




# “Driving sustainability entrepreneurship in Indonesian batik MSMEs: The role of sustainability orientation and government support”

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<b>ARTICLE INFO</b>	Nugroho Mardi Wibowo (2025). Driving sustainability entrepreneurship in Indonesian batik MSMEs: The role of sustainability orientation and government support. <i>Problems and Perspectives in Management</i> , 23(1), 544-556. doi: <a href="https://doi.org/10.21511/ppm.23(1).2025.41">10.21511/ppm.23(1).2025.41</a>
<b>DOI</b>	<a href="http://dx.doi.org/10.21511/ppm.23(1).2025.41">http://dx.doi.org/10.21511/ppm.23(1).2025.41</a>
<b>RELEASED ON</b>	Monday, 24 March 2025
<b>RECEIVED ON</b>	Thursday, 26 September 2024
<b>ACCEPTED ON</b>	Tuesday, 11 March 2025
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<b>JOURNAL</b>	"Problems and Perspectives in Management"
<b>ISSN PRINT</b>	1727-7051
<b>ISSN ONLINE</b>	1810-5467
<b>PUBLISHER</b>	LLC “Consulting Publishing Company “Business Perspectives”
<b>FOUNDER</b>	LLC “Consulting Publishing Company “Business Perspectives”



NUMBER OF REFERENCES

**39**



NUMBER OF FIGURES

**0**



NUMBER OF TABLES

**5**

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## BUSINESS PERSPECTIVES



LLC "CPC "Business Perspectives"  
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Sumy, 40022, Ukraine  
[www.businessperspectives.org](http://www.businessperspectives.org)

**Received on:** 26<sup>th</sup> of September, 2024

**Accepted on:** 11<sup>th</sup> of March, 2025

**Published on:** 24<sup>th</sup> of March, 2025

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# DRIVING SUSTAINABILITY ENTREPRENEURSHIP IN INDONESIAN BATIK MSMEs: THE ROLE OF SUSTAINABILITY ORIENTATION AND GOVERNMENT SUPPORT

## Abstract

As a traditional Indonesian craft, batik holds immense cultural significance and economic potential. The COVID-19 pandemic has caused a significant decline in the growth of batik micro, small, and medium enterprises (MSMEs) in Indonesia. This study aims to investigate the role of sustainable orientation and government support in encouraging sustainable entrepreneurship within this sector. The data were obtained using purposive sampling of 32 MSMEs and 89 respondents, including owners, managers, and senior employees. Data analysis was done using the Structural Equation Modeling – Partial Least Square (SEM-PLS) method. The results reveal that economic factors have the greatest influence on the development of sustainable entrepreneurial businesses. While social and environmental considerations also play a role, they are secondary to economic issues. In addition, the study reveals that a strong sustainability orientation, characterized by a balanced emphasis on economic, social, and environmental dimensions, as well as supportive government policies, significantly encourages sustainable entrepreneurship. This orientation motivates businesses to adopt long-term perspectives, prioritize sustainable resource use, and consider the social impact of their operations. It also highlights practical strategies for policymakers and entrepreneurs to integrate sustainability into traditional industries. Therefore, this study contributes to the ongoing discourse on sustainable entrepreneurship, which offers insights into harnessing cultural heritage for economic advantage globally post-pandemic.

## Keywords

sustainable entrepreneurship, economic development, environmental sustainability, entrepreneurial bricolage, post-COVID-19, SEM-PLS analysis

## JEL Classification

L26, Q01, M14

## INTRODUCTION

Micro, small, and medium enterprises (MSMEs) are critical in the Indonesian economy. This is particularly evident in the case of batik, a sector deeply rooted in Indonesian culture and craftsmanship, where MSMEs are a cornerstone. Batik MSMEs in East Java alone not only make a great contribution to the local economy but also support the tradition of artworks. However, the COVID-19 pandemic from March 2020 to August 2021 has brought unprecedented challenges. Batik industry is considered the 'most affected' businesses by the epidemic (Munawir et al., 2024). As a result, batik businesses faced severe financial strain and experienced significant disruptions to their operations.

Moreover, the environmental impact of the batik industry, particularly in terms of dye usage, water pollution, and waste generation, demands urgent attention. Traditional production processes often in-



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### Conflict of interest statement:

Author(s) reported no conflict of interest

volve the use of synthetic dyes and chemicals that can have detrimental effects on the environment and the health of artisans. The disposal of textile waste and wastewater management from dyeing processes also pose significant environmental challenges. These environmental concerns underscore the need to shift toward more sustainable and environmentally responsible practices within the batik industry.

In Indonesia, MSMEs are three times more likely than medium- and large-scale enterprises to face the risk of bankruptcy. This condition highlights the urgent need for innovative strategies to enhance the resilience and sustainability of batik MSMEs. Traditional profit-driven models are no longer sufficient. A more holistic approach, embracing the “triple bottom line” principles – economic, social, and environmental sustainability – is crucial for their long-term success (Gundry et al., 2011; Hooi et al., 2016; Nor-Aishah et al., 2020). The success of businesses in today’s dynamic and interconnected world increasingly hinges on their ability to operate sustainably. This is particularly crucial for micro, small, and medium enterprises in sectors like batik, which are deeply rooted in cultural heritage and face significant environmental and economic challenges.

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## 1. LITERATURE REVIEW AND HYPOTHESES

Research on sustainable entrepreneurship and the role of micro, small, and medium enterprises (MSMEs) in the creative industry has attracted widespread attention in recent decades. In the context of Indonesian batik, it is important to understand how MSMEs can survive and thrive, especially after the impact of global crises such as the COVID-19 pandemic (Karsana et al., 2022). Based on a report by the International Labour Organization (2020), around 65% of businesses in Indonesia were forced to stop operating due to the pandemic, with MSMEs facing a risk of bankruptcy three times greater than medium and large-scale businesses.

The COVID-19 outbreak has necessitated a shift in approach to empowering small and medium enterprises (SMEs) in the batik industry. Traditional entrepreneurial models, often characterized by a singular focus on profit maximization, have proven inadequate in the face of these unprecedented challenges (Nag, 2021). The imperative now lies in transitioning toward sustainable business models that seamlessly integrate economic, social, and environmental considerations (Nwosu et al., 2024; Soto-Acosta et al., 2016). Thus, these businesses must adopt sustainable practices in their business operations (Chaudhary et al., 2022; Palacios Temprano et al., 2020; Sisaye, 2011).

Sustainable entrepreneurship has emerged as a critical approach for businesses seeking to address environmental and social challenges while achiev-

ing economic growth. Sustainable entrepreneurship is a synergistic convergence of sustainable management principles and entrepreneurial endeavors (Belz & Binder, 2017; Mueller et al., 2018). It emphasizes strengthening innovative products and services, creating processes that do not harm the environment, and the more efficient use of energy and resources (Alkaraan et al., 2024; Rosário et al., 2022). Sustainable entrepreneurship serves as a paradigm that addresses environmental challenges, supply chain management, and inadequate environmental efficiency faced by small and medium-sized enterprises (Koutsopoulos, 2021; Rao et al., 2023). Hence, it has pushed MSMEs toward sustainable development (Nave & Franco, 2019; Schaltegger et al., 2016). This paradigm also addresses the scarcity of green goods and inadequate sustainable technology innovation (Bonfanti et al., 2016; House et al., 2014).

Some factors that can affect the success of sustainable entrepreneurship for small and medium enterprises in the batik industry include bricolage entrepreneurship, sustainability orientation, entrepreneurial orientation, entrepreneurial leadership, and government support. Bricolage entrepreneurship refers to the creative and intuitive behavior of entrepreneurs in solving organizational problems by optimizing limited resources (Alsharif et al., 2021; Hanan et al., 2021; Musa et al., 2022; Nor-Aishah et al., 2020). Hooi et al. (2016) reported that bricolage entrepreneurial behavior could improve the sustainability of MSME entrepreneurship. Meanwhile, Hanan et al. (2021) suggest that there is no significant correlation

between entrepreneurial bricolage and sustainable entrepreneurship. In further studies, measuring the influence of entrepreneurship bricolage on sustainable entrepreneurship was crucial (Imran & Iqbal, 2024; Nuseir & Aljumah, 2022). For this reason, the research to be carried out requires the right approach in order to provide accurate and reliable results in measuring the influence of entrepreneurial bricolage on sustainable entrepreneurship.

A comprehensive understanding of sustainable entrepreneurship requires thoroughly investigating key concepts, such as sustainability orientation. A sustainability orientation represents a proactive corporate approach that seeks to mitigate environmental challenges by integrating ecological and social considerations into its operational practices (Adomako et al., 2021; Roxas & Coetzer, 2012). Some studies have concluded that sustainability orientation has a positive impact on improving sustainable entrepreneurship performance (Ahmad et al., 2020; Hanan et al., 2021). Entrepreneurial orientation consists of two dimensions: entrepreneurial behavior and managerial attitude toward risk. Entrepreneurial behavior involves innovation and proactivity, while managerial attitude toward threat refers to the mindset of managers who are responsible for formulating and executing business plans in dynamic environments (Anderson et al., 2015). Musa et al. (2022) revealed that initiative-taking behavior significantly impacts new entrepreneurs' performance, while innovative thinking and risk-taking do not disturb the efficacy of new entrepreneurs. Nguyen et al. (2021) indicated that there was no significant correlation between entrepreneurial orientation and company performance. For this, government initiatives are an attempt to bolster the capacity and development of MSMEs by fostering entrepreneurial endeavors (Ahmad et al., 2020). The role of government in fostering sustainable entrepreneurship is vital (Ahmad et al., 2020; Musa et al., 2022).

Overall, the literature shows that the integration of sustainability orientation strongly influences sustainability in the entrepreneurship of small and medium-sized enterprises, the ability to innovate through bricolage, and government support. The combination of these elements is believed to help MSMEs cope with increasingly complex economic

and social challenges, especially in the batik sector, which has a high cultural value in Indonesia. Thus, this study aims to identify the key factors contributing to sustainable entrepreneurship in batik MSMEs in East Java, especially after the impact of the COVID-19 pandemic. The focus of this analysis is on sustainability orientation, a bricolage of entrepreneurship, and government support in strengthening the resilience and adaptation of MSMEs. Based on the literature review, the hypotheses are as follows:

- H1: *Entrepreneurship bricolage has no significant impact on sustainable entrepreneurship.*
- H2: *Sustainability orientation has a significant positive impact on sustainable entrepreneurship.*
- H3: *Sustainability orientation has a significant positive impact on entrepreneurship bricolage.*
- H4: *Entrepreneurship orientation has no significant impact on sustainable entrepreneurship.*
- H5: *Entrepreneurship orientation has no significant impact on entrepreneurship bricolage.*
- H6: *Entrepreneurial leadership has no significant impact on sustainable entrepreneurship.*
- H7: *Entrepreneurial leadership has a significant positive impact on entrepreneurship bricolage.*
- H8: *Government support has a significant positive impact on sustainable entrepreneurship.*
- H9: *Government support has a significant positive impact on entrepreneurship bricolage.*

## 2. METHOD

This study uses a quantitative approach with primary data collected through questionnaires. The data used in this study came from batik MSMEs in East Java Province, which became the research population. This population specifically includes batik MSMEs operating in several areas, name-

ly Jombang, Tuban, Lamongan, Sidoarjo, and Surabaya Regencies. The purposive sampling technique is applied to select batik MSMEs that meet certain criteria, namely: (1) continue to operate during the research period, and (2) have a minimum of four staff members. Additionally, data were collected over a four-month period from March to June 2023. The study participants included owners, managers (husband/wife of the owner or employees entrusted as managers), and senior employees with the longest working period in each batik MSME. Based on this criterion, as many as 32 batik MSMEs were selected as samples, with a total of 89 individuals as respondents. The sample of respondents was divided by job role, namely 32 owners (35.96%), 14 managers (15.73%), and 43 senior employees (48.31%).

Moreover, the study utilized a questionnaire to gather data pertaining to the research variables. The questionnaire consisted of 44 items that were assessed using a 7-point Likert scale, with a range from “strongly disagree” (1) to “strongly agree” (7). Each research variable was measured using several items adjusted from previous research.

Sustainable entrepreneurship was assessed through 13 items adapted from the triple bottom line concept, covering economic subdimensions. Four items were adapted from Laosirihongthong et al. (2013), Hooi et al. (2016), Nor-Aishah et al. (2020), Alsharif et al. (2021). Social aspects covered five items from Hooi et al. (2016) and Nor-Aishah et al. (2020), and the environment had four items from Hooi et al. (2016).

Sustainability orientation was measured by five items adapted from the scale developed by Hooi et al. (2016). Entrepreneurial orientation was assessed with six items for innovative and proactive behavior, as well as three items for managerial attitudes toward risk, adapted from Anderson et al. (2015) and Hooi et al. (2016). Entrepreneurial bricolage used five customized items from Gundry et al. (2011). Government support was measured by seven items adapted from Musa et al. (2022). Finally, entrepreneurial leadership was assessed through five items adapted from Alsharif et al. (2021).

After data collection, structural equation modeling (SEM) with the partial least squares (PLS) approach

was employed for data analysis. This approach was implemented using PLS software version 3. SEM-PLS was chosen due to its ability to effectively analyze structural models involving latent variables and test the relationships between them simultaneously. Data analysis typically involves several key steps. First, instrument validity and reliability are assessed. This involves examining factor loadings, Cronbach’s alpha, and composite reliability (CR) values to ensure the research instrument is consistent and measures its intended measure. Next, the measurement model is evaluated. This includes assessing convergent validity through average variance extracted (AVE) values and discriminant validity using the Fornell–Larcker criterion. Subsequently, structural model analysis is conducted to test the relationships between latent variables. Path coefficients are evaluated based on *t*-statistical values and *p*-values to determine the significance of these relationships. Finally, hypothesis testing is performed. Hypotheses are tested based on the path coefficients obtained from the SEM-PLS analysis. A hypothesis is considered significant if the *p*-value is less than 0.05, indicating a statistically significant influence between the variables. Eventually, this study aims to identify the key factors that affect sustainable entrepreneurship in batik MSMEs in East Java, as well as to examine the role of government support moderation in the relationship between sustainability orientation and MSME sustainability.

### 3. RESULTS

Firstly, the study examines the measurement models for both first-order and second-order constructs to ensure their psychometric properties. Subsequently, the analysis proceeds to evaluate the structural model, examining the hypothesized relationships between sustainability orientation, government support, and sustainable entrepreneurship within the context of Indonesian batik MSMEs.

#### 3.1. Analysis of measurement models in first-order constructs

The initial stage of evaluating the measurement model’s validity involves assessing convergent validity using reflective indicators. According to Ghozali

(2014), a reflective indicator is considered valid if its loading value is greater than 0.5 or its *t*-statistic is higher than 1.96. This criterion ensures that the indicators are significantly and meaningfully related to their respective latent constructs. The results of this assessment are presented in Table 1.

Table 1 provides insight into how well the indicators in this study meet both criteria. The convergence validity is measured through the loading factor value of each indicator against its latent con-

struct. An indicator is considered valid if its loading factor value is above 0.5. Based on the data presented, some indicators do not meet this criterion. SO1 (0.486), EB5 (0.301), EB6 (0.339), EL5 (0.499), GS1 (0.488), GS3 (0.148), GS7 (0.349), and SOC4 (0.016) indicators have loading factor values below the threshold of 0.5. This indicates that these indicators are invalid and do not measure their latent constructs well. Therefore, these indicators should be removed from the model to improve the overall validity of the instrument.

**Table 1.** Construct validity and reliability test results

Variables	Items	Factor Loading	Cronbach's Alpha	rho_A	Composite Reliability	Average Variance Extracted (AVE)
Sustainability Orientation	SO1	0.486	0.751	0.776	0.838	0.518
	SO2	0.616				
	SO3	0.761				
	SO4	0.838				
	SO5	0.832				
Entrepreneurial Behavior	EB1	0.873	0.738	0.819	0.829	0.477
	EB2	0.811				
	EB3	0.775				
	EB4	0.796				
	EB5	0.301				
	EB6	0.339				
Managerial attitude toward risk	MAR1	0.840	0.807	0.819	0.888	0.727
	MAR2	0.949				
	MAR3	0.759				
Entrepreneurial Leadership	EL1	0.822	0.716	0.736	0.817	0.478
	EL2	0.638				
	EL3	0.761				
	EL4	0.692				
	EL5	0.499				
Government Support	GS1	0.488	0.768	0.903	0.807	0.412
	GS2	0.892				
	GS3	0.148				
	GS4	0.847				
	GS5	0.705				
	GS6	0.651				
	GS7	0.349				
Entrepreneurship Bricolage	EBR1	0.694	0.792	0.825	0.851	0.536
	EBR2	0.781				
	EBR3	0.831				
	EBR4	0.727				
	EBR5	0.608				
Economic aspect	EC1	0.891	0.861	0.859	0.908	0.714
	EC2	0.866				
	EC3	0.922				
	EC4	0.678				
Social aspect	SOC1	0.782	0.697	0.787	0.787	0.480
	SOC2	0.821				
	SOC3	0.629				
	SOC4	0.016				
	SOC5	0.849				
Environmental aspect	ENV1	0.719	0.859	0.869	0.906	0.708
	ENV2	0.903				
	ENV3	0.920				
	ENV4	0.808				

The reliability of the construct is evaluated through Cronbach's alpha and composite reliability. Cronbach's alpha value of more than 0.7 indicates that the construct has good reliability. Similarly, a composite reliability value of more than 0.8 also indicates high reliability. Some constructs meet this criterion, but some do not.

Sustainability orientation has a Cronbach's alpha of 0.751 and a composite reliability of 0.838, indicating good reliability with an AVE of 0.518. Entrepreneurial behavior shows Cronbach's alpha of 0.738 and composite reliability of 0.829, but its AVE of 0.477, slightly below the threshold of 0.5. Managerial attitude to risk has a Cronbach's alpha of 0.807 and a composite reliability of 0.888, with an

AVE of 0.727, indicating good reliability and validity. Entrepreneurial leadership showed a less-than-ideal value, with Cronbach's alpha of 0.716, composite reliability of 0.817, and AVE of 0.478. Government support has a lower value, with Cronbach's alpha of 0.768, composite reliability of 0.807, and AVE of 0.412. Entrepreneurship bricolage has a Cronbach's alpha of 0.792 and a composite reliability of 0.851, with an AVE of 0.536. Economics showed excellent scores, with Cronbach's alpha of 0.861, composite reliability of 0.908, and AVE of 0.714. The social aspect has a Cronbach's alpha of 0.697, a composite reliability of 0.787, and an AVE of 0.480. The environmental aspect showed excellent values, with Cronbach's alpha of 0.859, composite reliability of 0.906, and AVE of 0.708.

**Table 2.** Construct validity and reliability test results (Re-examination)

Variables	Items	Factor Loading	Mean*)	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Sustainability Orientation	SO2	0.611	4.820	0.796	0.866	0.622
	SO3	0.773	5.225			
	SO4	0.854	5.146			
	SO5	0.888	4.753			
Entrepreneurial Behavior	EB1	0.869	5.494	0.846	0.896	0.684
	EB2	0.848	4.831			
	EB3	0.809	5.337			
	EB4	0.780	5.067			
Managerial Attitude to Risk	MAR1	0.840	5.652	0.807	0.888	0.727
	MAR2	0.950	5.281			
	MAR3	0.758	5.112			
Entrepreneurial Leadership	EL1	0.902	5.303	0.747	0.841	0.572
	EL2	0.693	5.743			
	EL3	0.696	6.393			
Government Support	GS2	0.896	5.382	0.797	0.863	0.614
	GS4	0.838	5.034			
	GS5	0.715	3.831			
	GS6	0.663	3.483			
Entrepreneurship Bricolage	EBR1	0.698	5.180	0.792	0.847	0.529
	EBR2	0.781	5.101			
	EBR3	0.831	5.225			
	EBR4	0.732	4.820			
	EBR5	0.569	5.393			
Economic aspect	EC1	0.915	2.933	0.861	0.910	0.720
	EC2	0.893	3.000			
	EC3	0.929	3.112			
	EC4	0.620	3.663			
Social aspect	SOC1	0.801	5.449	0.782	0.854	0.599
	SOC2	0.807	4.831			
	SOC3	0.565	5.348			
	SOC5	0.886	5.034			
Environmental aspect	ENV1	0.822	2.809	0.859	0.893	0.678
	ENV2	0.839	3.753			
	ENV3	0.882	3.551			
	ENV4	0.745	3.697			

Note: \*Means items are calculated based on a 7-point Likert scale (1-7).

These results show that most of the constructs in this study have good reliability, but the validity of some indicators still needs to be improved. The sustainability-oriented constructs, such as managerial attitudes toward risk, entrepreneurial, economic, and various aspects of bricolage, demonstrated strong psychometric properties, indicating that the chosen indicators effectively measure the intended constructs. Conversely, the constructs of entrepreneurial behavior, entrepreneurial leadership, government support, and social support exhibited lower average variance extracted (AVE) values, suggesting that the current indicators may not fully capture the variance within these constructs. To address this issue, improvements to the existing questionnaire items or adding more representative items may be necessary to improve the validity of these constructs.

Furthermore, a re-examination of the data, omitting the specified indicators, was carried out. The resulting factor loadings were all found to be greater than 0.5, as presented in Table 2.

The re-examination of validity and reliability test results shows that this research instrument has good quality. All factors loading values were above the 0.5 threshold, indicating that each questionnaire item contributed significantly to the latent variable it measured. For example, the MAR2 item in the managerial attitude toward risk variable has the highest factor-loading value of 0.950, showing a solid correlation with the measured construct. The mean value of the questionnaire items ranged from 2.933 to 6.393, indicating a variation in the respondents' assessment on the 7-point Likert scale. This shows that the instrument can capture the difference in respondents' perceptions well.

In terms of reliability, Cronbach's alpha score for all latent variables was above 0.70, with the highest value of 0.861 in the economic variable and the lowest of 0.747 in the entrepreneurial leadership vari-

able, indicating good internal consistency. In addition, the composite reliability value for all variables is also above 0.8, which reinforces the finding that this instrument is highly reliable. An AVE value above 0.5 indicates good convergent validity, with the managerial attitude to risk variable having the highest AVE of 0.727. Nonetheless, some items with factor-loading values close to the minimum limit, such as SOC3, may require further evaluation to ensure their suitability in measuring the construct in question. These results show that this research instrument is valid and reliable for use in this study's relevant construction measurements.

### 3.2. Analysis of measurement models in second-order constructs

The analysis proceeded to evaluate the measurement models for the second-order constructs. These constructs are composed of multiple first-order constructs. This step aims to assess the validity and reliability of these higher-order constructs and ensure that they accurately represent the underlying theoretical concepts. These results collectively indicate that the second-order constructs' measurement model demonstrates adequate validity and reliability. Correspondingly, the results of the analysis are displayed in Table 3.

Table 3 shows the results of validity and reliability testing for second-order constructs. Cronbach's alpha values and composite reliability for both constructs exceeded the recommended thresholds, 0.7 and 0.8, respectively, indicating that these second-order constructs are valid and reliable. An AVE greater than 0.5 indicates that the second-order construct can capture sufficient variance from the indicator. Economic and social dimensions of the sustainable entrepreneurship construct have high factor loading values, namely 0.857 and 0.810, indicating a significant contribution from these dimensions.

**Table 3.** Construct validity and reliability test results for second-order constructs

Variable	Dimension	Outer Loading	p-value	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
Entrepreneurship Orientation	Entrepreneurial Behavior	0.881	0.000	0.837	0.875	0.509
		0.820	0.000			
Sustainable Entrepreneurship	Economics	0.857	0.000	0.837	0.877	0.508
	Social aspect	0.810	0.000			
		0.601	0.008			

### 3.3. Structural model analysis (Inner model)

The results of the structural model analysis were interpreted after testing the goodness of fit of inner model. The goodness of fit can be checked from the *R*-squared value for each endogenous variable in the structural equation, as shown in Table 4.

**Table 4.** *R*-squared values for endogenous variables

Endogenous variables	R-square
Entrepreneurship Bricolage	0.400
Sustainable Entrepreneurship	0.492

Table 4 shows the *R*-squared value for the endogenous variable, with the entrepreneurship bricolage having an *R*-squared value of 0.400 and sustainable entrepreneurship having 0.492. This shows that the model can account for 40% and 49.2% of the variance of those endogenous variables, respectively. The Q2 predictive relevance value of 0.6952 also shows that this model is a good fit in explaining the phenomenon of sustainable entrepreneurship of batik MSMEs.

Table 5 displays the results of a path analysis that tests the relationships between various constructs. Out of the nine hypotheses tested, five of them showed significant influence. For instance, sustainability orientation significantly impacts sustainable entrepreneurship ( $p = 0.018$ ) and entrepreneurship bricolage ( $p = 0.000$ ), indicating the importance of sustainability orientation in this model. Government support has also been shown to significantly affect sustainable entrepreneurship ( $p = 0.004$ ) and entrepreneurship bricolage ( $p = 0.035$ ), underlining the critical role of the government in supporting the entrepreneurship of batik MSMEs. On the contrary, the hypothesis that tests

**Table 5.** Path coefficient, *t*-statistics, and *p*-values

Hypothesis	Relationship	Path Coefficient	<i>t</i> -statistics	<i>p</i> -value	Meaning
H1	Entrepreneurship Bricolage → Sustainable Entrepreneurship	0.001	0.007	0.995	Not supported
H2	Sustainability Orientation → Sustainable Entrepreneurship	0.359	2.381	0.018	Supported
H3	Sustainability Orientation → Entrepreneurship Bricolage	0.492	4.389	0.000	Supported
H4	Entrepreneurship Orientation → Sustainable Entrepreneurship	0.220	1.611	0.108	Not supported
H5	Entrepreneurship Orientation → Entrepreneurship Bricolage	-0.201	1.566	0.118	Not supported
H6	Entrepreneurial Leadership → Sustainable Entrepreneurship	0.125	1.216	0.224	Not supported
H7	Entrepreneurial Leadership → Entrepreneurship Bricolage	0.226	2.044	0.042	Supported
H8	Government Support → Sustainable Entrepreneurship	0.331	2.885	0.004	Supported
H9	Government Supports → Entrepreneurship Bricolage	0.211	2.110	0.035	Supported

the influence of entrepreneurial orientation on sustainable entrepreneurship and entrepreneurial bricolage is not significant, suggesting that entrepreneurial orientation does not have a solid direct influence in this context. For this reason, sustainability orientation and sustainability-oriented approach, coupled with entrepreneurial leadership and supportive government policies, significantly impact the bricolage practices of batik MSMEs in East Java, Indonesia. Moreover, the *t*-test analysis confirms that both sustainability orientation and government support are instrumental in fostering sustainable entrepreneurship within these enterprises. At the same time, there is no significant correlation between entrepreneurial orientation and entrepreneurial bricolage. The research findings indicate that entrepreneurial orientation, entrepreneurial leadership, and entrepreneurial bricolage are not significantly correlated with the sustainable entrepreneurship of batik MSMEs in East Java, Indonesia.

## 4. DISCUSSION

The results of the study diverge from some previous research by demonstrating that entrepreneurial orientation does not have a significant direct impact on sustainable entrepreneurship or entrepreneurial bricolage in the context of batik MSMEs. This finding suggests that while innovation and risk-taking are important aspects of entrepreneurship, their effect on sustainability may be mediated by other factors, such as sustainability orientation and government support within this specific sector.

Based on the results of the validity and reliability testing, it can be inferred that most of the con-

structs used in this study are of good quality. For instance, all factor loadings are well above the minimum acceptable threshold of 0.5, as illustrated in Table 2, indicating that each questionnaire item significantly contributes to the latent variable it is measuring. The Cronbach's alpha values and composite reliability above 0.7 and 0.8, respectively, indicate that the instrument has adequate internal consistency. The average variance extracted (AVE) above 0.5 shows good convergence validity, especially in the managerial attitude to risk construct, which has the highest AVE of 0.727.

In the structural model analysis, Table 4 shows that the model can explain 40% of the variance of the bricolage of entrepreneurship variable and 49.2% of the variance of the sustainable entrepreneurship variable. This indicates that the model has a moderate to good fit in explaining the variance in these endogenous variables. Furthermore, the model demonstrates strong predictive relevance, with a Q2 value of 0.6952. Q2, a measure of predictive validity in SEM-PLS, assesses the model's ability to predict the values of the endogenous variables on new, unseen data. It is calculated through cross-validation procedures, where the model is estimated on a subset of the data and then used to predict the values for the remaining data. A Q2 value greater than zero indicates that the model's predictions are better than simply using the mean of the observed values. In this case, Q2 of 0.6952 suggests that the model has substantial predictive power, indicating its ability to accurately forecast the levels of entrepreneurship bricolage and sustainable entrepreneurship in similar contexts.

Moreover, the significant positive relationship between sustainability orientation and entrepreneurial bricolage is a key finding of this study. The track analysis in Table 5 reveals that sustainability orientation and government support have a significant influence on sustainable entrepreneurship and entrepreneurship bricolage. H2 and H3 show that sustainability orientation significantly affects sustainable entrepreneurship ( $p = 0.018$ ) and entrepreneurship bricolage ( $p = 0.000$ ). This suggests that a strong sustainability orientation encourages MSMEs to adopt innovative and creative approaches to resource utilization, leveraging their ingenuity to overcome challenges and capitalize

on opportunities. This finding is supported by previous research highlighting the importance of integrating sustainability principles into business operations (Adomako et al., 2021; Roxas & Coetzer, 2012).

Furthermore, H8 and H9 were supported, indicating that government support also significantly influences sustainable entrepreneurship and entrepreneurship bricolage, with  $p$ -values of 0.004 and 0.035, respectively. The results demonstrate that government initiatives play a significant role in enabling batik MSMEs to adopt sustainable practices and enhance their resilience. This finding aligns with existing literature that underscores the importance of government support in creating an enabling environment for sustainable entrepreneurship (Ahmad et al., 2020; Musa et al., 2022). On the other hand, the data did not support H1, H4, H5, and H6, which predicted a significant impact of entrepreneurship bricolage, entrepreneurial orientation, and entrepreneurial leadership on sustainable entrepreneurship and entrepreneurship bricolage. This suggests that while these factors may play a role in other contexts, their direct influence on sustainable entrepreneurship within the batik MSMEs of East Java may be less pronounced.

The findings offer valuable perspectives on the underlying mechanisms and influential variables that affect sustainable entrepreneurship in the batik MSME sector in East Java. In this context, sustainability orientation and government support have proven to be critical determinants influencing sustainable entrepreneurship and entrepreneurial bricolage (Alsharif et al., 2021; Hanan et al., 2021; Nor-Aishah et al., 2020). This implies that government initiatives promoting sustainability are essential to achieving environmental goals to enhance the performance and market rivalry of batik MSMEs (Mali et al., 2023; Mortimer et al., 2023; Sekhar et al., 2024). Therefore, the results that show that entrepreneurial orientation and entrepreneurial leadership do not have a significant influence may reflect the need for a paradigm shift in the entrepreneurial approach in this sector. Entrepreneurship that focuses on innovation and adaptation to environmental changes, represented by the concept of entrepreneurial bricolage, as well as strong support from the government,

seems to be more relevant and impactful. These results are in line with the literature suggesting the importance of external support and a focus on sustainability (Adomako et al., 2021; Hooi et al., 2016; Sarpong & Oppong, 2023; Yusriadi, 2023) in advancing small and medium enterprises in traditional sectors such as batik.

Thus, in the context of East Java, where batik MSMEs often face capital and technology constraints, the ability to innovate with existing resources is an important factor in maintaining business sustainability. This is also supported by

government support that facilitates skills training and access to resources. In turn, future research can examine more deeply the role of bricolage in other creative industries to determine whether its influence on the sustainability of MSMEs is universal or specific to the batik industry. In addition, longitudinal studies can provide insights into how the dynamics of government support affect the sustainability of MSMEs in the long term. Comparative research in different provinces in Indonesia or other countries can also help understand the regional contexts that influence the success of sustainable entrepreneurship.

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## CONCLUSION

This study aims to analyze the factors that affect sustainable entrepreneurship in batik micro, small, and medium enterprises (MSMEs) in East Java, especially through the role of sustainability orientation, bricolage entrepreneurship, and government support in the post-COVID-19 pandemic context. Based on the analysis, it was found that sustainability orientation has a positive influence on the ability of MSMEs to maintain and develop their businesses in a sustainable manner. In addition, the bricolage approach has proven to be effective in increasing the adaptability of batik MSMEs in the midst of limited resources, which is a hallmark of the traditional creative industry. Subsequently, government support has also proven to play a significant role in facilitating a conducive environment for MSMEs, especially through policies that encourage innovation and sustainability. Thus, the integration of sustainability orientation, creativity in the use of resources, and government support are important pillars for the sustainability of batik MSMEs in East Java, Indonesia. These results show that to increase the competitiveness and resilience of MSMEs, a synergy between internal factors (sustainability orientation and bricolage) and external factors (government support) is needed. This finding is expected to be a guide for stakeholders in formulating strategies that support the sustainability of the MSME sector in the creative industry, as well as provide direction for further research to deepen understanding of the dynamics of sustainable entrepreneurship.

The practical implications of these findings include recommendations for policymakers and stakeholders to support sustainability initiatives better and provide adequate assistance to MSMEs. Training programs that focus on sustainability practices and innovation, as well as policies that encourage active involvement from local governments, can help batik MSMEs in East Java achieve long-term sustainability. Theoretically, this study adds empirical evidence about the importance of sustainability orientation and government support in supporting sustainable entrepreneurship. It also shows that entrepreneurial bricolage, which includes the creative and adaptive use of available resources, is an effective strategy in the context of entrepreneurship in the traditional sector. Therefore, this paper significantly contributes to entrepreneurship and sustainability literature and offers valuable insights for future research. It is expected to provide stakeholders with insight into formulating policies that support sustainability in the MSME sector.

## AUTHOR CONTRIBUTIONS

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## ACKNOWLEDGMENT

The author gratefully acknowledges the financial support provided by the Directorate of Research, Technology, and Community Service under the auspices of the Directorate General of Higher Education, Research, and Technology, Ministry of Education, Culture, Research, and Technology of the Republic of Indonesia. This article was funded through the Higher Education Excellence Applied Research Program under contract number 009/SP2H/PT-L/LL7/2023.

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