

Development of MSMEs Based on the Pentahelix Model in Supporting Regional Economic Growth in East Java Province

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Abstract

This study aims to analyze the application of the pentahelix model in the development of micro, small, and medium enterprises (MSMEs) to support regional economic growth in East Java Province. MSMEs play an important role in regional economic growth; however, many MSME actors still face various challenges, including limited access to capital, low product innovation, and the limited use of digital technology. This study uses a qualitative approach with a descriptive method based on literature studies and documentation. The data used is secondary data obtained from official government documents, statistical reports, scientific publications, and other relevant sources related to MSME development, regional economic growth, and the concept of pentahelix. Data were collected through documentation and literature review techniques. The analysis was carried out by grouping data based on five pentahelix elements, namely the government, academics, business actors, the community, and the media. The results of the study show that the development of MSMEs in East Java has involved various stakeholders, but the synergy between actors has not run optimally. The government plays a role in providing empowerment policies and programs, academics contribute through research and mentoring, business actors play a role in innovation and market development, the community supports socio-economic networks, while the media plays a role in the promotion and dissemination of information. The main obstacles that are still faced are weak coordination, the lack of integration of inter-sector programs, and the limited use of digital technology by some MSME actors. Therefore, strengthening pentahelix collaboration is needed so that the development of MSMEs can run more effectively, sustainably, and be able to make a greater contribution to regional economic growth.

1. Introduction

In recent years, the Indonesian economy has shown quite positive growth, although various challenges such as limited employment opportunities and inequality in the development of the business sector still have to be faced. One of the sectors that plays a strategic role in supporting national economic stability is micro, small, and medium enterprises (MSMEs). The function of MSMEs is not only to carry out community economic activities, but also to help provide significant jobs and is one of the pillars of national economic growth (Tambunan, 2019). However, in its development, many MSME actors still face various obstacles such as limited access to capital, marketing, and low use of technology in business activities (Sugiarti et al., 2020). Difficulties in increasing business competitiveness and maintaining operational

sustainability in the midst of an ever-growing economic landscape are experienced by some MSMEs due to these conditions.

East Java Province makes a significant contribution to the national economy. According to data from the Central Statistics Agency, East Java's economy in 2025 shows quite positive growth, with the Gross Regional Domestic Product (GDP) reaching around IDR 3,403.17 trillion and the Central Statistics Agency of East Java Province (2026) reporting an economic growth rate of 5.33 percent. This condition shows that East Java plays an important role in supporting national economic growth, especially in the Java Island region. Nevertheless, challenges related to job creation and strengthening the community's economic sector remain the main concern in efforts to improve people's welfare.

The MSME sector makes a significant contribution to the economic growth of the community in the regional economic structure. In East Java Province, there are millions of MSME actors who are active in various business sectors such as trade, creative industries, and the food and beverage sector. The presence of MSMEs not only functions as a source of income for the community, but also plays a role as one of the solutions in reducing the unemployment rate (Kementerian Koperasi dan Usaha Kecil dan Menengah Republik Indonesia, 2023). However, in practice, various problems are still faced by many MSME actors, such as limited access to business assistance, low levels of product innovation, and the use of digital technology that is not optimal in marketing activities. This condition shows that the development of MSMEs still needs stronger support from various parties in order to grow optimally.

Various stakeholders not only rely on the government, but must also be involved in MSME development efforts. Collaboration among government, academia, business, communities, and the media has become an important strategy for strengthening MSME competitiveness and regional economic development (Deka et al., 2023; Beatrice et al., 2023). In the context of regional economic development, collaboration between various parties is a key factor in strengthening the capacity of MSMEs. Therefore, a collaborative approach is needed that can integrate various elements involved in the economic development of the community. One approach that can be used is the pentahelix model, which involves academics, the business world, the community, the government, and the media.

The pentahelix approach is a concept of synergy between various stakeholders that aims to encourage innovation and sustainable economic development. In the development of MSMEs, the government plays a role in formulating policies and providing regulatory support and empowerment programs. The business sector plays a role in creating market

opportunities and business development, while academics contribute through research and innovation that can be applied to the development of MSMEs (Etzkowitz et al., 2017). In addition, the community and the media also play an important role in strengthening social networks as well as disseminating information and promoting SME products to the public. Through the integrated collaboration between these various elements, it is hoped that the development of SMEs can run more effectively and the positive impact on the economic growth of the community will be provided by the program.

Research on the pentahelix model has been widely conducted in various countries as an approach to support collaboration-based economic development. However, in Indonesia, research on the application of the pentahelix model is still relatively limited, especially those that focus on the development of the MSME sector. Most of the existing research examines the application of the pentahelix model in the tourism sector, while studies on its application in the MSME sector are still rare (Rachmawati, 2021). In the context of regional economic development, an important role in creating jobs and improving community welfare is carried out by MSMEs. Therefore, more in-depth research is needed on the application of the pentahelix model in the development of MSMEs.

Against this background, the development of MSMEs requires synergy among various stakeholders so that MSMEs can make a more optimal contribution to the regional economy. In this case, the pentahelix model involving academics, business actors, the community, the government, and the media is seen as an approach that is able to strengthen the development of MSMEs. Therefore, this study aims to analyze the application of the pentahelix model in the development of MSMEs in East Java Province and identify the role of each pentahelix component in supporting regional economic strengthening and increasing job opportunities for many people. This study is expected to contribute to the

literature by providing a comprehensive analysis of the implementation of the pentahelix model in MSME development in East Java Province and offering recommendations to strengthen stakeholder collaboration in supporting regional economic growth.

2. Literature Review

2.1 MSMEs and Regional Economic Growth

Micro, small, and medium enterprises (MSMEs) are one of the important sectors in the regional economic structure. MSMEs play a role in creating jobs, increasing people's income, and strengthening locally-based economic activities. The existence of MSMEs is also one of the pillars of economic stability because this sector is relatively flexible in dealing with changes in economic conditions. In the context of regional development, MSMEs are not only seen as small business units, but also as strategic instruments in encouraging economic equity and reducing unemployment.

Despite having an important role, MSMEs still face various obstacles in their development. Some of the problems that are often faced include limited access to capital, low quality of human resources, limited product innovation, weak business management, and not optimal use of digital technology. This condition makes it difficult for some MSMEs to increase competitiveness, expand the market, and maintain business sustainability. Therefore, the development of MSMEs requires support from various parties so that the potential of the local economy can be maximized more effectively. Recent studies also indicate that digital transformation and stakeholder collaboration significantly improve MSME competitiveness, market expansion, and business sustainability (Kilay et al., 2022; Reswari et al., 2025).

2.2 Pentahelix Model Concept

The pentahelix model is a collaborative approach that involves five main elements, namely the government, academics, business actors, society, and the media. This model was developed from the idea that economic

development and innovation cannot be carried out by one party alone, but requires cross-sectoral synergy. Each actor in the pentahelix has a different, but complementary role in driving innovation, capacity building, and sustainability of development programs. Previous studies emphasize that effective interaction among pentahelix actors contributes to innovation capacity, knowledge sharing, and sustainable regional economic development (Carayannis et al., 2021; Trianti et al., 2024).

In the development of MSMEs, the government plays a role as a regulator and facilitator through policy formulation, provision of training programs, capital assistance, and market access facilitation. Academics play a role in producing research, innovation, training, and science-based mentoring. Business actors are the main actors in the production process, product innovation, marketing, and competitiveness development. The community plays a role in building social networks, supporting the consumption of local products, and strengthening the economic community. Meanwhile, the media plays a role in promoting products, disseminating information, building a business image, and expanding market reach.

2.3 Collaboration-Based MSME Development

Collaboration-based MSME development emphasizes the importance of the involvement of various stakeholders in solving problems faced by business actors. Collaboration is needed because MSME issues are complex and not only related to capital, but also include aspects of management, technology, innovation, marketing, legality, and business networks. Through inter-sector cooperation, the development of MSMEs can be carried out in a more targeted manner because each party can contribute according to their capacity and authority. Collaborative governance based on the pentahelix approach also encourages the creation of innovation ecosystems that strengthen MSME performance and institutional capacity (Mariam et al., 2025;

Dwijayanti et al., 2025).

However, the success of collaboration depends heavily on the quality of coordination between actors. MSME empowerment programs often do not run optimally because they are still fragmented, less integrated, and not fully based on the needs of MSME actors. For example, the training provided has not always been followed by continuous mentoring, access to capital has not always been linked to strengthening marketing, and digital promotion has not always been accompanied by increasing digital literacy capacity. Therefore, the pentahelix model is important to be used as a framework to see the extent to which the relationship between actors can support the development of MSMEs more effectively.

2.4 Digitalization of MSMEs and the Role of Media

Digitalization is one of the important factors in the development of MSMEs, especially in the face of changes in consumption patterns and the development of the digital economy. The use of digital technology can help MSMEs expand the market, increase business efficiency, strengthen promotions, and facilitate transactions with consumers. Social media, marketplaces, and other digital platforms provide opportunities for MSME players to introduce products to a wider market. The adoption of digital payment systems, e-commerce platforms, and digital innovation has also been shown to improve MSME performance and competitiveness (Kilay et al., 2022; Siboro et al., 2025).

However, not all MSME actors are able to make optimal use of digital technology. Low digital literacy, limited ability to create promotional content, lack of understanding of digital marketing strategies, and limited access to technology are still obstacles that need to be overcome. In this case, the media not only functions as a means of promotion, but also as an educational tool and liaison between MSME actors and consumers, the government, the community, and the business world.

3. Method

This study uses a qualitative approach with a descriptive method. This approach was chosen because the research aims to describe and analyze the application of the pentahelix model in the development of micro, small, and medium enterprises (MSMEs) in East Java Province. Through a qualitative approach, this research seeks to understand in depth the involvement of various stakeholders, namely the government, academics, business actors, the community, and the media in supporting the strengthening of MSMEs and regional economic growth.

This type of research is a descriptive study based on literature review and documentation. The research does not focus on hypothesis testing, but on the elaboration of phenomena, the role of actors, forms of collaboration, and the challenges faced in the implementation of the pentahelix model. The object of study in this study is the development of MSMEs in East Java Province, while the focus of the analysis is directed at the involvement of the five main elements in the pentahelix model, namely the government as a policy maker and program facilitator, academics as a producer of studies and innovations, business actors as economic actors, the community as a supporter of social networks and markets, and the media as a means of promotion and dissemination of information.

The data used in this study are secondary data. Secondary data is obtained from various relevant sources, such as official government documents, statistical reports, publications of the Central Statistics Agency, reports from the Ministry of Cooperatives and SMEs, regional development reports, scientific journal articles, books, and other scientific sources that discuss MSMEs, regional economic growth, and the pentahelix model. The selection of data is carried out purposively, namely by selecting sources that are directly related to the research topic, especially regarding the development of MSMEs, the role of stakeholders, the digitization of MSMEs, cross-sector collaboration, and

regional economic development in East Java.

The data collection technique was carried out through documentation studies and literature review. The documentation study was carried out by tracing official documents containing data on economic developments, MSME conditions, and MSME empowerment programs at the national and regional levels. Meanwhile, a literature review was carried out by examining various results of previous research that discussed the concept of pentahelix, MSME development, stakeholder collaboration, and strategies to increase business competitiveness. The collected data is then classified based on the main theme, namely the condition of MSMEs in East Java, the role of each pentahelix element, the form of support for MSMEs, and obstacles in the implementation of collaboration.

The data analysis technique is carried out in a descriptive-qualitative manner through several stages. The first stage is data reduction, which is sorting and simplifying data that is relevant to the focus of the research. The second stage is data categorization, which is grouping information based on five pentahelix elements, including the government, academics, business actors, the community, and the media. The third stage is the presentation of data, which is to compile the results of the study in the form of narrative descriptions and tables so that the relationship between the role of actors, forms of contribution, and the challenges faced can be clearly seen. The fourth stage is the drawing of conclusions, namely formulating the main findings regarding the extent to which the pentahelix model has been applied in the development of MSMEs in East Java and what aspects still need to be strengthened.

The analysis in this study uses the pentahelix model framework as a basis for reading the involvement of actors in the development of MSMEs. The government is analyzed through policies, regulations, empowerment programs, capital assistance, training, and marketing facilitation. Academics are analyzed through research contributions,

mentoring, product innovation, training, and community service. Business actors are analyzed through their ability to innovate, adapt technology, market access, and develop competitiveness. Communities are analyzed through community support, social networks, consumer participation, and strengthening the local economy. The media is analyzed through its role in promotion, publication, digital education, and expanding access to information for MSME actors.

To maintain the validity of the data, this study uses the source triangulation technique. Triangulation is done by comparing information from various sources, such as statistical reports, government documents, scientific articles, and other relevant references. In this way, the data used does not depend only on a single source, but is strengthened through the comparison of various documents. In addition, the analysis was carried out by linking the findings from secondary data with the concept of pentahelix and MSME development theory, so that the results of the study can provide a more comprehensive picture of the role of cross-sector collaboration in supporting regional economic growth.

With this method, this research is expected to be able to provide a more systematic understanding of the application of the pentahelix model in the development of MSMEs in East Java Province. In addition, this method also allows research to identify the role of each actor, the form of contribution that has been made, as well as the coordination and synergy obstacles that are still faced in supporting the strengthening of MSMEs and regional economic growth.

4. Results and Discussion

The development of micro, small, and medium enterprises (MSMEs) in East Java Province plays an important role in supporting the regional economy. According to data from the Central Statistics Agency in 2025, East Java's economic growth will reach 5.33 percent, with the main contribution coming from the trade

sector, manufacturing industry, and community-based businesses. It is shown that the strategic position as one of the main drivers of the regional economy as well as absorbing a considerable amount of labor is held by MSMEs, so that their existence is a crucial factor in maintaining the economic stability of the community (Tambunan, 2019). In addition, it was also shown that strengthening the MSME sector can be used as one of the solutions to overcome regional economic challenges, especially in creating jobs and improving community welfare.

In addition, MSMEs have a high level of flexibility in adapting to changing economic conditions, both at the local and national levels. This flexibility is an advantage compared to large companies, especially when faced with rapidly changing market dynamics. However, this flexibility must be balanced with increasing business capacity so that MSMEs are not only able to survive, but also develop sustainably (Fibrianti et al., 2022).

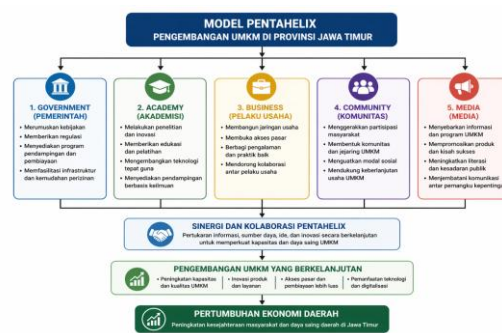
In the context of the implementation of the pentahelix model, various stakeholders from various academics, business actors, the community, the government, and the media are beginning to be involved in the development of MSMEs, even though they have not fully optimized their roles. Local governments play a role in providing empowerment policies and programs, such as entrepreneurship training, capital assistance, and facilitation of marketing of MSME products. These efforts show the government's commitment to strengthening the MSME sector as part of the regional economic development strategy. However, the sustainability of these programs and equitable

access for all MSME actors remains a challenge that requires attention (Kementerian Koperasi dan Usaha Kecil dan Menengah Republik Indonesia, 2023).

On the other hand, business actors, as the main actors in the development of MSMEs, are required to continue to innovate and adapt to technological advances. The competitiveness of MSMEs can be increased through the use of digital technology, especially in product marketing which is considered a key factor (Reswari et al., 2025). However, there are still obstacles such as low digital literacy among MSME entrepreneurs, which hinders technology-based marketing optimization. This situation shows that digital transformation in the MSME sector not only requires access to technology, the capacity of human resources is not only increased to utilize the technology effectively, but also supported by the program.

The role of academics in the pentahelix model can be seen through research activities and community involvement. However, this contribution still needs to be increased so that it is more integrated with the practical needs of MSME actors in the field. Collaboration between higher education institutions and business actors is essential to encourage the creation of practical innovations that are in line with market demand (Mariam et al., 2025). In addition, the community plays a role in building social networks and strengthening cooperation among MSME stakeholders, while the media functions as a promotional tool that is able to increase the visibility of MSME products to the wider community. To clarify the role of each actor in the pentahelix model, here is a presentation in the form of an image:

Figure 1. The Role and Challenges of the Pentahelix Model in the Development of MSMEs in East Java



In this context, digital media also acts as a link between business actors and the wider market, thereby accelerating the growth of MSMEs in the digital economy era (Sugiarti et al., 2020). In addition, the success of the implementation of the pentahelix model is also influenced by the level of active involvement of each actor in the MSME development process. This involvement is not just formal, but requires commitment in the form of sustainable and real collaboration. Without a strong commitment from all parties, the pentahelix model risks becoming just a theoretical concept that is difficult to implement effectively in practice.

Although these various roles have existed, the implementation of the pentahelix model in the development of MSMEs in East Java Province still faces challenges related to coordination and synergy carried out by stakeholders. Theoretically, the pentahelix model emphasizes the importance of integrated collaboration between various actors in creating innovation and driving sustainable economic development (Etzkowitz et al., 2017). However, in practice, these collaborations have not worked optimally, which means that the potential of each actor has not been fully exploited. This situation shows that the effectiveness of the pentahelix model is greatly influenced by the quality of coordination and communication among interested parties in an economic development system (Rachmawati, 2021).

In addition, the lack of integration of inter-agency programs is also a factor that hinders the optimal implementation of the pentahelix model. Programs run by individual actors often remain fragmented and lack comprehensive coordination. This leads to overlapping programs and reduced effectiveness in achieving MSME development goals. In addition, the absence of an integrated monitoring and evaluation system makes it difficult to measure the extent of the success of collaboration.

These findings show that the success of MSME development is not determined by one

actor alone, but requires integrated and sustainable cross-sector collaboration. Therefore, efforts are needed to strengthen synergies among the elements of pentahelix through improved communication, coordination, and more effective program integration. With good collaboration between the government, academics, business actors, the community, and the media, it is hoped that the development of MSMEs can run more optimally and be able to make a greater contribution to regional economic growth and improve community welfare.

5. Conclusion

Based on the results of the study, the development of MSMEs in East Java Province has a strategic role in supporting regional economic growth, creating jobs, and strengthening community economic activities. The main findings of this study show that the application of the pentahelix model in the development of MSMEs has involved five main elements, namely the government, academics, business actors, the community, and the media. Each actor has complementary roles, ranging from the provision of empowerment policies and programs, mentoring and innovation, business development, strengthening social networks, to the promotion and dissemination of information. However, the application of the pentahelix model has not been running optimally. The main obstacles found are the weak coordination between sectors, the lack of integrated MSME empowerment programs, and the lack of a sustainable collaboration pattern between the government, academics, business actors, the community, and the media. This condition causes the potential of each actor to not be utilized optimally in supporting the increase in the competitiveness of MSMEs in East Java.

This study has limitations because it uses a qualitative approach based on secondary data, so the analysis produced still depends on available documents, reports, and literature. This research has not directly explored the

experiences of MSME actors, local governments, academics, communities, and the media through interviews or field observations. Therefore, the recommendation that can be given is the need to strengthen coordination between pentahelix actors through a more integrated, needs-based, and sustainability-oriented program. Local governments need to strengthen program facilitation, academics need to increase research-based and innovation-based assistance, business actors need to be encouraged to increase digital capacity and product competitiveness, communities need to be involved in strengthening local economic networks, while the media needs to be maximized as a means of promotion and education. It is further recommended to use primary data through interviews or field studies in order to provide a more in-depth picture of the effectiveness of the application of the pentahelix model in the development of MSMEs.

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