development efforts	4.431	0,495
X26 Stakeholder support	4.454	0,498

Sumber: Author's Calculation, (2024)

The statistical results (Table 3) showed a composite reliability (rho_a) value of 0.957, average variance extracted (AVE) of 0.600, Cronbach's alpha of 0.891, and composite reliability (rho_c) of 0.912. This shows that the loading factors that form sustainability have good reliability or validity. We then continued with the statistical analysis of the latent variables of the digital transformation indicators in (Table 4).

Table 4. Digital transformation carried out by MSME actors

Discription	Mean	Standar Deviasi
Y1 IT resources	4.585	0,493
Y2 Socialization efforts to business actors	4.608	0,504
Y3 Business actors' ability to follow IT progress	4.608	0,504
Y4 Productivity of IT users	4.600	0,505
Y5 Effective and efficient performance of business actors in utilizing IT	4.600	0,505

Sumber: Author's Calculation, (2024)

Table 4 SEM-PLS results showed a composite reliability value (rho_a) of 0.952, average variance extracted (AVE) of 0.801, Cronbach's alpha of 0.934, and composite reliability (rho_c) of 0.952; all values were > 0.7. Digital transformation was formed from the loading factors with good or satisfactory reliability. Digital transformation itself was a comprehensive change in an MSE by changing old habits to users of digital technology to do business, maximize performance, and increase added value for consumers. The transformation experienced by MSEs includes technology-based data processing, artificial intelligence, the Internet of Things (IoT), and other benefits that were considered to increase flexibility, competitiveness, and business efficiency.

4.1.4. The Relationship between Resilience and Business Sustainability and Digital Transformation carried out by MSMEs

The resilience of business actors with digital transformation was 0.834. The relationship between the resilience variable and digital transformation factor was categorized as strong. A strong relationship was seen from the path coefficients approaching +1, which was 0.860 and was positive (Sarstedt et al., 2017). The positive influence on the resilience variable was due to flexible and responsive businesses being able to adapt quickly to changes in the digital environment. Resilience allows businesses to experiment with various digital business models without fear of failure (Santos et al., 2023). Digital risk-anticipation capabilities make it easier for businesses to plan defense and expansion strategies. Close networking with other digital players helps technology transfer and collaboration opportunities (Oliveira et al., 2011). Financially healthy businesses were better able to invest in digital transformation. Skilled human resources can maximize the benefits of transformation as part of an adaptation strategy (Choshin & Ghaffari, 2017). The 2021 OECD survey showed that 71% of resilient businesses in ASEAN had adopted at least three major digital technologies. The 2022 WEF report states that a country's competitiveness is positively correlated with the business actor's capacity to adapt to disruption.

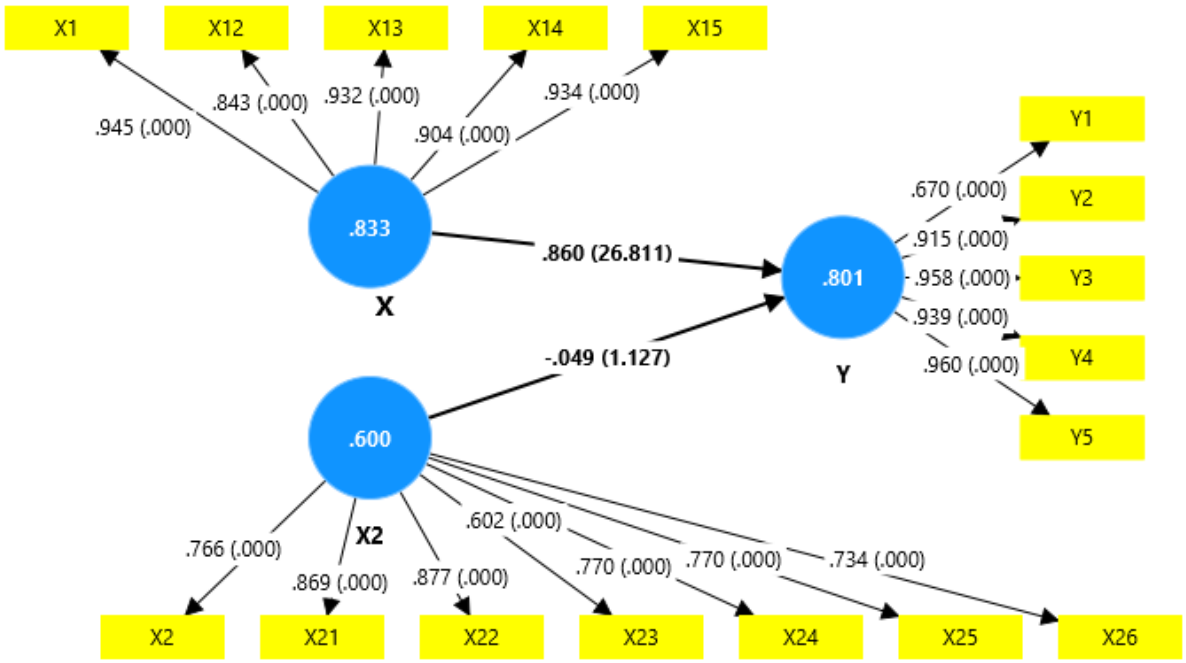

Figure 2. Resilience and Sustainability Relationship Model to Digital Transformation

In (Figure 2) the sustainability variable had a weak relationship, as seen from the path coefficients of -0.049. The R square value was 69.8 percent or R-square adj = 69.3%, where to see the goodness of the model in SEM-PLS if R square> 0.26, the model was declared good.

4.2. Discussion

The relationship between the resilience of MSME actors and the existence of digital transformation shows a real relationship. On the other hand, the relationship between business sustainability and digital transformation has not yet reflected the efforts of business sustainability to influence the progress of the digital transformation of MSME actors. This result can be attributed to several factors. (1) The measured sustainability indicators did not accurately represent sustainability as a whole. For example, they did not measure long-term commitment. (2) The scale of the designed micro-businesses had difficulty paying attention to environmental and social aspects. The focus was on profit or growth. (3) Digital transformation in MSEs was primarily defensive and lacked integration with sustainable practices because of limited resources. (4) The culture of microbusinesses did not prioritize sustainable business principles, even though it had great potential. (5) Limited resources owned by micro-businesses to carry out sustainable business practices simultaneously with digital transformation. (6) Lack of incentives/support for microbusinesses to carry out sustainability-based digital transformation. (7) The research period was too short to detect the long-term influence of sustainability on digital transformation.

The resilience variable of MSME actors had a positive effect on digital transformation, whereas sustainability had a negative effect on the digital transformation variable. The speed of implementing digital transformation plays an important role in MSMEs, such as the existence of a business process data bank, efficiency of manpower, time and costs, increased work productivity, modernization of businesses using technology, and good design that attracts consumer interest (Hashem et al., 2020; Singh & Steele, 2021). This means that with digital technology, processes and activities become effective and efficient. To survive in digital conditions, MSME actors must follow technological advances. MSME actors used digitalization of production machine technology, cash flow management, and marketing systems. The findings from this study showed that most MSME actors run businesses with family workers. Putritamara et al. (2023) stated that digital transformation plays an urgent role in the resilience of micro, small, and medium enterprises in family businesses. Adopting digitalization would result in changes in the culture and technology applied, and there would be social and economic impacts (Sakuramoto, 2019).

5. Conclusion

MSMEs had difficulty surviving in the face of dynamic conditions. The chances of culinary MSMEs failing are very high. The ever-changing environment made culinary MSME actors go through high levels of stress, obstacles in terms of raw materials, skills, innovation of added product value, and product uncertainty. The resilience of culinary MSMEs in overcoming obstacles means that the sustainability of culinary MSMEs continues. The results of this study found a relationship between resilience and digital transformation and a relationship between sustainability and digital transformation. The relationship between resilience and digital transformation was stronger than that between sustainability and digital transformation. The main cause was that culinary MSME actors did not have a long-term commitment, found it difficult to grow in dynamic environmental and social conditions, and focused on making a profit. Digital transformation in culinary MSMEs was defensive rather than holistically supporting sustainability, limited resources that were simultaneously sustainable, and integrated with digital transformation. Nengyanti, Putri, Nasyaya, Musdalifah, and Santoso (2023) the results of the implications for the people of South Sumatra found five main root problems of micro and small businesses to overcome these problems, digital transformation, innovation and creativity counseling was carried out. The results showed significant changes from before and after counseling in increasing digital transformation, creativity, and innovation so that MSME actors could survive in fluctuating conditions such as the occurrence of covid 19.

5.1 Limitation

1. The research sample was small and focused on a particular region, so the results are less representative of national-scale MSEs.
2. The research variables did not consider external factors, such as government regulations and digital infrastructure, that influence the adoption of digital transformation.
3. The research respondents only focused on business owners, so they did not represent the perspectives of all related stakeholders, such as employees and customers.
4. Differences in industry and regional characteristics that can moderate the influence of digital transformation on outcome variables have not been considered.

5.2 Future Studies

1. Develop a comprehensive conceptual framework and indicators for measuring MSE resilience and sustainability.
2. A quantitative study was designed with a more representative sample to test the research hypothesis.
3. Contextual variables, such as regulation, infrastructure, and MSE characteristics, are included to enrich the analysis.
4. The long-term impact of digital transformation on MSE resilience and sustainability performance was tested.
5. Conduct comparative studies between countries to identify the supporting and inhibiting factors for MSE digital transformation.

Acknowledgements

We would like to express our deepest gratitude to all parties whose names we cannot mention one by one, who had helped provide support, input, and suggestions that were very useful in writing this scientific work.

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