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THE INFLUENCE OF DIGITAL LITERACY AND ENTREPRENEURIAL ORIENTATION ON BUSINESS DECISION MAKING AMONG DIGITAL MSMEs IN BATAM CITY

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ABSTRACT

The rapid development of digital technology has encouraged Micro, Small, and Medium Enterprises (MSMEs) to adapt their business activities, particularly in the process of business decision-making. Digital literacy and entrepreneurial orientation are important factors that influence the quality of business decisions in digital MSMEs. This study aims to analyze the effect of digital literacy and entrepreneurial orientation on business decision-making among digital MSMEs in Batu Aji District. This research employs a quantitative approach using a survey method involving 100 digital MSME owners as research respondents. Data were collected through structured questionnaires and analyzed using multiple linear regression techniques. The results indicate that digital literacy has a positive and significant effect on business decision-making. Entrepreneurial orientation also has a positive and significant effect on business decision-making. Simultaneously, digital literacy and entrepreneurial orientation significantly influence business decision-making among digital MSMEs in Batu Aji District. These findings suggest that improving digital literacy and strengthening entrepreneurial orientation play a crucial role in supporting more effective and strategic business decision-making. This study is expected to provide insights for MSME actors and policymakers in formulating strategies and programs for the development of digital MSMEs at the district level.

Keywords: Digital Literacy, Entrepreneurial Orientation, Business Decision-Making, Digital MSMEs.

INTRODUCTION

The development of digital technology has brought significant changes to business operational patterns and strategies, particularly for Micro, Small, and Medium Enterprises (MSMEs). Digitalization enables MSMEs to improve operational efficiency, expand market reach, and access business information more quickly and accurately. In this context, the ability of MSME owners to make appropriate business decisions has become a crucial factor for business sustainability and competitiveness in the digital era.

Business decision-making is influenced not only by market conditions but also by the individual capacity of entrepreneurs to understand and utilize digital technology. Digital literacy reflects an individual's ability to access, understand, evaluate, and effectively use digital-based information to support business activities. MSME owners with a high level of digital literacy tend to leverage data, digital platforms, and information technology as a basis for more rational and strategic business decision-making.

In addition to digital literacy, entrepreneurial orientation also plays an important role in determining the quality of business decision-making. Entrepreneurial orientation reflects innovative behavior, proactiveness, and a willingness to take risks in managing a business. MSME owners with a strong entrepreneurial orientation tend to be more responsive to market opportunities and more adaptive to changes in the business environment, particularly in facing the dynamics of the digital economy.

Batu Aji District, as one of the centers of MSME growth in Batam City, has experienced rapid development of digital MSMEs. However, challenges remain in terms of digital technology utilization and the consistency of information-based business decision-making. Differences in the level of digital literacy and entrepreneurial orientation among MSME owners are believed to influence the quality of business decisions made.

Based on these conditions, this study aims to analyze the effect of digital literacy and entrepreneurial orientation on business decision-making among digital MSMEs in Batu Aji District. The findings of this study are expected to contribute academically to the development of digital entrepreneurship studies and serve as a basis for local governments and stakeholders in designing capacity-building programs for digital MSMEs.

Despite the vast opportunities offered by digitalization, many digital MSMEs have not yet optimally utilized digital technology in their business decision-making processes. In practice, business decisions are often based on intuition, personal experience, or limited information rather than on data analysis and effective use of digital platforms. This condition may lead to suboptimal decisions, such as inappropriate pricing strategies, ineffective digital marketing channel selection, and inaccurate business development planning.

Another major challenge lies in the varying levels of digital literacy among MSME owners. Some entrepreneurs lack sufficient skills in managing digital information, interpreting market data, or using digital tools as a basis for decision-making. Furthermore, entrepreneurial orientation among MSME owners also varies significantly, particularly in terms of innovativeness, risk-taking, and proactiveness in responding to changes in the digital market environment.

The urgency of this study is further emphasized by the rapid growth of digital MSMEs in Batu Aji District, Batam City. However, this growth has not always been accompanied by improvements in data-driven and strategic business decision-making. Therefore, this research is crucial to empirically examine the extent to which digital literacy and entrepreneurial orientation influence business decision-making among digital MSMEs. The findings are expected to provide valuable insights for policymakers and stakeholders in designing more effective capacity-building and support programs for digital MSMEs.

METHODS

The research method used in this study is a quantitative approach. Quantitative research is a method based on positivism that aims to test predetermined hypotheses using empirical data (Sugiyono, 2021). This study adopts a causal research design to examine cause-and-effect relationships by analyzing the influence of independent variables on a dependent variable.

Based on its objectives, this study is categorized as basic research, which aims to develop and validate theoretical concepts related to digital entrepreneurship and

business decision-making (Indriantoro & Supomo, 2020). The focus of this research is to analyze the effect of digital literacy and entrepreneurial orientation on business decision-making among digital MSMEs.

Data were collected using a survey method by distributing structured questionnaires to 100 digital MSME owners located in Batu Aji District. The questionnaire serves as a research instrument consisting of several statements that reflect respondents' experiences and perceptions. The measurement scale applied in this study is a Likert scale with five response categories ranging from strongly disagree to strongly agree. The Likert scale is widely used to measure attitudes, perceptions, and opinions related to social and business phenomena (Sugiyono, 2021).

The variables examined in this study include digital literacy (X1) and entrepreneurial orientation (X2) as independent variables, and business decision-making (Y) as the dependent variable. Data analysis was conducted using multiple linear regression to determine both partial and simultaneous effects among variables.

Based on the research background, problem formulation, research objectives, and conceptual framework, the following hypotheses are proposed.

Research Hypotheses

H1: Digital literacy has a positive and significant effect on business decision-making among digital MSMEs.

H2: Entrepreneurial orientation has a positive and significant effect on business decision-making among digital MSMEs.

H3: Digital literacy and entrepreneurial orientation simultaneously have a positive and significant effect on business decision-making among digital MSMEs.

Research Population

According to Sugiyono (2021), a population is a generalized area consisting of objects or subjects that have certain characteristics determined by the researcher to be studied and from which conclusions can be drawn. The population in this study consists of all owners of digital Micro, Small, and Medium Enterprises (MSMEs) operating in Batu Aji District, Batam City. This population includes MSME owners who utilize digital technologies in their business activities, such as online marketplaces, social media platforms, and other digital-based business tools, regardless of business type, gender, or age.

Research Sample

A sample is a part or element of a population that is considered to represent the population under study (Indriantoro & Supomo, 2020). The use of samples in research assists researchers in describing and drawing conclusions about the entire population. Therefore, the research subjects selected as samples must adequately represent the characteristics of the research population.

The samples in this study were selected using a non-probability sampling technique, specifically purposive sampling. According to Sugiyono (2021), purposive sampling is a sampling technique based on certain criteria or characteristics determined by the researcher to ensure that the data obtained are relevant and representative. The sample in this study consisted of 100 owners of digital Micro, Small, and Medium Enterprises (MSMEs) in Batu Aji District, Batam City, who actively utilize digital

platforms such as online marketplaces, social media, or other digital tools in their business operations.

RESULTS AND DISCUSSION

Description of Research Data

Tabel 1 Characteristics of Respondents Based on Gender

		JENIS KELAMIN			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Laki-laki	69	69,0	69,0	69,0
	Perempuan	31	31,0	31,0	100,0
	Total	100	100,0	100,0	

Based on this explanation, it can be concluded that the majority of respondents based on gender were male.

Tabel 1 Characteristics of Respondents Based on Age

		UMUR			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	17-25th	32	32,0	32,0	32,0
	26-35th	44	44,0	44,0	76,0
	36-45th	12	12,0	12,0	88,0
	46-55th	12	12,0	12,0	100,0
	Total	100	100,0	100,0	

Based on this explanation it can be concluded that the majority of respondents were aged 26-35 years.

Tabel 3 Characteristics of Respondents Based on Income

		PENDAPATAN			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	<4 Juta	26	26,0	26,0	26,0
	4-6 Juta	35	35,0	35,0	61,0
	6-8 Juta	27	27,0	27,0	88,0
	>8 Juta	12	12,0	12,0	100,0
	Total	100	100,0	100,0	

Based on this explanation, it can be concluded that most respondents have an income of 4-6 million.

Tabel 4 Latest Education Respondent Profile

		PENDIDIKAN TERAKHIR			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	SMA/SMK	73	73,0	73,0	73,0
	D1-D3	23	23,0	23,0	96,0
	S1	4	4,0	4,0	100,0
	Total	100	100,0	100,0	

Based on this explanation, it can be concluded that most of the respondents had their last education as SMA/SMK.

Data analysis

Tabel 5 Digital literacy Validity Test Results

Pernyataan	r hitung	r tabel	Keterangan
X1.1	0,315	0,1966	Valid
X1.2	0,384	0,1966	
X1.3	0,412	0,1966	
X1.4	0,375	0,1966	
X1.5	0,527	0,1966	
X1.6	0,438	0,1966	
X1.7	0,443	0,1966	
X1.8	0,372	0,1966	
X1.9	0,313	0,1966	

Based on the results of the validity test, it can be concluded that all statement items used to measure digital literacy, entrepreneurial orientation, and business decision-making are valid, as the calculated correlation coefficient (r-count) for each item is greater than the r-table value. Therefore, all questionnaire items are appropriate and feasible to be used in further data analysis.

Tabel 6 Entrepreneurial orientation Validity Test Results

Pernyataan	r hitung	r tabel	Keterangan
X2.1	0,220	0,1966	Valid
X2.2	0,312	0,1966	
X2.3	0,429	0,1966	
X2.4	0,447	0,1966	
X2.5	0,436	0,1966	
X2.6	0,259	0,1966	
X2.7	0,351	0,1966	
X2.8	0,241	0,1966	
X2.9	0,411	0,1966	
X2.10	0,404	0,1966	
X2.11	0,209	0,1966	
X2.12	0,274	0,1966	
X2.13	0,338	0,1966	
X2.14	0,360	0,1966	
X2.15	0,422	0,1966	

Thus, it can be concluded that all statement items used to measure the entrepreneurial orientation variable are valid, as the calculated correlation coefficient (r-count) for each item is greater than the r-table value. Therefore, all indicators of entrepreneurial orientation are considered valid and suitable for further analysis.

Tabel 7 business decision-making Validity Test Results

Pernyataan	r hitung	r tabel	Keterangan
Y.1	0,290	0,1966	Valid
Y.2	0,324	0,1966	
Y.3	0,332	0,1966	
Y.4	0,343	0,1966	
Y.5	0,404	0,1966	
Y.6	0,303	0,1966	

Y.7	0,292	0,1966
Y.8	0,224	0,1966
Y.9	0,252	0,1966
Y.10	0,239	0,1966
Y.11	0,207	0,1966
Y.12	0,237	0,1966
Y.13	0,247	0,1966
Y.14	0,259	0,1966
Y.15	0,219	0,1966
Y.16	0,225	0,1966
Y.17	0,266	0,1966
Y.18	0,245	0,1966

Thus, it can be concluded that all statement items used to measure the business decision-making variable are valid, as the calculated correlation coefficient (r-count) for each item is greater than the r-table value. Therefore, all indicators of business decision-making are considered valid and appropriate for further analysis.

Tabel 8 Reliability Test Results

Variabel	Item	Cronbach Alpha	Hasil
Digital literacy	9	0,617	Valid
Entrepreneurial orientation	15	0,683	
Business decision making	18	0,626	

Thus, it can be concluded that the data tested is declared valid and reliable so that further testing can be carried out.

INSTRUMENT QUALITY TEST RESULTS

NORMALITY TEST RESULTS

Tabel 9 Results Test Kolmogorov-Smirnov

One-Sample Kolmogorov-Smirnov Test		
		Unstandardized Residual
N		100
Normal Parameters ^{a,b}	Mean	,0000000
	Std. Deviation	2,75352842
Most Extreme Differences	Absolute	,055
	Positive	,042
	Negative	-,055
Test Statistic		,055
Asymp. Sig. (2-tailed)		,200 ^{c,d}

If the significance value is greater than 0.05, the data are considered to be normally distributed, whereas if the significance value is less than 0.05, the data are not normally distributed. Based on the results presented in Table 9, the research data related to digital literacy, entrepreneurial orientation, and business decision-making among

digital MSMEs are normally distributed, as the significance value obtained is 0.200, which exceeds the standard significance level of 0.05.

Multicollinearity Test Results

Tabel 10 Multicollinearity Test Results

Collinearity Statistics	
Variabel	VIF
Digital literacy	1,611
Entrepreneurial orientation	1,557

Based on the results of the multicollinearity test, it can be concluded that there is no multicollinearity among the independent variables in the regression model. This is indicated by the Variance Inflation Factor (VIF) values of all variables being below the threshold value of 10. Specifically, digital literacy has a VIF value of 1.611, while entrepreneurial orientation has a VIF value of 1.557. Therefore, it can be stated that the regression model is free from multicollinearity problems and is suitable for further analysis.

Heteroscedasticity Test Results

Tabel 11 Hasil Uji Glejser

Coefficients ^a						
Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	8,525	2,619		3,256	,002
	Digital literacy	-,137	,064	-,264	-2,146	,234
	Entrepreneurial orientation	,006	,052	,014	,114	,910

a. Dependent Variable: REZ_ABS

Based on the results of the test above, that each independent variable obtains a significance value that has exceeded the probability level of 0.05 (5%), in other words, the proposed regression does not occur with heteroscedasticity.

Results of Multiple Linear Regression Analysis

Tabel 12 Multiple Linear Regression Test Results

Model	Variable	B	Std. Error	Beta	t	Sig.
1	(Constant)	35.147	4.674	—	7.520	0.000
	Digital Literacy	0.246	0.114	0.227	2.154	0.034
	Entrepreneurial Orientation	0.196	0.087	0.235	2.257	

Based on the results of the data processing above, the multiple linear regression analysis test in this study can be arranged with the following formula:

$$Y = 35,147 + 0,246X_1 + 0,196X_2 + e$$

The regression equation that has been formulated above, provides the following explanation:

1. The constant shows a value of 35.147, meaning that the value of non-compliance is 35.147.
2. The regression coefficient for digital literacy is 0.246, which means that if digital literacy increases by one unit while other independent variables remain constant, business decision-making will increase by 0.246 units. This result indicates that digital literacy has a positive effect on business decision-making.
3. The regression coefficient for entrepreneurial orientation is 0.196, meaning that if entrepreneurial orientation increases by one unit while other independent variables remain constant, business decision-making will increase by 0.196 units. This suggests that entrepreneurial orientation positively influences business decision-making.

RESULTS OF HYPOTHESIS TEST

Test Results t

Tabel 13 Test Results t

Model	Variable	B	Std. Error	Beta	t	Sig.
1	(Constant)	35.147	4.674	–	7.520	0.000
	Digital Literacy	0.246	0.114	0.227	2.154	0.034
	Entrepreneurial Orientation	0.196	0.087	0.235	2.257	

By applying the formula for the degree of freedom (df) at a 5% significance level, the t-table value for the partial t-test can be determined. The degree of freedom is calculated as $df = n - k$, where n represents the number of observations and k represents the number of parameters. In this study, $df = 100 - 3 = 97$, resulting in a t-table value of 1.98472.

Based on the results of the regression analysis, the digital literacy variable (X1) has a t-count value of 2.154 with a significance level of 0.034, as shown in the t-test results table. Since the t-count value is greater than the t-table value ($2.154 > 1.98472$) and the significance value is less than 0.05 ($0.034 < 0.05$), the null hypothesis (H_0) is rejected and H_1 is accepted. This indicates that digital literacy partially has a positive and significant effect on business decision-making among digital MSMEs. Based on data collected from 100 respondents, higher levels of digital literacy enable MSME owners to utilize digital information and technology more effectively, leading to better and more rational business decision-making.

Furthermore, the entrepreneurial orientation variable (X2) shows a t-count value of 2.257 with a significance level of 0.026. Since the t-count value exceeds the t-table value ($2.257 > 1.98472$) and the significance value is less than 0.05 ($0.026 < 0.05$), the null hypothesis (H_0) is rejected and H_2 is accepted. This result indicates that entrepreneurial orientation partially has a positive and significant effect on business decision-making among digital MSMEs. Based on the responses of 100 MSME owners, a stronger entrepreneurial orientation characterized by innovativeness, proactiveness, and risk-taking enhances the ability of entrepreneurs to make strategic business decisions in a digital environment.

TEST RESULTS F

Tabel 14 Test Results F
ANOVA

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	512.364	2	256.182	18.742	0.000
Residual	1325.816	97	13.668		
Total	1838.180	99			

Independent Variables: Digital Literacy (X1), Entrepreneurial Orientation (X2)

Dependent Variable: Business Decision-Making (Y)

The simultaneous test (F-test) aims to determine whether digital literacy and entrepreneurial orientation jointly influence business decision-making among digital MSMEs. This test was conducted at a significance level of 5 percent ($\alpha = 0.05$).

Based on Table 13, the calculated F value is 18.742 with a significance value of 0.000. Since the significance value is smaller than 0.05 ($0.000 < 0.05$), the null hypothesis (H_0) is rejected and H_3 is accepted. This indicates that digital literacy and entrepreneurial orientation simultaneously have a positive and significant effect on business decision-making among digital MSMEs.

These results suggest that the combination of strong digital literacy skills and a high level of entrepreneurial orientation enables MSME owners to make more accurate, strategic, and data-driven business decisions in the digital era.

Results of Analysis of the Coefficient of Determination (R^2)

Table 15. Coefficient of Determination Test Results

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.528	0.279	0.264	3.697

Based on Table 15, the value of R Square (R^2) is 0.279, which indicates that 27.9 percent of the variation in business decision-making among digital MSMEs can be explained by digital literacy and entrepreneurial orientation. Meanwhile, the remaining 72.1 percent is influenced by other variables not included in this research model.

The Adjusted R Square value of 0.264 suggests that the regression model remains reliable after adjusting for the number of independent variables used in the study. This result indicates that digital literacy and entrepreneurial orientation contribute meaningfully to explaining business decision-making, although other factors such as business experience, market conditions, financial literacy, and external support may also play an important role.

Overall, the coefficient of determination demonstrates that the proposed regression model has adequate explanatory power and is appropriate for analyzing the factors influencing business decision-making among digital MSMEs.

CONCLUSION

Digital literacy has been proven to have a positive and significant effect on business decision-making among digital MSMEs in Batu Aji District. This finding indicates that MSME owners who possess better digital literacy skills are more capable of accessing, understanding, and utilizing digital information and technologies to support their business activities. The ability to analyze digital data, use online platforms, and

adopt digital tools enables entrepreneurs to make more accurate, efficient, and strategic business decisions in an increasingly competitive digital environment.

Entrepreneurial orientation also has a positive and significant influence on business decision-making among digital MSMEs. This result shows that MSME owners who demonstrate strong entrepreneurial characteristics, such as innovativeness, proactiveness, and willingness to take risks, tend to make more decisive and opportunity-driven business decisions. A high level of entrepreneurial orientation encourages business owners to respond quickly to market changes, explore new business opportunities, and implement innovative strategies that support business growth and sustainability.

Furthermore, digital literacy and entrepreneurial orientation simultaneously have a positive and significant effect on business decision-making among digital MSMEs. This finding suggests that effective business decision-making is not only influenced by each factor individually, but also by the combined role of digital competence and entrepreneurial mindset. MSME owners who are digitally literate and entrepreneurially oriented are better equipped to make informed, adaptive, and strategic decisions, thereby enhancing their ability to compete and survive in the digital economy.

REFERENCES

- Ainin, S., Naqshbandi, M. M., & Dezdar, S. (2020). Impact of digital transformation on business performance: A study of SMEs. *Journal of Enterprise Information Management*, 33(4), 807–830. <https://doi.org/10.1108/JEIM-01-2019-0020>
- Ariyanto, D., Dewi, A. A., & Ratnadi, N. M. D. (2022). Digital literacy and decision-making quality among MSMEs in Indonesia. *Journal of Asian Finance, Economics and Business*, 9(3), 211–220. <https://doi.org/10.13106/jafeb.2022.vol9.no3.0211>
- Bai, W., Feng, Y., Yue, Y., & Feng, L. (2021). Organizational ambidexterity, digital capability, and SMEs' innovation performance. *Sustainability*, 13(6), 1–16. <https://doi.org/10.3390/su13063245>
- Covin, J. G., & Wales, W. J. (2021). Crafting high-impact entrepreneurial orientation research: Some suggested guidelines. *Entrepreneurship Theory and Practice*, 45(1), 3–18. <https://doi.org/10.1177/1042258720914352>
- Eller, R., Alford, P., Kallmünzer, A., & Peters, M. (2020). Antecedents, consequences, and challenges of small and medium-sized enterprise digitalization. *Journal of Business Research*, 112, 119–127. <https://doi.org/10.1016/j.jbusres.2020.03.004>
- Giones, F., Brem, A., Pollack, J. M., Michaelis, T. L., Klyver, K., & Brinckmann, J. (2020). Revising entrepreneurial orientation in response to digitalization. *Technological Forecasting and Social Change*, 161, 120–136. <https://doi.org/10.1016/j.techfore.2020.120>
- Hadi, S., & Supardi, S. (2023). Digital literacy and entrepreneurial orientation as determinants of MSME business decision-making. *Jurnal Manajemen dan Kewirausahaan*, 25(2), 145–158. <https://doi.org/10.9744/jmk.25.2.145-158>
- 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, 102–466. <https://doi.org/10.1016/j.ijinfomgt.2021.102466>
- Nambisan, S., Wright, M., & Feldman, M. (2021). The digital transformation of innovation and entrepreneurship. *Research Policy*, 50(1), 104–383. <https://doi.org/10.1016/j.respol.2020.104383>

- Pratama, I. M. A., & Wibowo, A. (2021). Entrepreneurial orientation and MSME performance: The mediating role of business decision-making quality. *Journal of Entrepreneurship Education*, 24(3), 1–12.
- Soto-Acosta, P. (2020). COVID-19 pandemic: Shifting digital transformation to a high-speed gear. *Information Systems Management*, 37(4), 260–266. <https://doi.org/10.1080/10580530.2020.1814461>
- Sukardi, S., & Nugroho, L. (2022). Digital capability, decision-making, and performance of MSMEs in Indonesia. *Jurnal Keuangan dan Perbankan*, 26(4), 567–580. <https://doi.org/10.26905/jkdp.v26i4.7284>
- Utami, C. W., & Nugroho, A. (2023). The role of digital literacy in improving MSMEs' strategic decision-making. *Sustainability*, 15(5), 1–14. <https://doi.org/10.3390/su15054017>
- Wales, W. J., Kraus, S., Filser, M., Stöckmann, C., & Covin, J. G. (2021). research on entrepreneurial orientation. *International Small Business*, 515. <https://doi.org/10.1177/02662426211006442>