DIGITAL CAPABILITIES, ENVIRONMENT, AND BUSINESS STRATEGY FOR MSMEs PERFORMANCE IN SIDOARJO DISTRICT

KAPABILITAS DIGITAL, LINGKUNGAN, DAN STRATEGI BISNIS TERHADAP KINERJA UMKM DI KABUPATEN SIDOARJO

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ABSTRACT
This research aims to test and prove the influence of environmental factors, business strategy, digital literacy, and digital skills on the performance of MSMEs. Quantitative research is a type of research that uses primary data. Questionnaires are used to collect data. The population of this research is MSMEs in Sidoarjo Regency, according to data from the Department of Cooperatives and Micro Enterprises (Ditakopum). The sampling technique used purposive sampling, and 162 business actors or MSME owners were respondents whose data could be processed. The variant-based Structural Equation Modeling (SEM) or Partial Least Square (PLS) model was used to analyze the data via SmartPLS version 4.0 software. The results of this research explain that business strategy, digital literacy, and digital skills influence the performance of MSMEs. However, environmental factors do not influence the performance of MSMEs. This indicates that in the current digital era, digital skills and the ability to create business strategies are very important for MSMEs. The implication is that the government can further intensify digital training for MSME owners as a business strategy to achieve MSME sustainability.
Keywords: *Environmental Factor, Business Strategy, Digital Literacy, Digital Skill, Performance*

ABSTRAK
Penelitian ini bertujuan untuk menguji dan membuktikan pengaruh faktor lingkungan, strategi bisnis, literasi digital, dan kemampuan digital terhadap kinerja UMKM. Penelitian kuantitatif merupakan jenis penelitian yang digunakan dalam penelitian ini dengan menggunakan data primer. Kuesioner digunakan sebagai metode untuk mengumpulkan data. Populasi penelitian ini adalah UMKM di Kabupaten Sidoarjo menurut data dari Dinas Koperasi dan Usaha Mikro (Ditakopum). Teknik pengambilan sampel menggunakan purposive sampling dan sebanyak 162 pelaku usaha atau pemilik UMKM sebagai responden yang datanya dapat diolah. Model Structural Equation Modeling (SEM) berbasis varian atau Partial Least Square (PLS) digunakan sebagai teknik untuk menganalisis data melalui perangkat lunak smartPLS versi 4.0. Hasil dari penelitian ini menjelaskan bahwa strategi bisnis, literasi digital, dan keterampilan digital memiliki pengaruh terhadap kinerja UMKM. Namun, faktor lingkungan tidak memiliki pengaruh terhadap kinerja UMKM. Hal ini mengindikasikan bahwa di era digital saat ini, keterampilan digital menjadi sangat penting bagi para pelaku UMKM selain kemampuan membuat strategi. Implikasinya, pemerintah dapat mengintensifkan pelatihan digital bagi para pelaku UMKM sebagai strategi bisnis untuk mencapai keberlanjutan UMKM.
Kata Kunci: Faktor Lingkungan, Strategi Bisnis, Literasi Digital, Keterampilan Digital, Kinerja

INTRODUCTION

The crisis caused by the COVID-19 pandemic not only occurs in the health sector but also has an impact on economies around the world. (Widnyani et al., 2021).. However, currently the Indonesian economy has risen in various business sectors (Supartoyo, 2022). This can be seen from the many people who produce new creativity and innovation. The success of economic development relies heavily on creativity and innovation, which are closely related to the intellectual property system (Tasya et al., 2020). (Tasya et al., 2020).

Micro, Small, and Medium Enterprises (MSMEs) are a crucial sector for reducing unemployment and poverty in Indonesia. (Prasetyo & Farida, 2022).. The *United Nations Conference on Trade and* Development (UNCTAD) in its report ASEAN *Investment Report* 2022 has stated that

MSMEs contribute greatly to Gross Domestic Product (GDP) in 2021 reaching 60.3%. In addition to contributing to Gross Domestic Product (GDP), MSMEs also contribute greatly to employment as much as 97% of the total workforce. (*United Nations Conference on Trade and Development* (UNCTAD) & ASEAN Secretariat, 2022).. MSMEs that can rise and survive have influenced competitiveness advantages and national economic performance after the COVID-19 pandemic (Firmansyah et al., 2022). (Firmansyah et al., 2022).. This aims to enable MSME players to compete with other competitors in the global market (Armiani et al., 2021). (Armiani et al., 2021).

Sidoarjo Regency is known as one of the districts in East Java province with the third largest total number of MSMEs so Sidoarjo Regency is called the best MSME city. (Karinayah, 2019). Based on data from the Sidoarjo Regency Cooperative and Micro Business Office (Ditakopum), until 2023 MSMEs in Sidoarjo Regency have amounted to 106,971 with various types of businesses. Based on information from the surabayatribunnews website, the Surabaya Export *Center* in 2022 successfully supported 1,500 MSMEs to *go to* export, where 300 MSMEs came from Sidoarjo with 28 MSMEs successfully exporting to Malaysia and others exporting to Korea and Australia. This can ultimately improve the performance of their business (Taufik, 2023).

This research focuses on MSMEs in Sidoarjo Regency. Based on information reported on the surabayatribunnews website, the Sidoarjo Regency Government has conducted capacity building training in the field of marketing to assist business actors in selling their products, which until now has been the main obstacle for MSME players. The Sidoarjo Regency Government hopes that the training will be able to make MSME players maintain their business and improve their business performance, both financial performance and non-financial performance (Taufik, 2023).

In terms of improving the performance of MSME actors, of course there are factors that are considered capable of influencing this. This research refers to research Xiaoyan Teng, et al (2022) which shows that there are three factors that have an influence on the performance of an organization, where the three factors include: Digital Technology, Digital Skills, and Digital Transformation Strategy. Research conducted by Xiaoyan Teng, et al (2022) further modified in this study by changing several independent variables, where environmental factors, business strategies, digital literacy, and digital skills are considered to influence the adoption of digital technology and MSME performance.

Research researched by Arsalan Hussain, et al (2020) explained that environmental factors have an impact on the performance of MSMEs. Meanwhile, research researched by Sentiago & Hidayatulloh (2019) explains that environmental factors have no impact on the performance of SMEs. Research researched Armiani, et al (2021) explains that business strategy has an impact on the performance of MSMEs. Meanwhile, research researched by Suriyanti & Binangkit (2019) explains that business strategy has no impact on business performance. Research researched by Deri Firmansyah, et al (2022) explains that digital literacy affects the competitiveness of MSMEs. Meanwhile, research researched by

Rosifa & Chayono (2024) explains that digital literacy has no impact on the performance of MSMEs. Research researched by Xiaoyan Teng, et al (2022) shows that digital skills have an impact on the performance of SMEs. Meanwhile, research researched by Aulia (2023) explained that digital skills have no impact on SME performance. Based on some of the previous research, this research question is whether environmental factors, business strategy, digital literacy, and digital skills affect the performance of SMEs in Sidoarjo Regency?

Research on the factors that influence the performance of MSMEs is very important because it can provide a deep understanding of MSMEs, especially in Sidoarjo Regency. Therefore, the purpose of this study is to prove the influence of environmental factors, business strategies, digital literacy, and digital skills on the performance of MSMEs in Sidoarjo Regency. This research offers novelty by more detailed empirically analyzing digital literacy, and digital skills that have not been highlighted in MSMEs in Sidoarjo Regency. Digital skills are a very relevant factor to be studied in today's digital era. In addition, the *Resource Based View* (RBV) theory and *Dynamic Capability View* (DCV) theory are used as the basis for analysis. The main contribution of this research is as a reference for policy makers in designing more effective programs to support MSMEs in Sidoarjo Regency. It is hoped that the results of this research can provide a strong foothold to support the development of more sustainable and highly competitive MSMEs in the future.

Resource Based View (RBV) Theory

According to (Martini et al., 2023) *Resource Based View Theory* is a theory that describes that every organization can have resources and capabilities within the organization so that they can be developed and utilized as a special ability to create a competitive advantage. From this point of view, the resources controlled by the organization must meet four conditions, namely: valuable, rare, inimitable, and irreplaceable. (Teng et al., 2022)..

Dynamic Capability View (DCV) Theory

According to Sarwar et al. (2021) the view of DCV theory is important to increase the capacity of organizations to be competitive and innovative, as well as adapt and transform resources into improved economic performance. With limited resources and skills, it is a challenge for organizations to change existing processes and achieve dynamism.

MSME Performance

Performance is the result of work done by an individual and can be completed within a certain period of time, which will later be linked to the size of the values or norms of the organization. MSME performance itself is the success of an organization in recognizing important focuses and has been targeted by the usual way of behaving by an organization. (Siswanti, 2020).

Environmental Factors

Under high technological uncertainty, the ability to adapt to environmental changes is a must for organizations in order to improve their business performance. The level of adaptability greatly affects the performance of an organization, therefore it is important to build strong adaptability (Pudjihastuti & Kurdaningsih, 2018).

H1: Environmental factors affect the performance of MSMEs

Business Strategy

A creativity and flexibility strategy carried out by the organization in order to respond to a rapidly changing market. Every organization strives to maximize the appropriate strategy so that it can compete by developing products or methods, so as to produce superior and innovative products. (Armiani et al., 2021).

H2: Business strategy affects the performance of MSMEs

Digital Literacy

Digital literacy can be considered a necessity that may arise as a result in the age of digitalization. Advanced proficiency likewise guarantees the capability to see the utilization of data innovation on computerized devices effectively and effectively in various situations (Firmansyah et al., 2022).

H3: Digital literacy affects MSME performance

Digital Skills

According to Kusumawati & Saputri (2023) digital skills are the capacities and abilities used in utilizing data and correspondence innovation opportunities to further develop implementation to be more successful and productive.

H4: Digital skills affect MSME performance

RESEARCH METHODS

Researchers used a quantitative approach as the type of research. The population of this research is 106,971 MSMEs spread across Sidoarjo Regency. The sample collection technique was carried out by *purposive sampling*. This research uses the formula Hair et al. (2021) to determine the sample size to be obtained. Primary data is the type of data used. MSME actors or owners in Sidoarjo Regency are the data sources used. The questionnaire is used as a method for collecting data using a Likert scale, where this scale is used through measuring the attitudes, income, and point of view of individuals or organizations regarding social events (Sugiyono, 2019:93).

The analysis technique was carried out by analyzing descriptive statistics and inferential statistics. Variant-based *Structural Equation Modeling* (SEM) or *Partial Least Square* (PLS) was used in this study through the help of smartPLS *software* version 4.0. According to Ghozali (2021: 26) the path analysis model of all latent variables in SEM-PLS has two stages, namely: assessing the *outer model* and *inner model*. Testing the *outer model* there is a validity test with two forms, namely convergent validity and discriminant validity tests, as well as a reliability test. *Inner model testing* consists of the *R-Square* test and the *Q-Square* test. Hypothesis testing uses path coefficient analysis and t-statistical tests where t-statistical testing uses an *alpha* of 5% with a critical value of $\pm$ 1.96. The concepts and measurements in each variable can be summarized through table 1 as follows:

Table 1. Operational and Measurement Variables

Variables	Variable Concept	Indicator	Measurement Scale
Environmental Factors $(X)_1$	The ability of an organization to adapt due to environmental	a. Adaptability The dynamism, amount and speed of environmental	Ordinal scale using Likert scale.

Variables	Variable Concept	Indicator	Measurement Scale
	changes.	change; b. Adaptability to resource scarcity and abundance; c. Adaptability to regulatory complexity, international competition, and technology; and d. Adaptability to industry characteristics.	Pudjiha stuti & Kurdaningsih (2018)
Business Strategy $(X)_2$	A long-term plan designed to achieve business goals.	a. Vertical and horizontal integration; b. Market penetration; c. Market development; and d. Product development.	Ordinal scale using Likert scale. Pudjiha stuti & Kurdaningsih (2018)
Digital Literacy $(X)_3$	Ability to understand digital technology.	a. Ability to utilize *web-* or app-based digital business features, *market places,* and *e-banking;* b. Maintain sales and customers using digital facilities; c. Maintain privacy and security of digital data; and d. Determine accurate information from *online* media.	Ordinal scale using Likert scale. Diptya na et al. (2022)
Digital Skills $(X)_4$	Ability to use digital technology.	a. Continuous learning improvement; b. Balance between general digital skills and specialized digital roles; c. Team building with the right mix of skills; d. Employees are talents who understand business and digitalization; and e. Provision of resources for skills.	Ordinal scale using Likert scale. Teng et al. (2022)
MSME Performance (Y)	Achievement of the performance results of the business in the	Financial performance indicators: a. Earnings;	Ordinal scale using Likert scale.

Variables	Variable Concept	Indicator	Measurement Scale
	current period.	b. Increased sales; and c. Increase in asset value. Non-financial performance indicators: a. Loyal customers; b. Customer upgrades; c. Revenue to fund operational needs; d. Efficient operation; and e. Income to cover business capital.	Diptyana et al. (2022)

Source: Researcher's Processed Results.

RESULTS AND DISCUSSION
Description of Research Objects

Information on the research was accumulated by distributing questionnaires to MSME actors through considerations that have been determined by the researcher with a total of 162 respondents. The identity of the respondents can be seen by looking at table 2 below:

Table 2. Description of the Research Object

Characteristics	Frequency	Percentage
Education:		
SD	2	1,23%
SMP	4	2,47%
SMA/SMK Equivalent	74	45,68%
D3	9	5,56%
S1	68	41,98%
S2	4	2,47%
S3	1	0,62%
Gender:		
Male	39	24,07%
Female	123	75,93%
Age:		
Gen Z (20-29 years old)	18	11,11%
Millennial Gen (30-39 years old)	44	27,16%
Gen X (40-49 years old)	63	38,89%
Baby Boomers (>50 years old)	37	22,84%
Length of Business:		
<10 years	128	79,01%
10-20 years	32	19,75%
>20 years	2	1,23%
1 Year Turnover:		
Micro (0-300 million)	153	94,44%
Small (>300 million-3 billion)	9	5,56%
Number of Employees:		
1 person	41	25,31%
2-4 people	94	58.02%
5-19 people	26	16,05%
>19 people	1	0,62%
Type of Business Sector:		
Fashion Field	30	18,52%
Beauty Field	2	1,23%
Culinary Field	29	17,90%
Automotive Field	4	2,47%
Livestock Field	1	0,62%
Handicrafts	25	15,43%
Other	71	43,83%

Source: Primary data processed, 2024

Descriptive Statistics Analysis
Table 3. Descriptive Statistics

	N	Minimum	Maximum	*Mean*	*Median*	Standard Deviation
Environmental Factors	162	3,000	5,000	4,161	4,000	0,513
Business Strategy	162	3,000	5,000	4,238	4,000	0,503
Digital Literacy	162	3,000	5,000	4,650	5,000	0,479
Digital Skills	162	3,000	5,000	4,112	4,000	0,484
MSME Performance	162	3,000	5,000	4,305	4,000	0,492

Source: Primary data processed, 2024

Based on table 3, it explains that the average value of the environmental factor variable is 4.161, meaning that

MSME actors have a high level of adaptability in dealing with dynamism in the external environment and a standard deviation value of 0.513. If the average value is greater than the standard deviation value, it indicates that the data deviation is low and the distribution of values is even. For the average value of the business strategy variable of 4.238, which means that the application of business strategies owned by MSME actors is appropriate in order to produce products that are superior to their competitors and the standard deviation value is 0.503. If the average value is greater than the standard deviation value, it indicates that the data deviation is low and the distribution of values is evenly distributed. For the average value of the digital literacy variable of 4.650, which means that the level of digital literacy possessed by MSME actors is high in understanding information on the use of digital media and a standard deviation value of 0.479. If the average value is greater than the standard deviation value, it indicates that the data deviation is low and the distribution of values is evenly distributed. For the average value of the digital skills variable of 4.112, which means that the level of digital expertise or skills possessed by MSME actors is high in utilizing digital technology opportunities and the standard deviation value is 0.484. If the average value is greater than the standard deviation value, it indicates that the data deviation is low and the distribution of values is even. For the average value of the MSME performance variable of 4.305, which means that the level of success of business performance achieved by MSME actors to continue to grow is good and the standard deviation value is 0.492. If the average value is greater than the standard deviation value, it indicates that the data deviation is low

and the distribution of values is evenly distributed.

Outer Model Testing
Convergent Validity

Table 4. *Outer Loading* Value

	Outer Loading	Descript ion
X1.1 <- Environmental Factors	0,983	Valid
X1.2 <- Environmental Factors	0,760	Valid
X1.3 <- Environmental Factors	0,770	Valid
X1.4 <- Environmental Factors	0,950	Valid
X2.1 <- Business Strategy	0,810	Valid
X2.2 <- Business Strategy	0,925	Valid
X2.3 <- Business Strategy	0,808	Valid
X2.4 <- Business Strategy	0,863	Valid
X3.1 <- Digital Literacy	0,948	Valid
X3.2 <- Digital Literacy	0,924	Valid
X3.3 <- Digital Literacy	0,825	Valid
X3.4 <- Digital Literacy	0,781	Valid
X4.1 <- Digital Skills	0,851	Valid
X4.2 <- Digital Skills	0,729	Valid
X4.3 <- Digital Skills	0,802	Valid
X4.4 <- Digital Skills	0,924	Valid
X4.5 <- Digital Skills	0,908	Valid
Y.1 <- MSME performance	0,758	Valid
Y.2 <- MSME performance	0,807	Valid
Y.3 <- MSME performance	0,831	Valid
Y.4 <- MSME Performance	0,785	Valid
Y.5 <- MSME performance	0,840	Valid
Y.6 <- MSME Performance	0,793	Valid
Y.7 <- MSME Performance	0,808	Valid
Y.8 <- MSME Performance	0,789	Valid

Source: Primary data processed, 2024

Table 5. AVE Value

	AVE
Environmental Factors	0,760
Digital Skills	0,715
MSME Performance	0,643
Digital Literacy	0,761
Business Strategy	0,728

Source: Primary data processed, 2024

The results of data analysis shown in table 4 and table 5 show that all indicators have an *outer loading* value of more than 0.7 and an AVE value of more than 0.5, which means that all indicators are valid and can be used as research instruments. These results are in accordance with Ghozali's statement (2021: 28), indicators are considered valid if they have a *loading factor of* more than 0.7. Meanwhile, the AVE value has criteria with a value of 0.5 to 0.6 which is considered sufficient.

Discriminant Validity

Table 6. *Fornell Larcker Criterion Test*

	X1	X4	Y	X3	X2
Environmental Factors	0,872				
Digital Skills	-0,138	0,846			
MSME Performance	-0,134	0,413	0,802		
Digital Literacy	0,048	0,388	0,332	0,872	
Business Strategy	0,191	0,238	0,308	0,088	0,853

Source: Primary data processed, 2024

Table 7. Cross Loading Value

	X1	X4	Y	X3	X2
X1.1	0,983	0,149	-0,170	0,039	0,190
X1.2	0,760	-0,045	-0,008	0,188	0,139
X1.3	0,770	-0,052	-0,027	0,184	0,183
X1.4	0,950	-0,126	-0,086	0,003	0,166
X2.1	0,246	0,109	0,210	0,052	0,810
X2.2	0,108	0,266	0,383	0,061	0,925
X2.3	0,177	0,291	0,132	0,135	0,808
X2.4	0,187	0,138	0,191	0,095	0,863
X3.1	0,054	0,332	0,344	0,948	0,119
X3.2	0,044	0,462	0,366	0,924	0,154
X3.3	-0,034	0,258	0,186	0,825	-0,065
X3.4	0,106	0,216	0,163	0,781	-0,012
X4.1	-0,068	0,851	0,238	0,448	0,164
X4.2	-0,077	0,729	0,200	0,253	0,210
X4.3	-0,071	0,802	0,213	0,265	0,201
X4.4	-0,141	0,924	0,454	0,390	0,224
X4.5	-0,165	0,908	0,461	0,294	0,213
Y.1	0,032	0,424	0,758	0,306	0,263
Y.2	0,039	0,442	0,807	0,216	0,329
Y.3	-0,016	0,516	0,831	0,229	0,281
Y.4	-0,236	0,205	0,785	0,407	0,173
Y.5	-0,266	0,292	0,840	0,354	0,194
Y.6	-0,216	0,239	0,793	0,272	0,241
Y.7	-0,257	0,160	0,808	0,160	0,203
Y.8	0,046	0,288	0,789	0,116	0,284

Source: Primary data processed, 2024

From the results of the *Fornell-Larcker criterion* test analysis in table 6, it shows that the value of the variable with its own indicators is greater than the value of the variable with other indicators. In addition, the results of the *cross loading* reliability test analysis in table 7 show that the indicator value on its own variable is greater than the indicator value on other variables. This means that the indicators on each variable of this study have good *discriminant validity* to measure each variable.

Reliability Test

Table 8. *Cronbach's Alpha & Composite Reliability* Value

	Cronbach's Alpha	Composite Reliability (rho_a)	Composite Reliability (rho_c)	Ket
Environmental Factors	0,927	1,449	0,926	Reliable
Digital Skills	0,907	0,995	0,926	Reliable
MSME Performance	0,921	0,926	0,935	Reliable
Digital Literacy	0,904	0,991	0,927	Reliable
Business Strategy	0,883	1,058	0,914	Reliable

Source: Primary data processed, 2024

The results of the reliability test analysis shown in table 8 explain that all variables have a *Cronbach's alpha* value of more than 0.7 and a *composite reliability* value of more than 0.7, which means that all variables are reliable or reliable. This is because according to Ghozali (2021: 29), the *composite reliability* coefficient value and *Cronbach's alpha* must be greater than 0.7.

Inner Model Testing

R-Square

Table 9. *R-Square* value

	R-Square	Adjusted R-Square	Ket
MSME Performance	0,276	0,258	*Moderate*

Source: Primary data processed, 2024

From table 9, the data results from the evaluation of the *r-square* value of MSME performance can be seen that environmental factors, business strategies, digital literacy, and digital skills jointly affect MSME performance, which is 0.258. So it can be explained that the independent variables in this study affect the performance of MSMEs by 26%. While the remaining 74% is explained by other variables.

**Q-Square**

Table 10. *Q-Square* value

	Q^2 Prediction
MSME Performance	0,218

Source: Primary data processed, 2024

From table 10, it explains that the value of Q^2 is more than 0, namely the MSME performance variable of 0.218, which means that the dependent variable has a good *predictive relevance* value. This is because according to Ghozali (2021: 30), the value of $Q^2 > 0$, means that the model has *predictive relevance*. Conversely, the Q value$^2 < 0$, means that the model lacks *predictive relevance*.

Hypothesis Testing
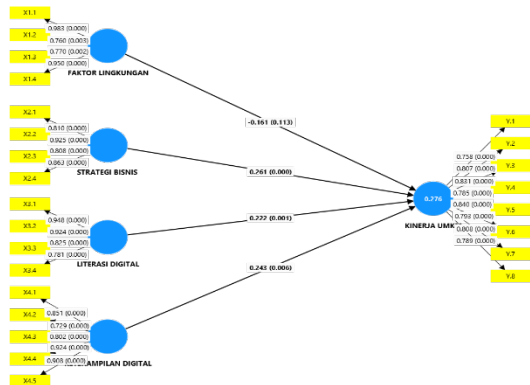
Figure 1. Structural Model Analysis Results

In Figure 1 and Table 11, the test results show that environmental factors have a negative and insignificant relationship with MSME performance. The path coefficient value is -0.161, the standard deviation value is 0.133, and the significance value is 0.113, so H_1 is rejected, which means that environmental factors do not affect the performance of MSMEs. Business strategy has a positive and significant relationship with MSME performance.

The coefficient value is 0.261, the standard deviation value is 0.068, and the significance value is 0.000, then H_2 is accepted, which means that business strategy affects the performance of MSMEs. Digital literacy has a positive and significant relationship with MSME performance. The path coefficient value is 0.222, the standard deviation value is 0.069, and the significance value is 0.001, then H_3 is accepted, which means that digital literacy affects the performance of MSMEs. Digital skills have a positive and significant relationship with MSME performance. The path coefficient value is 0.243, the standard deviation value is 0.096, and the significance value is 0.006, then H_4 is accepted, which means that digital skills affect the performance of MSMEs.

Discussion

Source: Primary data obtained through smartpls, 2024

Table 11. Direct Effect

	Path Coefficient	Standard Deviation	T-Statistic	P-value	Ket
Environmental Factors -> MSME Performance	-0,161	0,133	1,214	0,113	Rejected
Digital Skills -> MSME Performance	0,243	0,096	2,536	0,006	Accepted
Digital Literacy -> MSME Performance	0,222	0,069	3,212	0,001	Accepted
Business Strategy -> MSME Performance	0,261	0,068	3,826	0,000	Accepted

Source: Primary data processed, 2024

The Effect of Environmental Factors on MSME Performance

The first hypothesis (H_1) is rejected because the results of the study explain that environmental factors have a negative and insignificant relationship with MSME performance, meaning that environmental factors have no impact on MSME performance. This result is not in accordance with the *Dynamic Capability View* (DCV) theory which states that organizations are seen as adaptive systems and are able to adapt to environmental changes (Teng et al., 2022). (Teng et al., 2022).. MSMEs that have poor adaptability cannot keep up with changes in the external environment that occur so quickly. This is in accordance with the statement Sentiago & Hidayatulloh (2019) which explains that the high level of extreme environmental change if the adaptability of an organization is too weak, it will result in the results of their business performance which continues to deteriorate.

The Effect of Business Strategy on MSME Performance

The second hypothesis (H_2) is accepted because the research results explain that business strategy has a positive and significant relationship with MSME performance, meaning that business strategy has an impact on MSME performance. These results are

in line with the *Dynamic Capability View* (DCV) theory (Teng et al., 2022) where MSME players who have the ability to do something unique in product development can show that these MSMEs have succeeded in achieving strategic advantage. This is in line with the statement (Armiani et al., 2021) that continuous innovation, operational efficiency, and adaptation to market changes can help achieve financial goals and also ensure the sustainability and growth of MSMEs in a dynamic environment.

The Effect of Digital Literacy on MSME Performance

The third hypothesis (H$_3$) is accepted because the results explain that digital literacy has a positive and significant relationship with MSME performance, meaning that digital literacy has an impact on MSME performance. This result is relevant to the *Resource Based View* (RBV) theory where MSME players who have high digital literacy are better able to survive, so that they can improve their business performance to achieve competitive success. (Bintariningtyas et al., 2021).. This is in accordance with the statement (Firmansyah et al., 2022) that by utilizing digital literacy, MSMEs can improve operational efficiency, access wider information and resources, and expand their market networks.

The Effect of Digital Skills on MSME Performance

The fourth hypothesis (H$_4$) is accepted because the research results explain that digital skills have a positive and significant relationship with MSME performance, meaning that digital skills have an impact on MSME performance. This result is in line with the *Resource Based View* (RBV) theory where MSME players need to develop their

digital skills because all business activities can be carried out automatically through digital media, which in turn can make business performance more effective and efficient. (Teng et al., 2022).. This is in line with the statement (Kusumawati & Saputri, 2023) that MSMEs that have good digital skills can continue to innovate and adapt to change, which is important for sustainability and growth in the dynamism of the business environment.

CONCLUSIONS

The results of the research and discussion in this study can be concluded that business strategy, digital literacy, and digital skills have an influence on the performance of MSMEs. Meanwhile, environmental factors have no influence on the performance of MSMEs. The implication of this research is the importance of adaptability for MSMEs to maintain their business performance in a dynamic environment. MSMEs need to focus on product innovation development strategies and improving operational efficiency towards the market to achieve long-term success. Increased digital literacy can help MSMEs to understand the various information available on various digital media sources. MSMEs with good digital skills are better able to innovate in the business environment, making them more likely to achieve long-term sustainability and growth.

Limitations

This study has limitations, namely time limitations, where researchers only have a certain period of time to collect data, this can affect the amount of data that can be collected and sample limitations, samples that are too small and only taken from limited geographic

locations may not be sufficient to provide significant results.

Advice

Suggestions can be made for the Sidoarjo Regency Government, for environmental factors, it is advisable to ensure adequate internet access so that MSMEs are able to respond to the market quickly. For business strategies, it is recommended to provide assistance in formulating effective business strategies. For digital literacy, it is recommended to provide educational programs such as the use of digital media to improve the digital literacy of MSME players. For digital skills, it is suggested to work with educational institutions and organizations to develop digital skills training programs that suit the needs of MSMEs.

For all Sidoarjo Regency MSME owners, for environmental factors, it is recommended to remain proactive in order to maintain their adaptability. For business strategies, it is recommended to strengthen commitment to the development of the strategies implemented. For digital literacy, it is recommended to increase awareness of the importance of literacy. For digital skills, it is recommended to identify digital skills needs by using technology from all aspects.

For future researchers, it is recommended to conduct research not only in Sidoarjo Regency so that the sample size is larger, this needs to be done to get more generalizable results and extend the period span in the study so that the results obtained become more qualified.

REFERENCES

Armiani, A., Basuki, B., & Suwarno, N. (2021). Digital Technology Mediates the Impact of Business Strategy on Umkm Performance in West Nusa Tenggara. *EKUITAS (Journal of Economics and Finance)*, *5*(3), 300-320. https://doi.org/10.24034/j2548502 4.y2021.v5.i3.4892

Aulia, M. R. (2023). Digital Competencies and Experience in Partnership Program on SMEs Performance. *Journal Research of Social Science, Economics, and Management*, *2*(07), 1416-1425. https://doi.org/10.59141/jrssem.v2 i07.385

Diana, D., Hakim, L., & Fahmi, M. (2022). Analysis of Factors Affecting Umkm Performance in South Tangerang. *Journal of Muhammadiyah Business Management*, *3*(2), 67. https://doi.org/10.24853/jmmb.3.2 .67-74

Diptyana, P., Rokhmania, N., & Herlina, E. (2022). Financial Literacy, Digital Literacy and Financing Preferences Role to Micro and Small Enterprises' Performance. *IJEBD (International Journal of Entrepreneurship and Business Development)*, *5*(2), 346-358. https://doi.org/10.29138/ijebd.v5i 2.1785

Firmansyah, D., Saepuloh, D., & Dede. (2022). Competitiveness: Digital Literacy and Digital Transformation. *Journal of Finance and Business Digital*, *1*(3), 237-250. https://doi.org/10.55927/jfbd.v1i3. 1348

Ghozali, I. (2021).*Structural Equation Modeling* with *Partial Least Square* (PLS) Alternative Methods. 5th ed. Semarang: Diponegoro University Publishing Agency.

Harfie, A. P., & Lastiati, A. (2022). Adoption of E-Commerce Use on

MSME Performance (In Micro, Small and Medium Enterprises in DKI Jakarta). *Journal of Accounting and Finance*, *11*(1), 21. https://doi.org/10.36080/jak.v11i1.1700

Hussain, A., Shahzad, A., & Hassan, R. (2020). Organizational and environmental factors with the mediating role of e-commerce and SME performance. *Journal of Open Innovation: Technology, Market, and Complexity*, *6*(4), 1-21. https://doi.org/10.3390/joitmc6040196

Jr, J. F. H., Hult, G. T. M., Sarstedt, C. M. R. M., Danks, N. P., & Ray, S. (2021). Partial Least Squares Structural Equation Modeling (PLS-SEM) Using R: A Workbook. In *Structural Equation Modeling: A Multidisciplinary Journal* (Vol. 30, Issue 1). https://doi.org/10.1080/10705511.2022.2108813

Karinayah, D. (2019). Empowerment of Micro, Small and Medium Enterprises (MSMEs) in Sidoarjo Regency. *State Administration Science Study Program, FISIP, Airlangga University*, *1(1)*, 1-13. https://repository.unair.ac.id/74627/3/JURNAL_Fis.AN.61_18_Supp.pdf

Kusumawati, D. A., & Saputri, P. L. (2023). Digital Transformation: The Role of Digital Skills and E-Readiness in MSMEs. *Performance Journal of Personnel Financial Operations Marketing and Information Systems*, *30*, 81-92. https://doi.org/10.32424/1.jp.2023.30.1.7849

Martini, M., Setiawan, D., Suryandari, R. T., Brahmana, R. K., &

Asrihapsari, A. (2023). Determinants of Digital Innovation in Micro and Small Industries. *Economies*, *11*(6), 1-17. https://doi.org/10.3390/economies11060172

Prasetyo, E., & Farida, F. (2022). The Effect of E-Commerce, Accounting Knowledge, Organizational Culture and Financial Literacy on MSME Performance. *National Multidisciplinary Sciences*, *1*(3), 370-383. https://doi.org/10.32528/nms.v1i3.102

Pudjihastuti, S. H., & Kurdaningsih, D. M. (2018). The *mediating role of competitive advantage in the determinants of SME business performance in batik weaving centers in Central Java Introduction*. *22*(2), 111-131. https://doi.org/10.20885/jsb.vol22.iss2.art1

Rosifa, E., & Chayono, T. D. (2024). The *influence of digital literacy, financial literacy, and financial behavior in facing the industrial revolution 5.0 era in sumbawa and west sumbawa districts*. 103-112. https://conference.uts.ac.id/index.php/Student/article/view/979

Sarwar, Z., Khan, M. A., Yang, Z., Khan, A., Haseeb, M., & Sarwar, A. (2021). An Investigation of Entrepreneurial SMEs' Network Capability and Social Capital to Accomplish Innovativeness: A Dynamic Capability Perspective. *SAGE Open*, *11*(3). https://doi.org/10.1177/21582440211036089

Selfia Bintariningtyas, Tri Mulyaningsih, & Ratwianingsih, L. (2021). E-commerce and

Digital Literacy of MSMEs in Madiun Regency during the COVID-19 Pandemic. *Journal of Management, Creative Economic Sciences and Business, 10(1)*, 20-26. https://doi.org/10.33319/jeko.v10i1.79

Sentiago, B., & Hidayatulloh, A. (2019). Analysis of External Factors Against Internal Factors and Their Impact on SME Performance in the Special Region of Yogyakarta. *Journal of Management and Finance*, *8*(2), 123-134. https://doi.org/10.33059/jmk.v8i2.1638

Sugiyono. (2019). *Quantitative, Qualitative and R&D Research Methods*. Bandung: Alfabeta.

Supartoyo, Y. H. (2022). Digital Literacy Supports Competitiveness and Digital Transformation Towards Society 5.0 Era. *Journal of Abdimas Adpi Social and Humanities*, *3*(3), 387-391. https://doi.org/10.47841/jsoshum.v3i3.207

Suriyanti, L. H., & Binangkit, I. D. (2019). The Role of Government Policy in Moderating the Effect of Business Strategy on Business Performance. *Journal of Accounting and Economics.* http://ejurnal.umri.ac.id/index.php/jae/article/view/1340

Tasya, S. R., Ramli, A. M., Permata, R. R., Ramadayanti, E., & Fauzi, R. (2020). Legal Aspects of E-Commerce Platform in the Era of Digital Transformation Legal Aspects of E-Commerce Platform of Digital Transformation Era. *Journal of Communication and Media Studies*, *24*(2), 119-136. https://doi.org/10.31445/jskm.202

0.3295

Taufik, M. (2023, August 10). Regent Gus Muhdlor asks MSMEs in Sidoarjo to maintain quality if they want to continue to grow. *Surabaya Tribunnews*. Regent Gus Muhdlor asks MSMEs in Sidoarjo to maintain quality if they want to grow - Surya.co.id (tribunnews.com)

Taufik, M. (2023, November 24). One Hundred MSME Players in Sidoarjo Receive Digital Marketing Training. Surabaya Tribunnews. One Hundred MSME Players in Sidoarjo Receive Digital Marketing Training - Surya.co.id (tribunnews.com)

Teng, X., Wu, Z., & Yang, F. (2022). Research on the Relationship between Digital Transformation and Performance of SMEs. *Sustainability (Switzerland)*, *14*(10), 1-17. https://doi.org/10.3390/su14106012

United Nations Conference on Trade and Development (UNCTAD), & ASEAN Secretariat. (2022). *ASEAN Investment Report 2022 Pandemic Recovery and Investment Facilitation*. *October*, 42. https://unctad.org/publication/asean-investment-report-2022

Widnyani, N. M., Astitiani, N. L. P. S., & Putri, B. C. L. (2021). Implementation of Digital Transformation in SMEs during the Covid-19 Pandemic in Denpasar City. *Scientific Journal of Management and Business*, *6*(1), 79-87. https://doi.org/10.38043/jimb.v6i1.3093