Development strategies for creative small and medium enterprises (SMEs): A Quintuple Helix Model approach to support smart city initiatives

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Abstract
This study explores the development of Creative Small and Medium-Sized Enterprises (SMEs) in the food, textile, and handicraft sectors in Jambi City, employing the quintuple helix model to align with the Smart City concept. The research gathered primary data through surveys, interviews, and focused group discussions (FGDs). The study encompassed a diverse range of stakeholders from the specified sectors, with a sample size of 100 individuals. A mixed-method research approach was adopted, integrating both qualitative and quantitative methods. Analytical tools such as the Likert scale, SWOT analysis, and the quintuple helix model were employed for data analysis and interpretation. The findings reveal that many participants in these sectors were women, predominantly with high school-level education. The age group of 46-55 years was most represented among the respondents. Notably, the food sector emerged as the dominant industry among the studied SMEs, attributed to its relative ease of establishment and cost-effectiveness compared to the textile and handicraft sectors. The study also examined the perceptions of the roles of quintuple helix actors (government, academia, industry, society, and social environment) in the development of these SMEs. The findings indicate a generally positive perception, suggesting effective fulfillment of roles by these actors. This collaborative effort within the quintuple helix framework has positively impacted the development of creative SMEs in Jambi City, contributing significantly to the Smart City initiative. The study underscores the importance of such collaboration in fostering the growth and sustainability of creative SMEs in the context of urban development.

Keywords: Creative SMEs, Quintuple Helix, Smart city.

JEL Classification: L26, R11, O35

INTRODUCTION

The prevalence of Creative Small and Medium-Sized Enterprises (SMEs) in Jambi City has increased yearly. Despite this growth, the development pace of these enterprises remains sluggish. This phenomenon can be attributed to the industry's low entry barriers, which facilitate the ease of entry and exit for creative entrepreneurs within the sector. A pivotal element in advancing Jambi City's vision as a Smart City is

the concept of a Smart Economy. This concept demands an economic governance framework that is adaptive and responsive to dynamic changes. Such a framework necessitates harmonizing the economic ecosystem with the region's dominant economic sectors, including SMEs.

The COVID-19 pandemic has significantly impacted SMEs in Jambi City, manifesting in reduced sales, marketing challenges, increased equipment and raw materials costs, and difficulties in securing capital. To navigate these challenges and support the Smart City initiative, research is needed to identify effective post-COVID-19 business development strategies. Consequently, this study seeks to uncover optimal solutions for surmounting the obstacles faced by Creative SMEs, particularly in the food, textile, and handicraft sectors of Jambi City.

Prior research on SME development in Jambi Province, encompassing efforts to enhance and develop SMEs (Octavia et al., 2017; Indrawijaya et al., 2018), and the growth of the creative economy (Dahmiri, 2014; Zamzami & Hastuti, 2018), has been extensive. Preliminary investigations involving SME stakeholders in Jambi City reveal a continued adverse impact of the pandemic on business performance, characterized by declining sales, marketing impediments, rising costs for equipment and materials, and scarce capital. Additionally, the synergy among the quintuple helix sectors (government, academia, industry, society, and the social environment) is not optimally functioning. Literature reviews suggest that governments' and companies' research on governance and SME development strategies is abundant.

However, this study is distinctive as it explores the development strategies of Creative SMEs in the food, textile, and handicraft sectors through the lens of the quintuple helix model, in alignment with the Smart City concept in Jambi City. This research stands out for its originality, encompassing previously unexplored aspects such as the quintuple helix model, research subjects, objects, and methodologies.

In the framework of the Quintuple Helix model, understanding the interplay and collaboration among the five entities is crucial for fostering a robust innovation ecosystem that supports SME growth. By effectively engaging these entities, Jambi City can optimize the potential of SMEs in generating employment, spurring economic growth, and benefiting the local community.

The novelty of this research lies in its theoretical contributions, offering an alternative perspective on SME development. Traditionally, SME development has predominantly focused on human and financial capital. This study, however, introduces a novel contribution to SME development research by integrating the quintuple helix synergy. Thus, it provides a comprehensive perspective on effective development strategies for Creative SMEs in the food, textile, and handicraft sectors, proposing a new model.

The practical contribution of this innovative research lies in reinforcing the theory related to the quintuple helix model. While numerous models have been proposed previously, this study specifically focuses on the Creative SME sector in Jambi City, a topic not extensively covered in prior research. Consequently, this study will bolster the theory about the quintuple helix model in the context of Creative SMEs. By amalgamating the elements of the quintuple helix, this approach fosters holistic collaboration, promoting innovation, technology adoption, and sustainable economic development. It also underscores the vital roles of civil society and media in enhancing the visibility and image of Creative SMEs, contributing positively towards realizing a smart and sustainable city in Jambi City.

METHODS

Population and sample

This study focuses on Creative Small and Medium-Sized Enterprises (SMEs) in the food, textile, and handicraft sectors in Jambi City. The total population is 1,784 units, as reported by the Department of Cooperatives and SMEs of Jambi City in 2021. The sample for this research was selected using a non-probability sampling method, with the sample size determined by the Slovin formula (Sevilla, 2007). The sample comprises 100 SME owners from the food, textile, and handicraft sectors in Jambi City. Criteria for sample selection included businesses in operation for more than two years, owners having at least a junior high school education, and being at least 20 years old.

Data collection method

The research used surveys, interviews, observations, and documentation to gather primary data comprehensively. Secondary data were sourced from the Department of Cooperatives and SMEs of Jambi City and relevant literature. A mixed-method research approach, specifically the Sequential Exploratory Design, was adopted, integrating qualitative and quantitative methods. The initial phase involved qualitative methods, such as interviews and observations, to understand the context and issues. This was followed by a quantitative survey informed by the qualitative findings, providing a holistic understanding of Creative SMEs in Jambi City.

Stringent quality control measures were implemented to ensure the primary data's reliability and validity. Survey and interview questions were carefully designed and tested, with their administration closely monitored to reduce errors and biases. Observations were meticulously documented. Data validity was further strengthened through triangulation, combining data from diverse sources and integrating qualitative and quantitative methods. The qualitative findings informed the design of the quantitative survey, ensuring data consistency and relevance.

Data analysis method

The mixed-method approach with Sequential Exploratory Design was chosen to meld qualitative and quantitative analyses, offering a comprehensive understanding of SME development dynamics in Jambi City and the impact of the quintuple helix model on stakeholder roles within the innovation ecosystem. The initial qualitative analysis provided insights into the complex context and interactions among government, academia, industry, civil society, and media supporting the Smart City initiative (Furadantin, 2018).

SWOT analysis was employed to compare internal and external factors affecting SMEs, identifying strengths, weaknesses, opportunities, and threats in relation to the quintuple helix model. This analysis facilitated the formulating of strategies and solutions to enhance SMEs' roles in economic development and innovation in Jambi City, considering the contributions of various stakeholders within the quintuple helix framework.

In applying the quintuple helix model, SME stakeholders in Jambi City were associated with the SWOT analysis. Strengths included high flexibility in responding to local market demands and extensive knowledge of local products. Weaknesses encompassed limited access to financial resources and restricted network connections. Opportunities emerged through collaborations with universities for product innovation, while threats included competition from established large companies. This SWOT analysis enabled the formulation of tailored strategies to support SME development

within the innovation ecosystem, ensuring their active participation in the quintuple helix model by integrating pertinent internal and external factors.

RESULTS AND DISCUSSIONS

Respondent characteristics

The data on the characteristics of respondents from Creative Small and Medium-Sized Enterprises (SMEs) in the food, textile, and handicraft sectors provides a comprehensive picture that is crucial for developing a strategic model under the quintuple helix approach aimed at supporting the Smart City concept. A notable aspect of this data is the gender distribution, where females constitute a majority at 65%. This predominance of female respondents could reflect the demographic trends in these sectors or perhaps the specific focus of the SMEs involved in this study. It suggests that any strategic model developed should consider gender-specific factors, potentially addressing unique challenges and opportunities faced by women in these industries.

Table 1. Characteristics of respondents from creative small and medium-sized enterprises in Jambi City, 2023

Characteristic	Percentage (%)
Gender	
Female	65.00
Male	35.00
Education	
Elementary School	5.00
Junior High School or Equivalent	23.00
Senior High School or Equivalent	55.00
Bachelor's/Master's/Ph.D.	17.00
Age	
<25 Years	2.00
26-35 Years	15.00
36-45 Years	27.00
46-55 Years	35.00
≥55 Years	22.00
Type of Business	
Food	66.00
Clothing	26.00
Handicraft	8.00

In terms of educational background, the respondents display a diverse range. The majority, 55%, have completed high school or equivalent, indicating that these sectors are accessible to individuals with varying levels of formal education. However, a significant minority with higher education (17% with Bachelor's, Master's, or Ph.D. degrees) points to a blend of educational experiences that could be leveraged in strategy development. This diversity suggests that training and development programs, as part of the strategic model, should be tailored to cater to various educational backgrounds, ensuring inclusivity and effectiveness.

The age distribution of the respondents is also telling, with a fairly even spread across different age groups but with a notable concentration in the 46-55 age group. This skew towards an older demographic could imply that these sectors are particularly attractive or suited to more experienced individuals, or it might reflect the age distribution of business owners or key decision-makers in these SMEs. This insight is crucial for strategy development, suggesting age-specific approaches are needed.

Strategies should be designed to cater to the needs and perspectives of different age groups, with a special focus on the dominant groups, to ensure that they are relevant and impactful.

Finally, the types of businesses represented in the study highlight the prominence of the food sector, which accounts for 66% of the respondents. The clothing sector follows this at 26% and handicrafts at 8%. The heavy representation of the food sector suggests its significant role in the SME landscape. It indicates that strategic models might need to prioritize or give special attention to this sector. However, the unique needs and characteristics of the clothing and handicraft sectors should not be overlooked. The strategy should be comprehensive and multifaceted, addressing the specific requirements of each sector while integrating them into the broader Smart City framework.

The data underscores the importance of a nuanced and inclusive approach in developing strategies for SMEs in these sectors. By considering the specific characteristics of the respondents, such as gender, education, age, and type of business, the strategic model can be tailored to effectively support the growth and development of these enterprises within the Smart City concept. This tailored approach ensures that the strategies are relevant and effective and aligns with the inclusive and innovative ethos of the quintuple helix model.

Assessing the role of Quintuple Helix actors in supporting creative SMEs in Jambi City

The perceptions of SME operators in the food, textile, and handicraft sectors in Jambi City regarding their role in supporting the Smart City concept have been comprehensively captured through a questionnaire survey. The results, categorized under different actors of the quintuple helix model, provide insightful feedback on the current state and areas for improvement in supporting SME development (Tabel 2).

The government's role, with an average score of 4.12, falls into the "good" category. This reflects a positive view of the government's efforts, particularly in marketing and promoting SME products. However, the data suggests there is potential for further enhancement in these areas. The government's proactive involvement in assisting, implementing favorable policies, and creating a conducive political environment has supported SME operations. Yet, the need for more targeted and effective promotion and marketing strategies is evident.

Academic actors also receive a positive assessment, with an average score of about 3.94. This indicates a good level of engagement from universities in conducting research, providing training, and offering mentorship to SMEs. However, the data points to a gap in the utilization of technology and information systems tailored to the specific needs of SME businesses. Strengthening this aspect could significantly boost the competitiveness and efficiency of SMEs in the region.

Industrial actors, with an average score of 3.55, also fall into the "good" category. This suggests that large companies have been supportive, yet there is room for improvement, especially in fostering an economic system more conducive to SME development. Assistance in capital, human resource development, product marketing, and standardization is crucial, but a more integrated approach to SME support could further enhance their growth and sustainability.

Table 2. Perceptions of Quintuple Helix actors on SME development in Jambi City, 2023

No	Statement	Value					N	Total Score	Average	Note
		1	2	3	4	5				
	Government									
1	The government consistently provides marketing and promotional assistance	2	3	24	37	34	100	398	3.98	Good
2	Government policies facilitate transportation access and distribution of raw materials and finished products	0	2	18	40	40	100	418	4.18	Good
3	Government regulations are generally favorable to SMEs	0	3	22	37	38	100	410	4.1	Good
4	The government frequently offers training and coaching to enhance SME HR quality	1	5	20	39	35	100	402	4.02	Good
5	The political situation is supportive of SME business operations	0	1	7	49	43	100	434	4.34	Very good
	Average I								**4.12**	Good
	Academia									
6	Universities regularly conduct SME-related research	2	1	17	34	46	100	421	4.21	Very good
7	Universities frequently provide SME training to improve human resource quality	0	4	13	36	47	100	426	4.26	Very good
8	Universities often mentor SMEs for business development	2	3	37	33	25	100	376	3.76	Good
9	Universities guide SMEs in using technology and information systems	1	3	45	34	17	100	363	3.63	Good
10	Universities are consistently supportive of SMEs. especially in management	1	5	30	39	25	100	382	3.82	Good
	Average II								**3.94**	Good
	Industry									
11	Large companies assist SMEs with capital	5	7	32	39	17	100	356	3.56	Good
12	Large companies contribute to improving SME owners' human resources through training and mentoring	3	5	37	37	18	100	362	3.62	Good
13	Many large companies support the marketing of SME products	1	2	45	33	19	100	367	3.67	Good
14	Large companies help with product standardization. particularly regarding halal certification	4	9	35	36	16	100	351	3.51	Good
15	The economic system is conducive to the comfort and development of SMEs	5	11	39	30	15	100	339	3.39	Pretty good
	Average III								**3.55**	Good
	Community									
16	Community groups support creative SME businesses	2	7	46	30	15	100	349	3.49	Good
17	Productive community groups serve as motivational examples for SMEs	4	10	40	28	18	100	346	3.46	Good
18	The community contributes to a conducive business atmosphere by maintaining security and order.	3	9	38	33	17	100	352	3.52	Good
19	The community is always ready to assist SMEs in case of problems	5	10	45	28	12	100	332	3.32	Pretty good
20	The community participates in SME develop-ment by providing the necessary facilities	7	8	49	26	10	100	324	3.24	Pretty good
	Average IV								**3.41**	Good
	Social Environment									
21	The natural environment provides essential raw materials	2	5	50	25	18	100	352	3.52	Good
22	The well-preserved natural environment supports SME operations	6	9	54	17	14	100	324	3.24	Pretty good
23	The social environment is harmonious and peaceful. supporting business activities	3	6	45	27	19	100	353	3.53	Good
24	SME actors easily adapt to the social environment. ensuring business operations	2	5	40	32	21	100	365	3.65	Good
25	Business security in the environment is assured. supporting business comfort	3	7	41	26	23	100	359	3.59	Good
	Average V								3.51	Good
	Overall Average I + II + III + IV + V								**3.72**	Good

Community actors, scoring an average of 3.41, also receive a "good" rating. This indicates a supportive community environment for SMEs. However, the data highlights the need for better infrastructure and facilities, such as sales locations, public amenities, and waste management systems, to further bolster SME development. Community involvement and support are essential for creating a nurturing ecosystem for SMEs.

The social environment, with an average score of 3.51, also falls into the "good" category. This reflects a generally conducive social and natural environment for SME operations. However, there is a noted need for increased environmental awareness and preservation efforts, which are critical for sustainable SME development in the context of a Smart City.

Overall, this analysis provides a nuanced understanding of the roles and perceptions of different actors in the quintuple helix model related to SME development in Jambi City. While the overall assessment is positive, highlighting the strengths in the current system, it also underscores specific areas where improvements can be made. This insight aligns with previous research, such as the studies by Sukarno et al. (2020, 2023), Van Bueren et al. (2016), Susanti & Pradana (2021), and Prajanti et al. (2023), which emphasize the importance of collaborative efforts among various helix actors in SME development. The findings from this study can serve as a foundation for formulating more targeted and effective strategies to enhance the role of each actor in supporting the growth and integration of SMEs within the Smart City framework in Jambi City.

SWOT analysis

From the interview results, FGD, and questionnaire distribution, an assessment and weighting of internal and external factors can be compiled and presented in Table 3 and Table 4.

Internal environmental analysis

The assessment and weighting of internal factors for creative SMEs in the food, clothing, and handicraft sectors, derived from interviews, FGDs, and questionnaire distribution, are crucial for strategic planning. These factors are presented in Table 3.

The internal environment assessment is pivotal in identifying strengths and addressing weaknesses (Bryson, 2016). This analysis should consider resource aspects, financial resources, and infrastructure. Organizational resources are bifurcated into human resources (HR) and non-human resources, encompassing natural resources, capital, machinery, technology, and materials (Sulistiyani & Rosidah, 2009). The quality of HR, especially in terms of educational attainment, emerges as a primary weakness.

Strategic planning involves leveraging organizational capabilities and resources to achieve objectives under favorable conditions (Salusu, 2008; Bellamy et al., 2019; Chi, 2015). Empowering the community to support SME development is essential, with a focus on entrepreneurship and industry development programs (Huraerah, 2008). However, SMEs in Jambi City often rely on their financial resources due to the government's inconsistent support, affecting local service satisfaction.

Infrastructure is crucial in achieving organizational objectives (Kemdikbud RI, 2016). The National Crafts Council Building in Jambi City exemplifies this as a product showcase and educational center. However, resource limitations, such as tools for weaving songket, highlight the need for additional infrastructure to support skill development in these sectors.

Table 3 Assessment of IFAS (Internal Factor Analysis Summary)

No	Internal Strategy Factors	Weight	Rating	Weight x Rating
	Strengths (S)			
1	High motivation among creative SME practitioners in the food, clothing, and handicraft sectors	0,2	4	0,8
2	Abundant availability of local raw materials for SMEs in the food, clothing, and handicraft sectors	0,3	3	0,9
3	Close relationships between SME practitioners in the food, clothing, and handicraft sectors and their customers	0,2	3	0,6
4	Ease and cost-effectiveness of promotion, especially through social media	0,2	4	0,8
5	Strategic locations of SMEs in the food, clothing, and handicraft sectors, enhancing customer accessibility	0,1	3	0,3
	Total	1,0		3,4
	Weaknesses (W)			
1	Inconsistent commitment among SME practitioners in the food, clothing, and handicraft sectors	0,2	3	0,6
2	SME product quality is not competitive with external products	0,3	3	0,9
3	Predominantly traditional management in SMEs within the food, clothing, and handicraft sectors	0,2	3	0,6
4	Limited availability of qualified human resources for SME development	0,1	2	0,2
5	Lack of consistency in business endeavors among SME actors	0,2	3	0,6
	Total	1,0		2,9

Total Strengths – Total Weaknesses= S – W =X (3,4 - 2,9 = 0,5)

In conclusion, this comprehensive analysis of internal factors underscores the need for strategic interventions in HR development, financial resource management, and infrastructure enhancement to improve SME performance and contribute to Jambi City's economic growth (Steenkamp, 2019; Carayannis & Campbell, 2010; Imanto et al., 2019).

External environmental analysis

The external environmental analysis for creative SMEs in the food, clothing, and handicraft sectors, focusing on opportunities and threats, can be refined and expanded in Table 4. The external environment analysis involves examining economic, political, and technological factors and the influence of partners and competitors. Economic factors at both macro and micro levels have stabilized post-COVID-19, influenced by security, political, social, and cultural factors (Bryson, 2016). MSMEs in Jambi Province are pivotal in economic development, significantly absorbing the workforce and contributing to income.

Social factors, including ethnic diversity, religion, population growth, and educational levels, impact business continuity (Todaro, 2004). The socio-demographic conditions in Jambi City are favorable for business operations.

Technological advancements play a crucial role in enhancing SME competitiveness and growth. E-commerce, efficient inventory and supply chain management through IT, and sustainable production technologies are vital (Pearce et al., 2013). Developing human resources skilled in technology utilization is key to implementing a successful technology-oriented SME development strategy (Khamarullah, 2014). A strategic plan supporting the development of technologically

adept human resources and entrepreneurs will promote a competitive SME sector in Jambi City, aligning with its vision of advancement.

Table 4. Assessment of EFAS (External Factor Analysis Summary)

No	External Strategy Factors	Weight	Rating	Weight x Rating
	Opportunity (O)			
1	Substantial government support at both central and local levels through policies and programs for the development of creative SMEs in the food, clothing, and handicraft sectors	0,1	2	0,2
2	University support in the form of guidance and mentoring for creative SMEs in the food, clothing, and handicraft sectors	0,2	3	0,6
3	Significant support from large private sectors for the development of creative SMEs, including mentoring and sponsorship programs	0,1	2	0,2
4	Strong community support for the existence and development of creative SMEs in the clothing, food, and handicraft sectors	0,3	4	1,2
5	A social, political, and natural environment that is highly conducive to the growth and development of creative SMEs in the food, clothing, and handicraft sectors	0,3	4	1,2
	Total	1,0		3,4
	Threats (T)			
1	Increasing competition for creative SMEs due to market liberalization	0,3	3	0,9
2	Emergence of various new and high-quality substitute products	0,2	2	0,4
3	Decrease in purchasing power owing to global economic conditions	0,1	3	0,3
4	Ease of imitation of SME products in the clothing, food, and handicraft sectors by competitors	0,2	3	0,6
5	Community preference for foreign products over local SME products	0,2	2	0,6
	Totol	1		2,8

Total Opportunities – Total Threats = P – O = X (3,4 - 2,8 = -0,6)

Formulating strategies

Strategies encompass a series of objectives, policies, programs, actions, or resource allocations, including human resources and budgets. They form a crucial part of implementing an organization's mission, bridging the relationship between the organization and its environment (Spee & Jarzabkowski, 2011; Bryson, 2015). Strategic issue mapping can be effectively conducted through SWOT analysis, a tool for strategy formulation (Rangkuti et al., 2008). This analysis aims to maximize strengths and opportunities while minimizing weaknesses and threats. Weighting analysis is instrumental in identifying the organization's position, resulting in classifications such as strengths-opportunities (SO), strengths-threats (ST), weaknesses-opportunities (WO), or weaknesses-threats (WT). Consequently, strategic steps can be structured to achieve organizational goals (Pearce et al., 2013).

Data processing results using the SWOT model approach reveal that the internal factors of creative SMEs in the food, clothing, and craft sectors in Jambi City have a strength score of 0.35. External factors indicate that these SMEs are positioned in an

opportunity quadrant with a score of 0.6. Hence, it is concluded that SMEs in the clothing, food, and craft sectors in Jambi City occupy quadrant 1 (positive, positive).
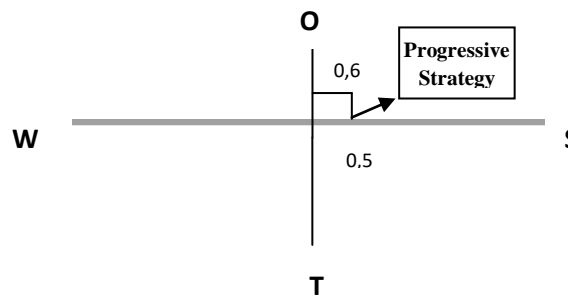.

Figure 1. SWOT quadrant

Figure 1 shows that the position of creative SMEs in the food, clothing, and craft sectors in Jambi City is in quadrant 1, representing the most advantageous position. This quadrant allows SMEs to optimize their strengths to leverage existing opportunities. SMEs can implement progressive strategies for optimal business growth and development, such as increasing product variety, opening new branches, and enhancing production capacity.

Visualizing the SWOT quadrant is crucial for providing a clear perspective of the SMEs' positions, enabling stakeholders to comprehend the applicability of proposed strategies in a positive context. By adopting these strategies, SME operators in Jambi City can utilize their internal strengths to capitalize on external opportunities, enhancing competitiveness and fostering sustainable growth in the SME sector.

Based on the SWOT matrix analysis, several strategies are proposed for creative SME operators in the food, clothing, and craft sectors in Jambi City:

Strengths-Threats (ST) Strategies:
1. Capitalize on the high motivation of SME operators to capture open market opportunities.
2. Increase the utilization of local raw materials to compete with external products.
3. Enhance customer relationships.
4. Implement extensive promotions through social media.
5. Improve product quality through targeted training and mentoring.

Weaknesses-Threats (WT) Strategies:
1. Enhance human resource quality through comprehensive training and education.
2. Increase the availability of training and mentoring facilities.
3. Explore collaborative opportunities with large industries for resource augmentation.

Strengths-Opportunities (SO) Strategies:
1. Expand market reach beyond Jambi City.
2. Strengthen collaboration with government entities, academia, industry, community, and social environments.
3. Foster innovation in product design and production processes.
4. Develop more effective marketing strategies.

Weaknesses-Opportunities (WO) Strategies:
1. Enhance the commitment of SME operators by leveraging opportunities provided by the government.
2. Collaborate with universities to improve the quality of SME products.

3. Improve human resource quality through engagement with large companies as mentors and guides.
4. Implement a modern management system via training and education in collaboration with universities.
5. Maximize the conducive business environment for development.

Collaborative Quintuple Helix in the development of creative SMEs

The Quintuple Helix model facilitates collaboration among key actors—government, academia, industry, community, and social environments—in developing creative SMEs. Incorporating social and environmental factors into this model is anticipated to foster sustainable innovation. This encompasses social and interaction factors surrounding SME operators, including business networks, community support, local culture, social norms, and relationships with customers, suppliers, and business partners. Effective collaboration within the quintuple helix positively impacts the development of creative SMEs in Jambi City, aligning to evolve into a Smart City (Hudani & Dhewanto, 2015; Ranga et al., 2008; Brem & Radziwon, 2017).

The interaction among quintuple helix actors has been functioning in Jambi City. The government is a policymaker and coordinator, while academia contributes knowledge and assistance to SME operators. Enhanced collaboration among stakeholders is achieved through networking, coordination, and cooperation (Trojanowska et al., 2016; Sukarno et al., 2020; Lee et al., 2020).

Implementation of SME development

Within the Quintuple Helix framework, five primary actors collaborate in SME development: Local Government, Academia, Industry, Community, and Social Environment (Mulyana & Sutapa, 2015; Harwiki & Malet, 2020). Their collective efforts aim to increase the production and sales volume of SME products.

SME development strategies encompass improving access to productive assets, capital, technology utilization, modern management applications, and training in relevant knowledge and skills (Khamarullah, 2014; Sandada et al., 2014; Awino, 2013; Suartini et al., 2023). Interviews with key respondents highlight three main perspectives for the Quintuple Helix actors:
1. Enhancing SME owners' Human Resources (HR) quality through creativity, self-reliance in capital acquisition, and science and technology utilization.
2. Improving SME product quality and quantity through differentiation and broad market access.
3. Strengthening creative SME institutions by protecting assets and creating job opportunities.

Sustainable development necessitates collaboration and integration among the Quintuple Helix actors to optimize creative SME development potential (Fitriani et al., 2020; Galvão et al., 2017; Kimatu, 2016; Herliana, 2015). The institutional model used in this study is adapted from Carayannis & Rakhmatullin (2014) and Provenzano et al. (2016).

a. Role of the government in SME development
- Improving HR Quality: Local governments should provide guidance and training for SME operators, categorizing them by business sectors and offering technical support.
- Increasing Production Capacity: Support using advanced equipment to boost production and business income.

- Strengthening SME Institutions: Protect local products through patents and promotion in hotels and tourist locations.
- Improving Product Quality: Provide training on product quality standards in line with technological advancements (Smallbone & Welter, 2001; Desmaryani, 2017; Abbasi et al., 2017).

b. Role of academia in SME development

Academia should actively engage in training, research, and community service to enhance SME operators' skills and product quality (Piterou & Birch, 2016).

c. Role of the industry in SME development

Industries can support SMEs through capital assistance, advanced equipment, mentoring, and market access facilitation.

d. Role of the community in SME development

The community contributes by setting examples for SME operators, providing necessary facilities, and creating a supportive environment (Palazzo et al., 2017).

e. Role of the social environment in SME development

The social environment aids in HR development, supports local wisdom in product differentiation, protects assets, and fosters business operator associations (Irenaus et al., 2018).

CONCLUSIONS AND RECOMMENDATIONS

Conclusions

The study of creative MSMEs in Kota Jambi, predominantly led by women, most of whom are high school graduates, reveals their substantial impact on the dynamics and development of creative businesses. This female dominance in creative businesses may be attributed to various social and economic factors, such as accessibility to business opportunities, flexible working conditions, and preservation of local traditions. The educational background of these entrepreneurs, primarily at the high school level, potentially influences the innovation and competitiveness of these businesses. This educational level's limited knowledge and skills highlight the need for enhanced educational support to foster business growth. Understanding these businesses' social dynamics and demographic impacts is crucial for devising more effective and inclusive development strategies.

Respondents' perception regarding the roles of quintuple helix actors (government, academia, industry, community, and social environment) suggests a significant contribution to developing creative MSMEs in Kota Jambi, aligning with the city's aspirations to become a Smart City. The collaboration among these actors is progressing effectively, involving partnerships with local government departments, universities, associations of creative MSME practitioners, and private companies.

Recommendations

In light of these findings, several integrated recommendations are proposed to support further the growth and development of creative MSMEs in Kota Jambi. Firstly, the government's role is crucial in enhancing marketing and promotional efforts. This could include organizing product exhibitions, leveraging e-commerce platforms, and providing digital marketing strategy training. Such initiatives would enable MSMEs to reach a wider consumer base locally and nationally effectively.

Furthermore, the involvement of universities in supporting technological advancement in MSMEs is essential. Through closer partnerships, universities can offer training and resources in graphic design software and online marketing while organizing

regular seminars and workshops to introduce the latest technological innovations relevant to the MSME sector.

Additionally, the economic system should be restructured to provide more substantial support to creative MSMEs, ensuring equitable opportunities compared to larger businesses. Community involvement also plays a vital role in the development of these MSMEs. This includes not only the provision of necessary facilities but also active participation and support from local communities.

Finally, enhancing collaboration among all actors within the quintuple helix framework is imperative. This collaborative effort is key to expediting the development of creative MSMEs, contributing significantly to Kota Jambi's goal of achieving Smart City status. By embracing these recommendations, Kota Jambi can create a more inclusive, dynamic, and supportive environment for the flourishing of creative MSMEs, vital to the city's economic and social development.

This study, while comprehensive, has certain limitations that should be acknowledged. The focus on Kota Jambi may not fully represent the diverse range of challenges and opportunities faced by creative MSMEs in other regions. Additionally, the predominance of women-led MSMEs in the study might limit the generalizability of the findings to other demographic groups. The reliance on high school-educated entrepreneurs also presents a specific viewpoint that may not encompass the broader spectrum of educational backgrounds in the MSME sector.

For future research, it would be beneficial to conduct comparative studies across different regions and demographic groups to gain a more holistic understanding of the challenges and opportunities in the MSME sector. Investigating the impact of higher educational levels on innovation and competitiveness in creative businesses could provide valuable insights for policy and program development. Additionally, exploring the long-term effects of the quintuple helix collaboration on MSME sustainability and growth would offer a deeper understanding of the efficacy of such models. Finally, examining the role of digital transformation in the MSME sector, especially in the context of emerging technologies and e-commerce, could provide critical insights for future development strategies.

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