

## Local wisdom based learning and sustainable business development model

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**Abstract:** Micro, Small, and Medium Enterprises (MSMEs) are a significant concern for the government, particularly within the creative industry sector. The government emphasizes sustainable management throughout the entire value chain through the "Astacita" program. Consequently, this study aimed to develop a sustainable business learning model for MSMEs in the batik industry. Although batik production experienced a decline, it has since been revitalized through various innovations and creative efforts to maintain its relevance in the market. Key steps include providing motivation, enthusiasm, and support to prospective future generations to ensure the continuation of ancestral businesses. However, there is a lack of awareness among youth regarding independent business ventures and entrepreneurship. The absence of both soft skills and hard skills, coupled with limited knowledge and abilities across affective, cognitive, and psychomotor domains, presents significant challenges within the batik industry. Therefore, it is essential to develop a sustainable business learning model by identifying the characteristics of prospective entrepreneurs—both internal and external factors—exploring local wisdom through education and development, and strengthening education, training, guidance, counseling, mentoring, and empowerment initiatives. Additional solutions involve promoting life skills, soft skills, hard skills, as well as vocational and occupational competencies to enhance capabilities and achieve sustainable outcomes. This study employed mixed methods, utilizing structural equation modeling to analyze concepts and formulate variables influencing business character, learning models, and sustainability, all rooted in local wisdom. The results indicated that manifest variables effectively interpreted each latent variable, demonstrating strong interrelationships among them.

**Keywords:** *Entrepreneurs, Knowledge, Learning, Skills, Vocational.*

### 1. Introduction

The existence and success of Micro, Small and Medium Enterprises (MSMEs) are crucial to supporting the economy, which corresponds with the Indonesian government's 2024-2029 program, "Astacita" eight targets, hopes, and ideals [1].

MSMEs are widely practiced by the Indonesian population and, serve as a mainstay of income generation for survival. The role of MSMEs in supporting the Indonesian economy is significant, not only as a major workforce absorber, but also as a platform for introducing local products to the global market. The growth of MSMEs is rapid, averaging 4.2 %/year, and contributes more than 50% to Indonesia's Gross Domestic Product (GDP) over the past three years [2, 3].

According to Law No. 20 of 2008, MSMEs are categorized as MSMEs businesses. Although many MSME sectors have expanded, some, such as the batik industry, have experienced stagnation, with a decline in the number of entrepreneurs, production output, and youth pursuing the batik business. The lack of awareness about independent business, coupled with insufficient soft and hard skills, knowledge, and abilities (affective, cognitive, and psychomotor) is a major concern in the batik industry [4]. However, this industry presents unique opportunities for growth. Batik is an integral part of Indonesia's

cultural heritage, recognized globally, and a source of national pride. Its development can drive the progress of the creative industry, inspiring various stakeholders to focus on improvement, innovation, and infrastructure upgrades [5].

Opportunities in the batik industry, supported by government regulations have, facilitated significant advancement. The creative market has experienced increasing competition, not only among local and national stakeholders, but also among multinational industries [6]. Additionally, the growth of the batik sector in Sragen has shown the potential to improve economic welfare and absorb several workers [7] creating a business opportunity and development program for the Sragen Regency regional government [4]. The industry has flourished across various regions of the country, with each province contributing distinct characteristics and uniqueness to its regional identity. The types of batik include hand-drawn, combination, printing, and ecoprint styles [8-11].

The momentum for batik's continued existence has been supported by government regulations, including (a) Minister of Home Affairs Regulation number 53/2009, which mandates the use of batik in government institutions, significantly improving demand and domestic production; (b) Minister of Home Affairs Regulation number 86/2015, which governs the import of textiles, textile products, and batik motifs as a means of protecting domestic production and marketing; and (c) President Decree number 44/2016, which regulates business sectors and investment in various fields and, prevents capital monopolies in small businesses, including batik [12, 13].

The emergence of young entrepreneurs in the batik industry center has been limited, despite the growth of the industry in several centers. The Sragen Batik Industry Center is dominated by older generations, with very few young individuals, who have received diplomas, vocational, or undergraduate education, choosing to continue their business. This presents a problem and threat to the sustainability of the industry, particularly in terms of skilled workers in both production and marketing, from the early stages to product sales [14]. Although the Sragen batik industry has been established for over 100 years, the lack of generational renewal is a significant threat to the industry's future, as local potential may be at risk [4, 15].

this issue requires serious attention, especially during the rapid development of technology and information in the transition from Era 4.0-5.0. The younger generation is expected to continue the efforts of their parents or ancestors. The sustainability of the batik industry can face significant challenges, with failure to undertake an active role in marketing. Older batik entrepreneurs often struggle to adapt to modern technologi. by contrast, young individuals with higher education are expected to leverage technology to connect with markets that transcend geographical and time boundaries through social media and digitalization. Issues such as the low number of young entrepreneurs, inadequate mastery of information technology, post-Covid-19 production declines [16] low interest in independent entrepreneurship, and weak social media skills make it urgent to conduct investigations aimed at ensuring that the batik industry does not face further decline or bankruptcy. By identifying both internal and external entrepreneurial characteristics, sustainable business strategies based on local wisdom can be developed to ensure the continued growth of batik MSMEs [17]. Learning, mentoring, and empowerment are essential, comprising vocational, occupational, and various forms of training to advance and preserve the industry's local wisdom [18-20].

## 2. Literature Review

Sustainable MSMEs development based on local wisdom focuses on the characteristics of prospective new entrepreneurs, as well as internal and external factors. Mentoring, counseling, learning, knowledge improvement, vocational training, technical skills, managerial skills, production, marketing, and strengthening of both hard and soft skills are essential for shaping the character of prospective young entrepreneurs and, ensuring the demands of a skilled workforce and business continuity [21-26]. Activities to support new prospective entrepreneurs begin with initial planning and include the following stages; identification, mapping of internal and external characteristics, counseling, mentoring, business training, identification of education, business facilities, capital,

managerial skills, self-awareness, and business behavior [27, 28].

Prospective entrepreneurs should have certain internal characteristics, such as basic business knowledge, skills, enthusiasm, and positive entrepreneurial behavior. Higher education does not always encourage individuals to pursue independent businesses, and this is evident in batik industry centers, where existing entrepreneurs often have only junior high or high school education [29]. Facilities and economic support from parents are crucial in fostering an entrepreneurial character, as many businesses in their early stages are still supported by parents [30, 31]. The decision to become an entrepreneur is influenced by mental factors and inner determination. Business capital can often be sourced from ancestral capital with managerial skills, self-actualization, positive behavior, family environment, vocational skills, and knowledge, which are also important for business success [32].

External factors, including the business environment, stakeholders, social interactions, social status, learning processes, and ancestral heritage, also play a role in shaping entrepreneurs [33]. The business environment has a significant impact on an entrepreneur's character. Furthermore, the roles of stakeholders, empowerment, mentoring, and technical guidance from local governments, universities, and the private sector significantly influence the development of entrepreneurial characteristics [34, 35]. Interactions, cooperation, business collaboration, and relationships can shape entrepreneurial characteristics. Social status and self-recognition also have a significant impact on the decision to start a business [36, 37]. The learning process, which includes gaining experience, internships, and skills, helps prospective entrepreneurs acquire motivation, knowledge, technological literacy, and business experience [38, 39]. Ancestral heritage and family businesses also influence the creation of new businesses [40]. This is evident in the local wisdom, where learning processes, human resources, natural resources, and the business environment are developed.

Local wisdom represents values created, developed, and maintained as the identity of a community's noble cultural traditions that shape character and capabilities. Furthermore, it plays a crucial role as a guideline for life and ensures business continuity. Local wisdom serves as a community icon and supports Sustainable Development Goals (SDGs) by improving community welfare and ensuring sustainable, safe, comfortable, and prosperous living conditions [12].

Mentoring activities also require mentors with specific characteristics that meet established criteria [41] namely, socialpreneurs, technopreneurs, entrepreneurs, and entrepreneurs. These characteristics include intelligent communication, managerial skills in counseling (P), empowerment (E), guidance (C), learning (EL), training (T), vocational and occupational skills (VC), skills (SK), and knowledge improvement (K).

Learning activities serve as a model for developing business management, production, marketing, and e-commerce, all of which can significantly impact the success and sustainability of a business [42]. Business sustainability is characterized by expected profits, an increased consumer base, production, and sales [43-45]. Therefore, by identifying manifests and variables, a sustainable business development strategy can foster new entrepreneurs' growth.

### 3. Methodology

This study was conducted at the Sragen Batik Industry Center because of the low interest in business among the younger generation and the lack of enthusiasm for pursuing independent business [4]. The decline in production, sales, and weak business regeneration was predicted to pose a risk to the sustainability of the Batik MSMEs Center, potentially leading to bankruptcy. A structural equation modeling analysis was used, formulate a sustainable batik business model and interconnect latent variables using quantitative and qualitative methods through Research & Development. Furthermore, this study used a sample of 130 entrepreneurs, and data were collected through interviews and questionnaire responses. Mixed methods were also used [46] with data analysis involving validity and reliability tests, followed by confirmatory factor analysis in the context of learning and developing sustainable business strategies.

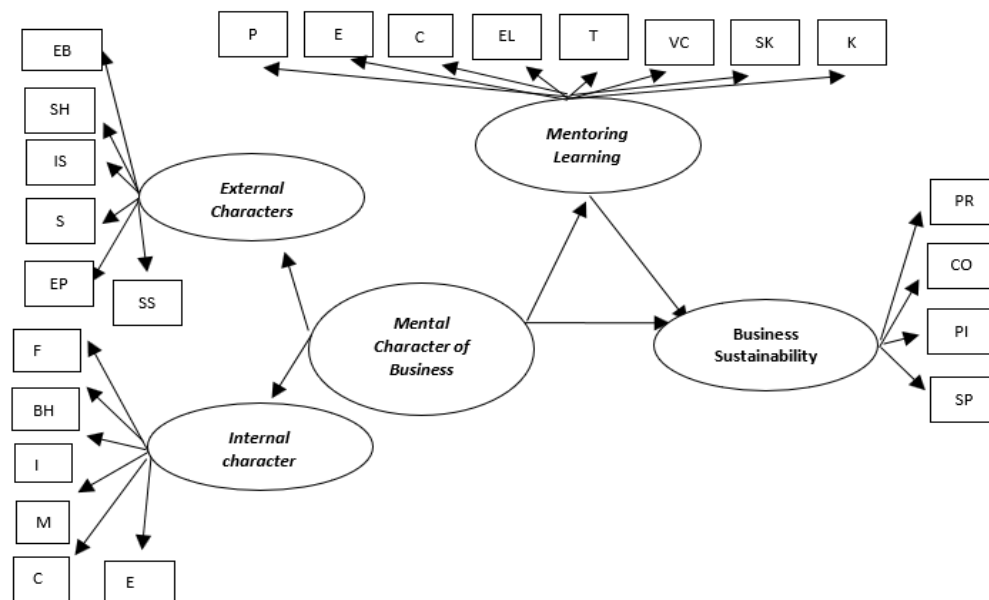
#### 4. Result and Discussion

Based on the analysis, the stages and activities included problem mapping, model formulation, solution determination, data collection, analysis, and the development of results. These stages were divided into three groups; Stage 1 (problem mapping), Stage 2 (model formulation and solution determination), and Stage 3 (data collection, analysis, result development, and strategic planning).

Stage 1: The study involved mapping the problems faced by batik industry centers by collecting data, gathering problem-related information, and analyzing the issues using both qualitative and quantitative data. Data collection tools were designed, including interviews with 130 Batik MSMEs, observations, and questionnaires.

Stage 2: The model formulation involved designing variables that produced three latent variables for an optimal and valid sustainable batik entrepreneurship development model. The model comprises three key variables: the mental character of the business, mentoring of local wisdom learning, and sustainable entrepreneurship.

Stage 3: The mental characteristics of business variables include both internal and external characteristics. The internal characteristics were education (E), facilities (F), business capital (C), managerial (M), awareness (I), and business behavior (BH). External characteristics included business environment (EB), stakeholders (S), social interaction (IS), social status (SS), learning process (EP), and ancestral heritage (SH). The mentoring variables for local wisdom learning were counseling (P), empowerment (E), guidance (C), learning (EL), training (T), vocational and occupational (VC), skills (SK), and knowledge (K). The final achievement, the sustainable business variable, includes expected profit (PR), increased consumers (CO), increased production (PI), and increased sales (SP). The formulation of the learning and development model for entrepreneurship is as follows.



**Figure 1.**  
Concept of sustainable business learning and development model.

Based on Figure-1, there are three latent variables, each with corresponding manifests. Each manifest has indicators that are used to reflect the manifest variable. Furthermore, a validity test was conducted to analyze each item of the manifest variables. The results showed 36 items for internal characteristic variables, 36 for external characteristics, 48 for learning and development assistance, and 24 for sustainable business. This confirmed validity, as all items exceeded the value of 0.3.

An item is considered valid when the correlation coefficient between the question items and total

items (Corrected Item-Total Correlation) is greater than 0.3. This is consistent with Pratiwi, et al. [12] where items with a positive and high correlation with the total score showed high validity. Therefore, all items in the questionnaire were valid for indentifying sustainable entrepreneurial characteristics.

After confirming the validity, the subsequent step was a reliability test. The items used to measure the mental characteristics of the business (internal and external), business development learning, and sustainable business were all declared reliable. Based on reliability analysis, the values for the three variables were reliable, with a Cronbach's alpha coefficient  $> 0.7$  [12]. The analysis proceeded with the model structure, as explained in Table-1, explaining the relationships between the latent variables (construct variables).

**Table 1.**  
Structural Test Results.

Function	Endogenous	Exogenous	$\gamma$	$\beta$	t-hit	Desc*	R <sup>2</sup>
1	Learning	Internal & external character	0.674		6.637	Sig.	0.4593
2	Sustainable Business	Internal & external character	0.290		2.748	Sig.	0.4983
		Learning assistance		0.488	4.831	Sig.	

Note:  $\alpha = 5\%$ .

Based to Table 1, the learning model has two functions. The first explains the influence of internal and external characteristics on learning assistance, while the second explains the influence on sustainable results. Both functions explain how internal and external characteristics indirectly affect the achievement of results through entrepreneurial learning assistance.

The first function obtained the equation, where incubator assistance =  $0.674$  and t-count =  $6.637$ . A t-count value  $>$  t-table (df = 127,  $\alpha = 5\%$ ) of 1.979 showed there was an influence of the characteristic variable on business learning. Meanwhile, the contribution (reflection) of the initial character conditions to learning assistance was 45.93%. As a single variable, the contribution was quite large, as the remaining 54.07% was divided among several other variables developed.

Exogenous internal and external character conditions, with business learning, influenced the achievement of sustainable business results. This significance was confirmed by the t-count  $>$  t-table for each exogenous variable. The influence equation can be written as *Sustainable Business Achievement* =  $0.290$  *Internal-external character* +  $0.488$  *learning assistance*. The contribution of both to the achievement of results was 49.83%; hence, the achievement of sustainable business results showed that mentoring for business learning and education (technopreneurs, socialpreneurs, edupreneurs, and entrepreneurs) could foster sustainable business.

The subsequent stage involved analyzing the loading of each indicator on a variable, which should exceed a value of  $> 0.5$  with a significance of  $< 0.05$  (5%). Therefore, all indicators of each variable were significant for use as measuring tools in assessing latent variables, allowing the formulation of a structural analysis.

Subsequently, a goodness-of-fit model analysis was conducted by testing the model formulation. The model is considered feasible when it achieves Goodness of Fit (GoF) according to the model equation, and aims to assess the fit between sample covariance and the population, where the model produces accurate and reliable results.

The next stage after evaluating the GoF was to formulate and analyze the applicability of the sustainable business development learning model by testing the model analysis. After the model was confirmed to have a good fit, along with its influencing variables, the next step was strategic planning, developed for pedagogical, affective, cognitive, and psychomotor learning.

Strategic planning has developed in the field of education. Based on observations and analysis of human resources at Sragen Batik Industry Center, the average education level was predominantly high school graduates (42%), while the education level of the older batik entrepreneurs, who had been in business for over 40 years, was mostly junior high school and elementary school graduates (38%). The

average young entrepreneur had a diploma or bachelor's degree (20%). In terms of economic and social conditions, the batik industry center community was relatively well-established, and the young generation was mostly composed of diploma and bachelor's degree graduates. Although some parents had lower education levels, there was a desire to send children to higher education to improve socio-economic conditions, elevate the family's status and dignity, and further develop the batik business in the future [4]. Therefore, provisions are required for the younger generation.

Indicators of facilities and supporting infrastructure for the batik industry showed that most batik entrepreneurs in Sragen use their homes as both living and business premises. Therefore, the arrangement of work facilities often remained as is, adjusted to the conditions of the house, and without considering the proper sequence of the production processes (85%). A well-organized production strategy, along with solid business management and layout planning, is needed to attract interest in the batik tourism and educational tourism industries.

The business capital used by Sragen's batik entrepreneurs primarily came from personal savings (45%), with some obtained through bank capital loans (55%). The mentality toward borrowing was quite low because business capital was limited, and work facilities were also constrained, significantly influencing production capacity. A strategy was needed in the form of joint business cooperatives and third-party capital with low loan interest rates, such as people's Business Credit, bridging funds from financial institutions, and soft capital loans. This strategy p-appealed to the younger generation, aiming to start a business in the batik sector.

Regarding managerial aspects, most Masaran Sragen batik entrepreneurs still rely on traditional methods for financial management, marketing, and production. Modern financial record-keeping and digital-based marketing have not yet been implemented. Therefore, a strategy is needed to facilitate the use of computers, proper archival systems, and social media marketing to engage the young generation in the batik industry. In terms of self-awareness, most younger generations involved in the industry had lower levels of education and came from lower-middle-class economic backgrounds, although there was a desire for independence. The strategy developed required motivation, counseling, mentoring, and empowerment for the young generation to better understand market batik through events and batik motif competitions, fostering creativity and innovation.

The behavior of entrepreneurs in the center tends to follow in the footsteps of their ancestors, resulting in monotonous batik designs that reflect family traditions [4]. Owing to the numerous batik business competitions in and around the area, production has become suboptimal and less in demand by consumers. Therefore, the strategy developed should engage the younger generation through creation competitions, design guidance, and techniques, as well as education and training.

The business environment, where interactions and relationships within the surrounding community influence the character and mentality of the younger generation, is an essential factor. The social environment's interaction among craftsmen, business owners, and entrepreneurs is positive. The relationships between family and community are also strong, with mutual support and openness, facilitating the learning process for entrepreneurs. However, the current environment has not been able to attract the young generation to learn business, as there is more focus on career prospects after graduating from college. Interest in the batik industry remains low, with most of the free time spent on less productive activities. Therefore, the strategy developed should involve youth organizations such as Karang Taruna, which can preserve batik through ongoing industry-related activities.

Regarding stakeholders, Sragen's batik industry has received full support from the government through the Sragen Regency Industry, cooperatives, and MSMEs Services. Furthermore, several empowerment initiatives have been undertaken by related institutions, including training, counseling, and business development support. Government agencies involved include the Sragen Regency Development Planning Agency (BAPPEDA), Sragen Regency Department of Industry, Trade and Cooperatives (PERINDAGKOP) & MSMEs Service, and Sragen Regency Tourism Service, which are responsible for planning and implementing empowerment programs. Non-governmental institutions, including financial

groups, act as distributors of business credit, while the private sector (Telkom and Jasa Raharja) serves as partners offering business management training. Batik cluster assistants from universities also test and develop innovations in production tools, coloring techniques (natural and chemical dyes), and motif designs. Despite these efforts, the younger generation has not fully engaged with empowerment, counseling, and assistance programs due to a lack of awareness about business independence, necessitating involvement in all events [4]. Social interaction, friendship, kinship, and the overall social environment significantly influence the potential for batik business development, although these relationships do not translate into increased productivity in the batik industry.

In terms of social status, awareness of social status, work, and future careers are factors influencing the desire to become batik entrepreneurs, which is considered a second choice by the young generation, who prefer to work in an office, become civil servants, or join village administration. Therefore, a strategy focused on mental understanding and business independence is needed to create jobs and encourage the young generation to become job creators, not job-seekers. It is also important to be involved in content creation, digitalization, and innovation of business independence.

The learning process in the industry has led to the development of motifs for the commodity market, including classic, combined classic, agrarian, ethnic, and bouquet motifs, although experts in designs and motifs are rare. Batik entrepreneurs often purchase designs and motifs from external sources. The traditional character of Masaran batik motifs can be preserved by developing design experts. Therefore, this strategy involves developing new motifs, designs, and production processes by engaging the younger generation.

Ancestral heritage plays a significant role in batik centers, where knowledge and skills, as well as the transition from workers to entrepreneurs, have been passed down through generations. However, Generation-Z and Millennials still face challenges in maintaining this tradition. Similarly, in terms of business interests, entrepreneurs should desire independence, enthusiasm, and motivation. Strategies for mentoring local wisdom learning include counseling (P), empowerment (E), guidance (C), learning (EL), training (T), vocational and occupational (VC), skills (SK), and knowledge (K), all of which are useful and contribute to engineering education or vocational learning, especially in informatics engineering education. Informatics engineering education requires entrepreneurial competencies to face world work.

In the Batik Industry Center, counseling related to business sustainability is provided through the GIRLI Cooperative Association. Moreover, institutions, universities, and several foundations carry out empowerment activities. Guidance, learning, and training activities, particularly in e-commerce and marketing, are conducted in stages by universities and students, through research and community services.

Strengthening skills (soft, hard, and life skills) to reinforce vocational and occupational skills on a pedagogical, affective, cognitive, and psychomotor basis aims to improve knowledge. Batik entrepreneurs' skills are strengthened through community service activities integrated with universities. However, interest in industry-related learning, training, mentoring, and counseling activities remains low. This necessitates raising self-awareness of business independence and identifying the potential of the young generation within the Sragen batik community.

Sustainable business conditions, with a focus on profits, are highly desirable, as the profitability of the batik industry serves as a benchmark for success. When business success becomes evident, the younger generation tends to show more interest in joining the industry, although this requires real encouragement and motivation. Furthermore, the manifest variable of sustainability increases consumer demand. Growing consumer numbers are a sign of healthy business operations and have a direct impact on increased production and sales.

Internal characteristics, external characteristics, and business mentoring learning all affect the level of success of the sustainable batik industry. Therefore, the manifest variable should be optimized



in the process of developing human resource characteristics. This can strengthen the mental character, business learning, and behavior of prospective young entrepreneurs, ensuring the continued sustainability of the industry.

## 5. Conclusion

This study successfully formulated a learning model and development strategy for a sustainable local batik industry. The findings demonstrate that this strategy can be applied to engage the younger generation in continuing batik enterprises in Sragen.

The model emphasizes the importance of mental character, learning, and mentoring based on local wisdom in creating competent new entrepreneurs. The analysis showed significant relationships between internal and external characteristics and sustainable outcomes, which are crucial for ensuring the continuity of the batik industry.

By implementing structured education and empowerment strategies, the younger generation is expected to become more interested in entrepreneurship, enhancing the knowledge and skills needed while encouraging innovation in batik design and production. Moreover, support from the government and other stakeholders is essential to create a conducive environment for the development of micro, small, and medium enterprises (MSMEs) in the batik sector.

## 6. Recommendations

The findings provide valuable insights into the education and motivation of aspiring and established entrepreneurs. The business program intention model can be implemented by young entrepreneurs through structured activities within entrepreneurship courses at the university level, or in successive stages following graduation. Additionally, the model can be applied in broader societal and community settings through educational initiatives, business incubators, and empowerment programs, as well as through counseling and mentoring, ensuring accessibility, effectiveness, and productivity.

## 7. Limitation and Future Research

Research suggestions: (a) Learning in the form of education, motivation through counseling, guidance, mentoring, and empowerment of independent entrepreneurship for the young generation, facilitated by parents, families, batik communities, local governments, cooperatives, universities, and students investigating community service in batik centers; (b) Mapping the potential of the young generation in batik areas, ensuring the continuity of the industry, leveraging the opportunities and strengths available within the center; (c) Implementing education through internship, entrepreneurship, edupreneur, technopreneur, and socialpreneur programs to batik communities, enabling the young generation to actively learn about the industry.

## Institutional Review Board Statement:

The study received formal approval from the participating batik entrepreneurs, batik business employees, and all relevant stakeholders.

## Transparency:

The authors confirm that the manuscript is an honest, accurate and transparent account of the study that no vital features of the study have been omitted and that any discrepancies from the study as planned have been explained. This study followed all ethical practices during writing.



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