

ENTREPRENEURIAL ORIENTATION AS A MODERATING VARIABLE IN THE INFLUENCE OF E-COMMERCE ON THE SUSTAINABILITY OF FASHION MSMEs IN THE MARKET CENTER OF MEDAN CITY

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Abstract

This study aims to analyze the influence of e-commerce on the sustainability of fashion Micro, Small, and Medium Enterprises (MSMEs) and examine the role of entrepreneurial orientation as a moderating variable in fashion MSMEs in the Medan City Market Center. This study uses a quantitative approach with an associative causality method. The study population is fashion MSME traders in the Medan City Market Center who have used at least one e-commerce platform. The research sample consisted of 130 respondents determined by purposive sampling technique. Data collection was carried out by distributing questionnaires using a Likert scale of 1-4. The data analysis technique used Moderated Regression Analysis (MRA) with the help of the SPSS program. The results of the study indicate that e-commerce has a positive and significant effect on the sustainability of fashion MSMEs ($\beta = 0.555$; $p = 0.000 < 0.05$). Entrepreneurial orientation also has a positive and significant effect on the sustainability of MSMEs ($\beta = 0.302$; $p = 0.000 < 0.05$). The results of the interaction test show that entrepreneurial orientation is proven to positively and significantly moderate the influence of e-commerce on the sustainability of MSMEs, with an interaction coefficient of 0.018 and a significance of $0.014 < 0.05$, so it is classified as a Quasi Moderator. The Adjusted R Square value of 0.479 indicates that 47.9% of the variation in MSME sustainability can be explained by e-commerce, entrepreneurial orientation, and the interaction of the two. Thus, the use of e-commerce supported by a high entrepreneurial orientation can strengthen the ability of fashion MSMEs to maintain and develop the sustainability of their businesses.

Keywords: E-commerce, Entrepreneurial Orientation, Sustainability of MSMEs

1. INTRODUCTION

The development of digital technology has driven a significant transformation in the business practices of Micro, Small, and Medium Enterprises (MSMEs) in Indonesia, including the fashion sector. E-commerce provides opportunities for MSMEs to expand their marketing reach, simplify transactions, reach a wider consumer base, and maintain business continuity amidst increasingly fierce competition. However, owning an e-commerce account does not automatically guarantee business sustainability, as its effective use depends heavily on the business owner's internal capacity, one of which is entrepreneurial orientation. This phenomenon was clearly identified among fashion vendors at Medan's Central Market. A pre-survey of 10 vendors revealed that 80% of respondents experienced a decline in sales, but 70% of them already had online stores that were not being utilized optimally. Vendors also faced difficulties operating digital marketing features such as paid advertising and flash sales, minimal content innovation, and a lack of proactiveness in following market trends. These findings indicate that the difference in success among vendors in utilizing e-commerce lies in their entrepreneurial attitudes and capacities.

Previous studies have demonstrated a positive relationship between e-commerce, entrepreneurial orientation, and business sustainability, but collectively, they still leave a research gap. Mulyani and Sanjaya (2023) found entrepreneurial orientation as a pure moderator in the retail and apparel sector in general, without the context of traditional markets. Wijaya and Hermawan (2024) studied the context of West Java, which has a different digital ecosystem than North Sumatra. Sitorus and Rahayu (2025) focused on digital marketing in general, not e-commerce marketplaces specifically. Meanwhile, Violeta et al. (2024) and Setyono et al. (2024) demonstrated the influence of e-commerce on business sustainability without integrating entrepreneurial orientation as a moderating variable. This

study aims to fill this gap by specifically examining the role of entrepreneurial orientation as a moderator of the influence of e-commerce on the sustainability of fashion MSMEs in the context of traditional markets in Medan City. Based on the description, this study aims to analyze: (1) the influence of e-commerce on the sustainability of fashion MSMEs; (2) the influence of entrepreneurial orientation on the sustainability of fashion MSMEs; and (3) the role of entrepreneurial orientation in moderating the influence of e-commerce on the sustainability of fashion MSMEs in the Medan City Market Center.

2. RESEARCH METHOD

This study uses a quantitative approach with the associative causality method to test the influence between variables. The study population is fashion MSME traders in the Medan City Market Center who have used at least one e-commerce platform. The sample size was determined using the Hair et al. (2014) approach based on the number of research indicators, considering that the exact population of traders who actively use e-commerce has not been officially recorded. The study sample consisted of 130 respondents selected using a purposive sampling technique, with the following criteria: actively selling fashion products in the Medan City Market Center, having traded for at least one year, and owning and actively using at least one e-commerce platform.

Data were collected through a questionnaire with a Likert scale of 1-4 (Strongly Disagree to Strongly Agree), supported by observation and documentation. The E-commerce variable (X) was measured through 10 statement items representing five indicators, namely information dissemination, digital purchases, online sales, digital marketing, and the use of electronic media. The Entrepreneurial Orientation variable (Z) was measured through 8 statement items representing three dimensions, namely innovative, proactive, and courage to take risks. The Fashion MSME Sustainability variable (Y) was measured through 9 statement items representing five indicators, namely increasing profits, sales growth, expanding market reach, increasing the number of workers, and increasing production capacity.

Table 1. Operational Definitions of Research Variables

No	Variables	Operational Definition	Indicator	Scale	Source
1	E-Commerce (X) - Independent Variable	Activities of disseminating information, purchasing, selling and marketing fashion products through internet-based electronic systems.	Information dissemination, digital purchasing, online sales, digital marketing, use of electronic means	Ordinal (Likert 1-4)	Maulana & Susilo (2015)
2	Entrepreneurial Orientation (Z) - Moderating Variable	Strategic attitudes, mentality, and behavior of traders in identifying and exploiting digital opportunities.	Innovative, proactive, risk-taking	Ordinal (Likert 1-4)	Miller (1983) in Suwandewi & Giantari (2022)
3	Sustainability of Fashion MSMEs (Y) - Dependent Variable	The ability of fashion businesses to continue to grow and maintain their existence in the long term.	Increased profits, sales growth, expanded market reach, increased workforce, increased production/stock capacity	Ordinal (Likert 1-4)	Yanti et al. (2018)

Source: Processed data (2026)

The research instruments were tested for validity and reliability before being used for analysis. Data were analyzed through classical assumption tests (normality, multicollinearity, and heteroscedasticity), followed by Moderated Regression Analysis (MRA) using SPSS. Before forming the interaction variable, variables X and Z were first subjected to a mean-centering procedure and standardized to z-scores to avoid high multicollinearity between the main variables and their interaction variables. MRA testing was conducted through three stages of hierarchical

regression equations to test the direct effect of X on Y, the direct effect of Z on Y, and the effect of the X×Z interaction on Y.

3. RESULTS AND DISCUSSION

Respondent Characteristics

Questionnaires were distributed to 130 respondents, and all were returned and processed (100% return rate). The majority of respondents were female (63.1%), with the largest age range being 25-35 years (40.0%). The most commonly sold fashion product was clothing (44.6%). In terms of business tenure, 47.7% of respondents had been selling for more than 5 years. The most commonly used e-commerce platforms were Shopee (30.0%) and TikTok Shop (23.8%). The majority of respondents (63.8%) had 1-2 employees.

Table 2. Respondent Characteristics

Characteristics	Category	Frequency	Percentage (%)
Gender	Man	48	36.9
	Woman	82	63.1
Age	< 25 years	18	13.8
	25-35 years	52	40.0
	36-45 years old	37	28.5
	> 45 years	23	17.7
Types of products	Clothes	58	44.6
	Sandals	22	16.9
	Bag	19	14.6
	Accessories	17	13.1
	Other	14	10.8
Length of Business	1-2 years	25	19.2
	3-5 years	43	33.1
	> 5 years	62	47.7
E-Commerce Platform	Shopee	39	30.0
	TikTok Shop	31	23.8
	Lazada	12	9.2
	WhatsApp Business	25	19.2
	Instagram	18	13.8
	Other	5	4.0

Source: Processed data (2026)

Validity and Reliability Test

All 27 statement items were declared valid because the calculated r-value was greater than the r-table (0.172) at a significance level of 5%. The results of the reliability test showed a Cronbach's Alpha value for the E-commerce variable of 0.950, Entrepreneurial Orientation of 0.933, and Sustainability of Fashion MSMEs of 0.933 — all above 0.70, so the instrument was declared reliable.

Table 3. Validity and Reliability Test Results

Variables	Range of r-count	r-table	Cronbach's Alpha	Information
E-Commerce (X)	0.510 - 0.674	0.172	0.950	Valid & Reliable
Entrepreneurial Orientation (Z)	0.697 - 0.800	0.172	0.933	Valid & Reliable
Sustainability of Fashion MSMEs (Y)	0.550 - 0.667	0.172	0.933	Valid & Reliable

Source: SPSS 23 Output Results

Classical Assumption Test

The Kolmogorov-Smirnov normality test results showed a significance value of 0.200 (> 0.05), so the data is normally distributed. The multicollinearity test showed a tolerance value of 0.998 and a VIF of 1.002, indicating no multicollinearity between the E-commerce and Entrepreneurial Orientation variables. The heteroscedasticity test through a scatterplot graph showed that the points were randomly spread without forming a specific pattern, so there was no heteroscedasticity. With the fulfillment of these three assumptions, the regression model is suitable for further testing.

Moderated Regression Analysis (MRA) Results

The Model Summary results show an R value of 0.701, R Square of 0.491, and Adjusted R Square of 0.479. These values indicate that 47.9% of the variation in Fashion MSME Sustainability can be explained by E-commerce, Entrepreneurial Orientation, and the interaction of the two, while 52.1% is explained by other factors outside the research model.

Table 4. Hypothesis Test Results (Partial t-Test)

Hypothesis	Coefficient (B)	Sig.	Information
H1: E-commerce $\rightarrow$ Sustainability of MSMEs	0.555	0,000	Accepted
H2: Entrepreneurial Orientation $\rightarrow$ Sustainability of MSMEs	0.302	0,000	Accepted
H3: E-commerce Interaction $\times$ Entrepreneurial Orientation $\rightarrow$ MSME Sustainability	0.018	0.014	Accepted

Source: Data processed by SPSS (2026)

The test results show that all three hypotheses are accepted. E-commerce has a positive and significant effect on the sustainability of fashion MSMEs ($\beta = 0.555$; $p = 0.000 < 0.05$), as does Entrepreneurial Orientation ($\beta = 0.302$; $p = 0.000 < 0.05$). The main focus of this study, the $X \times Z$ interaction coefficient is positive and significant ($\beta = 0.018$; $p = 0.014 < 0.05$), proving that Entrepreneurial Orientation positively moderates the effect of E-commerce on the sustainability of fashion MSMEs. The resulting moderation regression equation is: $Y = 22.904 + 0.555X + 0.302Z + 0.018(X \times Z) + e$.

Based on the typology of Sharma, Durand, and Gur-Arie (1981), because Entrepreneurial Orientation proved significant both as a direct influence on Y and as an interaction variable, this variable is classified as a Quasi Moderator — not just a passive amplifier, but also contributes directly to business sustainability. This finding differs from Mulyani and Sanjaya (2023) who found Entrepreneurial Orientation as a Pure Moderator in the general retail context; this difference is thought to occur because the context of the traditional fashion sector market in Medan City has different characteristics, where the entrepreneurial orientation of traders plays a role not only in strengthening the effectiveness of e-commerce, but also directly determines the sustainability of the business itself.

Discussion

The positive influence of e-commerce on the sustainability of fashion MSMEs confirms that utilizing digital platforms allows merchants to expand their market reach without being limited by physical store locations, accelerate

transactions, and improve operational cost efficiency. This finding is consistent with Violeta et al. (2024) and Setyono et al. (2024) who also demonstrated the role of e-commerce in supporting the sustainability of MSME businesses.

The positive influence of Entrepreneurial Orientation indicates that innovative, proactive, and risk-taking attitudes are important determinants of business sustainability, in line with Wijaya and Hermawan (2024). The main contribution of this study is proving the moderating role of Entrepreneurial Orientation: merchants who utilize e-commerce without a strong entrepreneurial attitude—for example, simply setting up an online store without actively innovating or responding to trends—do not reap the maximum benefits from digitalization. Conversely, e-commerce will have a much greater impact on business sustainability when merchants have a strong entrepreneurial orientation.

4. CONCLUSION AND SUGGESTIONS

Based on the research results, it can be concluded that: (1) E-commerce has a positive and significant effect on the sustainability of fashion MSMEs in the Medan City Market Center; (2) Entrepreneurial orientation has a positive and significant effect on the sustainability of fashion MSMEs; and (3) Entrepreneurial orientation is proven to positively moderate the influence of e-commerce on the sustainability of fashion MSMEs, and is classified as a quasi-moderator.

Based on these conclusions, the Medan City Government is advised to conduct targeted digital mentoring programs, such as training on marketplace utilization, product content creation, and paid advertising. Market Center managers are advised to provide content creation and live streaming facilities, and assist with MSME promotion through digital market media. Fashion MSMEs are advised to utilize e-commerce more actively and in a planned manner, while strengthening innovative, proactive, and risk-taking attitudes. Future researchers are advised to add other variables such as digital literacy or access to capital, and expand the research object beyond the Medan City Market Center.

REFERENCES

- Ghozali, I. (2016). *Multivariate Analysis Application with IBM SPSS 23 Program* (8th ed.). Diponegoro University Publishing Agency.
- Hair, JF, Black, WC, Babin, BJ, & Anderson, RE (2014). *Multivariate Data Analysis* (7th ed.). Pearson Education.
- Miller, D. (1983). The correlates of entrepreneurship in three types of firms. *Management Science*, 29(7), 770-791. <https://doi.org/10.1287/mnsc.29.7.770>
- Mulyani, S., & Sanjaya, IGN (2023). Entrepreneurial orientation as a moderating variable in the influence of e-commerce on retail business sustainability. *Journal of Management and Entrepreneurship*, 11(2), 145-158.
- Sharma, S., Durand, R. M., & Gur-Arie, O. (1981). Identification and analysis of moderator variables. *Journal of Marketing Research*, 18(3), 291-300.
- Sugiyono. (2022). *Quantitative, Qualitative, and R&D Research Methods*. Alfabeta.
- Suwandewi, NPR, & Giantari, IGAK (2022). The influence of entrepreneurial orientation and market orientation on the sustainability of MSMEs. *E-Journal of Management*, Udayana University, 11(4), 380-399.
- Violeta, OD, Yuliusman, Y., & Erwati, M. (2024). The influence of financial literacy and e-commerce on business sustainability through business performance in MSMEs. *Journal of Applied Management and Finance*, 13(3), 1025-1035.
- Vrontis, D., Chaudhuri, R., & Chatterjee, S. (2022). Adoption of digital technologies by SMEs for sustainability and value creation: Moderating role of entrepreneurial orientation. *Sustainability*, 14(13), 7949. <https://doi.org/10.3390/su14137949>
- Wijaya, R., & Hermawan, A. (2024). The role of entrepreneurial orientation in moderating the influence of digital technology adoption on MSME business performance. Unpublished research, West Java, Indonesia.
- Yanti, VA, Amanah, S., Muldjono, P., & Asngari, P. (2018). Factors influencing the sustainability of micro, small, and medium enterprises in Bandung and Bogor. *Journal of Agricultural Technology Assessment and Development*, 20(2), 137-148.