

Determining Factors in smes Innovation Performance: An Empirical Study in Indonesia

Tri Siwi Agustina*

Universitas Airlangga

Muhammad Ega Patria Arganata

Universitas Airlangga

* *siwi@feb.unair.ac.id*

Abstract

In today's business world, innovation performance is widely acknowledged as an essential factor in enhancing business performance. Therefore, the present study attempts to identify and examine the factors that may enhance the innovation performance of SMEs in the creative industry. More specifically, the research aims to explore the relationship of entrepreneurial orientation, knowledge management and collaborative innovation activities with innovation performance. The study empirically examines this conceptual model using a sample of 32 business owners in Small and Medium Enterprises (SMEs) Centers of Wallet and Bag Production in Mojokerto, East Java, Indonesia. PLS-SEM technique has been applied in data analysis and the SmartPLS 3.0 software is used to test the study hypotheses. The results indicate that entrepreneurial orientation and knowledge management has a direct effect on collaborative innovation activities. Similarly, the relationship of collaborative innovation activities and innovation performance is* also found to be significant. The findings also show the indirect effect of entrepreneurial orientation and knowledge management on innovation performance through collaborative innovation activities. The research implications, limitations and future research directions are highlighted in the concluding sections of the study.

Keywords: entrepreneurial, orientation, knowledge, innovation, performance

Introduction

The standards in the process of organisational innovation have increased in the business industry since the escalation of knowledge management (Shaher & Ali, 2020). The ability of a company's employees to perceive the obscure benefits of crucially acquired, implicit, and explicit knowledge plays a vital part in organisational innovation, feasibility, and success (Dash, 2019). Customers' needs, necessities, and expectations through knowledge-based firms have gradually replaced traditional labor's services and products with caseless change in recent years. Managing knowledge is a dynamic component in business organisations (Tsai, 2016). Knowledge management sharing is essential in today's competitive and volatile market for developing new knowledge in the process of long-term innovation in enterprises. Earlier research by Sundram et al. (2020) reveals that companies must motivate their employees to constantly communicate vital information and expertise in order to grasp and reuse knowledge assets in the hand. Scholars usually concentrate on how an organization's knowledge management and innovation-supporting culture may be developed in the future.

The present study focuses on the wallet and bag industry in Jabontegal, Mojokerto, East Java. It is one of the industrial sectors that occupy a priority scale from the Industry and Trade Office of Mojokerto. The wallet and bag SME center of Jabontegal has been officially fostered by the Industry

and Trade Office of Mojokerto since 2014, consisting of 32 SMEs. The business owners in the village, residents of the village have started their business since the 1990s but they just received guidance from the relevant agencies in 2014. The marketing of wallet and bag products is currently limited to East Java, with a minimum selling price of Rp. 15,000 - Rp. 150,000. The key challenges encountered so far are limited capital and shortage of employees/staff. Hence, there are many demands that remain fulfilled. In terms of production, it bears to note that the majority of wallet business owners do work on a wholesale basis (based on orders) obtained from their colleagues rather than producing for themselves and selling directly to buyers/distributors. Business problems faced by the wallet and bag SME center in Jabontegal village require serious attention from stakeholders in the local government. This is due to the fact that it will undoubtedly interfere with the achievement of the Mojokerto government's vision to make Mojokerto a small and medium industrial city (IKM) that is capable of supporting the economy in East Java. In broader aspects, the onslaught of wallet and bag products from abroad, especially from China, which can be easily bought online at affordable prices with a fast delivery pace is also a threat for local business people (Cao & Feng, 2019).

On the other hand, at a macro level, the local government has made various efforts to be able to lift small and medium enterprises to scale up so that they have a sense of competitiveness. These efforts have come in the form of technical guidance (in Bahasa namely Bimbingan teknis or Bimtek) on production techniques, marketing techniques, and business management to export management. This represents the dynamic business environment around wallet and bag business owners at the MSME Center in Jabontegal village of Mojokerto. In order to survive and adapt to this dynamic environment, entrepreneurial orientation is required. Entrepreneurial orientation is a way to see how business managers can reveal and exploit existing opportunities (Rauch et al, 2019)

In order to keep up with and improve their long-term performance, companies are under increasing pressure to develop new products and services quickly and efficiently Wang et al (2021). Collaborative innovation is defined as the sharing of information and working together of two or more supply chain partners to plan and carry out R&D in business operations such as suppliers, manufacturers, distributors, service providers and even customers (Wang et al, 2020). Collaborative innovation has been shown in existing studies to encourage mutual creativity, minimise R&D expenses as well as risks, and increase innovation results (Najafi, et al, 2018). However, not all businesses have fully reaped the benefits of this (Lamprini & Brochler, 2018).

To boost Innovation Performance, several research works have shown the relevance of creating a conceptual model. Variables that affect an organization's ability to innovate should be considered when working to improve the innovation performance of small and medium-sized enterprises (SMEs). According to recent research, factors such as entrepreneurial orientation and knowledge management have all been linked to improved innovation performance in SMEs (Mardani et al, 2018). As a result, understanding the process that enables these factors to have an impact on SMEs' innovation performance is critical. Therefore, the present study aims to discover and test the indirect effect of entrepreneurial orientation and knowledge management on organizational innovation performance through collaborative innovation activities.

Theoretical Foundation and Hypothesis Development

The present research model is grounded in the social network theory (SNT). SNT, or the idea of nodes and ties, is a type of network theory. Having a large number of connections means that a node has a large number of options for satisfying certain needs, which helps to reduce its reliance on other organizations. "Strong and weak" ties are often used by researchers to distinguish between different levels of strength in the links of an innovation network. Stronger ties are indicative of closer friendships and more regular interactions with one another. Having more connections than the other nodes in an

innovation network means that the node has an advantage over the others in the innovation network, and we refer to this as being a "focal node" or a "focal enterprise" in an innovation network (Liu, 2017). Alternatively, when researchers find weak edges and when the structure of inter-group linkages is weakly characterised, that node is referred to as a "marginal node" or a "marginal enterprise" (Akar & Dalgic, 2018). The focal and marginal firms have a number of benefits, including more bargaining power, the ability to draw the attention of other nodes, and the ability to exert a greater influence over other participants (Parnell et al, 2018)

Simply, SNT explains the dynamics of the interaction of social actors such as suppliers, distributors or customers etc. to enhance organizational innovation. As a result of social relations, organisations are able to coordinate their resources. Granovetter (1985) develops a micro-perspective approach to understand the impact of individual relationship links on a value consensus or action in the social network theory. This approach develops relevant indicators to evaluate the social network status as well as roles played by internal actors within the network (Liu et al., 2017).

Firms' ability to create value and maintain competitive advantage in an increasingly complicated and fast-paced environment is widely acknowledged as a crucial enabler (Mardani et al., 2018). There have been numerous definitions of innovation in existing literature, each from a distinct perspective. A number of different sorts of innovations, including innovation in product, product revolution, innovation in process and innovation in business operations, have been thoroughly researched and investigated (Cheng & Shiu, 2021). This research focuses on the four types of organisational innovation that have been identified. Product innovation is the first component, and it entails the introduction of innovative goods or services, as well as the introduction of significantly improved commodities or services (Adam et al, 2019). Process innovation is the second component, and it entails creating significant improvements to the production process or logistical support; this could also take the form of adopting significantly enhanced supporting activities such as purchasing, accounting, maintenance, and computing (Haneda & Ito, 2018). Market research and development is the third component, which comprises the invention of new marketing tactics. When it comes to ensuring the success of a firm, the development of innovative marketing tactics, processes, and tools is vital (Hammar & Belarbi, 2021). The implementation of novel organisational approaches in corporate processes, workplace organisation, or external relations is required as a last step in the process of organisational innovation (Mergel et al, 2018).

As time-based competition has become an increasingly essential problem for contemporary business organisations, more companies have realised that their competitors' ability to respond quickly to new product development poses a significant competitive danger to them. Because of this, they make an effort to deliver new products, services, or processes as rapidly as possible (Wang et al., 2021). Zhu, et al (2019) demonstrate how enterprises that prioritised innovation speed are able to grow their market share across a broad range of industries. When a company develops, manufactures, and sells new items more quickly than its competitors, it is able to establish market segments based on the quality of the service and the efficiency with which it conducts business. Because the information included in these innovations is not easily available to competitors, they are able to gain an advantage (Wang et al., 2021). As a result, innovation speed ensures that new goods are launched more quickly in reaction to the environment. With reduced time and expenses, it is possible to enhance the performance of the company (Zhu et al., 2019). Another important aspect determining the performance of a company is the quality of its innovations. A high level of innovation is demonstrated by the widespread adoption of a large number of new products, processes, or practises across a broad range of organisational activities. It necessitates the development of synergies between these multiple activity categories by businesses. Such synergies should be formed in a way that is unique, stimulates innovation, and contributes to the competitiveness of the organisation. Increased ideas are beneficial to both individuals and organisations. Innovative research and development will be more effective in meeting corporate performance objectives (Wang et al., 2021).

Hypothesis Development

The implementation of knowledge management in an organization is described as the process of finding, selecting, organizing, disseminating, and transferring important information and expertise needed for organizational operations (Zaied et al, 2012). Maharani, et al (2020), on 94 SMEs in Makassar, found that knowledge management aims to identify, create, represent, distribute, and enable the adaptation of insights and experiences. These insights and experiences consist of knowledge, both owned by individuals, as well as knowledge inherent in group processes or standard procedures.

This research involved innovation performance because the object of this research is a creative industry that demands new ideas as the main capital in making innovations on new products. Furthermore, Woodman (2008) explains that to improve the quality and efficiency of a product, innovation performance is measured on the basis of three dimensions, including product innovation, process innovation, and managerial innovation. Starting from the phenomenon that occurred in the MSME center of wallets and bags in Jabontegal Mojokerto, this study aims to determine the effect of entrepreneurial orientation, either directly or indirectly, on innovation performance through knowledge management.

Schumpeter (2017) confirm that entrepreneurial orientation is manifested in product and process innovations. It implies that entrepreneurship orientation as an instrument can potentially improve organizational performance through innovation, risk-taking and being proactive (Basile, 2015). Ebrahimi and Mirbargkar (2017) demonstrate how there is a positive and significant relationship between entrepreneurial orientation variables, namely risk-taking and being proactive towards innovation whilst the autonomy variable is found to be insignificant for innovation. This is due to the importance of inter-functional coordination and teamwork of every member of the organization. (Wang, et al 2015) found entrepreneurial orientation with three aspects, namely risk-taking, proactiveness, and significant innovation to be a driver of innovation because these three aspects were considered capable of collaborating with innovation and creating unique opportunities for the survival and growth of the company.

Zaied et al. (2012) defined knowledge management as a process that helps organizations to find, select, organize, disseminate and transfer important information and expertise needed for activities. There are four processes in knowledge management, namely: acquisition, conversion, application, and protection. It was further explained that knowledge management can encourage innovation, which then has the potential to increase competitiveness. Previous research conducted by Dewi and Sugito (2017) on 100 SMEs in Batu City, East Java, Indonesia found that knowledge management affected innovation performance. Previous research by, Argote and Fahrenkopf (2016) and Kosaka and Nie (2020) confirms that effective knowledge management facilitates knowledge communication and exchange required in the innovation process, and further enhances innovation performance through the development of new insights and capabilities.

Furthermore, as part of collaborative innovation activities, it is necessary for firms to divulge some of their internal information to external partners while at the same time ensuring that their core knowledge is protected against replication by competitors. Appropriability tactics are used to accomplish this. It is necessary to build efficient organizational structures, which include formal processes that facilitate the innovation process within the organization. This will result in enhanced firm innovation performance

Based on these arguments, hypotheses proposed for this study are:

- H1: Entrepreneurial orientation has a positive effect on collaborative innovation activities
- H2: Knowledge management has a positive effect on collaborative innovation activities
- H3: Collaborative innovation activities has a positive effect on innovation performance

- H4: Entrepreneurial orientation has an indirect effect on innovation performance through collaborative innovation activities
- H5: Knowledge management has an indirect effect on innovation performance through collaborative innovation activities

Methodology

The approach used in this research was causal quantitative. Entrepreneurial orientation was positioned as an exogenous variable and was defined as the perception of business owners at the MSME Center of Jabontegal Mojokerto on how to learn about their values, abilities and behavior in creating and innovating. The construct of entrepreneurial orientation was measured by five items scale (Shaher & Ali, 2020). In this study, another exogenous variable knowledge management is operationalized as the perception of business owners at the MSME Center of Jabontegal Mojokerto on how to utilize knowledge and expertise to create value and increase business effectiveness. A five-item scale was used to measure the construct of knowledge management (Shaher & Ali, 2020). Innovation performance was positioned as an endogenous variable and is defined operationally as the perception of business actors at the MSME center of Jabontegal Mojokerto who were able to create or accept, adapt and utilize the novelty value of the products they produce. Following Shaher and Ali (2020), innovation performance was measured using a 5-item scale. In this study, the intervening variable is collaborative innovation activities and operationalized as the perception of business owners at the MSME Center of Jabontegal Mojokerto on R&D process, whereby two or more supply chain partners work together toward introducing new products or services. The construct of collaborative innovation activities was measured by a 5-item scale (Wang & Hu, 2020)

The gathered responses were categorized into 5 Likert scales ranging from Strongly Disagree (point 1) to Strongly Agree (Point 5). This study used a census technique as the sampling technique so that all 32 bag and wallet business owners at the MSME Center of Jabontegal Mojokerto had the same opportunity to fill out the questionnaire. The data was collected by distributing questionnaires and conducting interviews with 5 business owners who were met incidentally. For the purposes of this study, business owners refer to all business owners as well as business managers of wallet and bag production at the MSME Center of Jabontegal Mojokerto. Each business owner had a workforce of 1 to 2 workers. The small number of workers was adjusted to the production capacity. Generally, this workforce was directly related to the production process such as pattern making, sewing and finishing (accessories installation). As for packaging work, it was generally done by the family. The business owners themselves also do various kinds of work, starting from buying materials, making patterns, sewing, marketing, and even selling. The research hypothesis testing was carried out by using the Partial Least Square or PLS approach.

Discussion

All business owners were male. Their age range included 20-25 year old respondents as many as 3 people (9%), 26-35 year old respondents as many as 14 people (44%), 36-40 year old respondents as many as 10 people (31%), 40 year old and older respondents as many as 5 people (16%). Based on the length of the business, the obtained information shows that respondents with a length of business between 1 - 2 years were 3 people (9%), respondents with a length of business between 3 - 4 years were 11 people (34%), and respondents with a length of business of more than 4 years were 18 respondents (56%). In terms of education level, 11 respondents (35%) were junior high school graduates and 21 respondents (65%) were high school graduates. This indicates that anyone can

conduct wallet and bag production business because it does not require a certain qualification or level of education.

Results showed the mean scores of each variable. The measurement of all variables was categorized into 5 ranges; 1) Mean score of 1 - ≤ 1.80 (very low); 2) Mean score of 1.81 - 2.60 (low); 3) Mean score of 2.61 - 3.40 (moderate); 4) Mean score of 3.41 - 4.20 (high); 5) Mean score of 4.2 - 5.00 (very high). The result is explained in Table 1 below:

Table 1: The Mean Distribution of Respondents' Answer

Variables	Mean	Category
Entrepreneurial Orientation	2.88	Moderate
Knowledge Management	3.24	Moderate
Collaborative innovation activities.	3.15	Moderate
Innovation Performance	3.42	High

Source: Data Processed by the Researchers

Based on the findings in Table 1, it can be interpreted that business owners' perceptions at the SME Center of Wallet and Bag Production in Jabontegal Mojokerto about how to learn about their values, abilities, and behavior in creating and innovating were classified as moderate. The perceptions of business actors at the MSME Center of Wallet and Bag Production in Jabontegal Mojokerto that are able to create or accept, adapt and use the novelty value of the products they produce were classified as moderate. The perception of business owners at the MSME Center of of Wallet and Bag Production in Jabontegal Mojokerto about how to use their knowledge and expertise for creating value and increasing the effectiveness of their business was high.

There were four criteria in using data analysis techniques with SmartPLS to assess the Outer Model namely Convergent Validity, Construct Validity, Discriminant Validity, and Composite Reliability.

The indicator is considered to be valid if the outer loading (loading factor) value is greater than 0.5 (Ghozali, 2014). The loading factor value of each indicator on the innovation variable, the ability to take risks, proactiveness, competitive aggressiveness, autonomy, knowledge management and innovation performance had reached the limit of > 0.5 . This means that the indicators used in this study have met the convergent validity, and thus, all indicators can be used for further analysis. The construct is considered to have good construct validity when the average variance extracted (AVE) value is above 0.5 (Ghozali, 2014).

Table 2: Measurement Model

Construct	Items	Loadings	Cronbach's Alpha	CR	AVE
Collaborative Innovation Activities	CIA1	0.705	0.733	0.824	0.504
	CIA2	0.707			
	CIA3	0.736			
	CIA4	0.706			
	CIA5	0.721			
Entrepreneurial Orientation	EO1	0.774	0.749	0.832	0.502
	EO2	0.745			
	EO3	0.723			
	EO4	0.754			
	EO5	0.701			

Innovation Performance	IP1	0.715	0.704	0.792	0.534
	IP2	0.701			
	IP3	0.772			
	IP4	0.766			
	IP5	0.754			
Knowledge Management	KM1	0.717	0.734	0.823	0.512
	KM2	0.702			
	KM3	0.727			
	KM4	0.709			
	KM5	0.715			

Source: Data Processed by Researchers

Based on Table 2, the dimensions of each variable in this study had a value of > 0.5 . This shows that the research variables had met the construct validity. Composite reliability was used to evaluate construct reliability. This study measured the value between variables whether they have good reliability or not by looking at the Cronbach's alpha table to determine whether the value is more than 0.7 to be considered as good (Ghozali, 2014). Table 2 shows that the value of each dimension is > 0.7 and thus, in the research model, each research variable was found to have met the composite reliability.

The discriminant validity calculation was conducted to test whether each indicator had a higher loading for each latent variable measured compared to indicators for other latent variables. (Ghozali, 2014). The HTMT ration criterion was used to access the discriminant validity of the model. The results in Table 3 show that each indicator in the study had an HTMT ratio less of than 0.85. Thus, it can be said that the indicators used in this study had a good discriminant validity.

Table 3: HTMT Ratio Criterion for Discriminant Validity

	Collaborative Innovation Activities	Entrepreneurial Orientation	Innovation Performance	Knowledge Management
Collaborative Innovation Activities				
Entrepreneurial Orientation	0.758			
Innovation Performance	0.753	0.678		
Knowledge Management	0.669	0.687	0.77	

Source: Data Processed by Researchers

Further, Inner model testing or the structural models was used out to determine the coefficient of determination, predictive relevance, estimated path coefficients, and parameter coefficients. The inner model figure can be seen as follows:

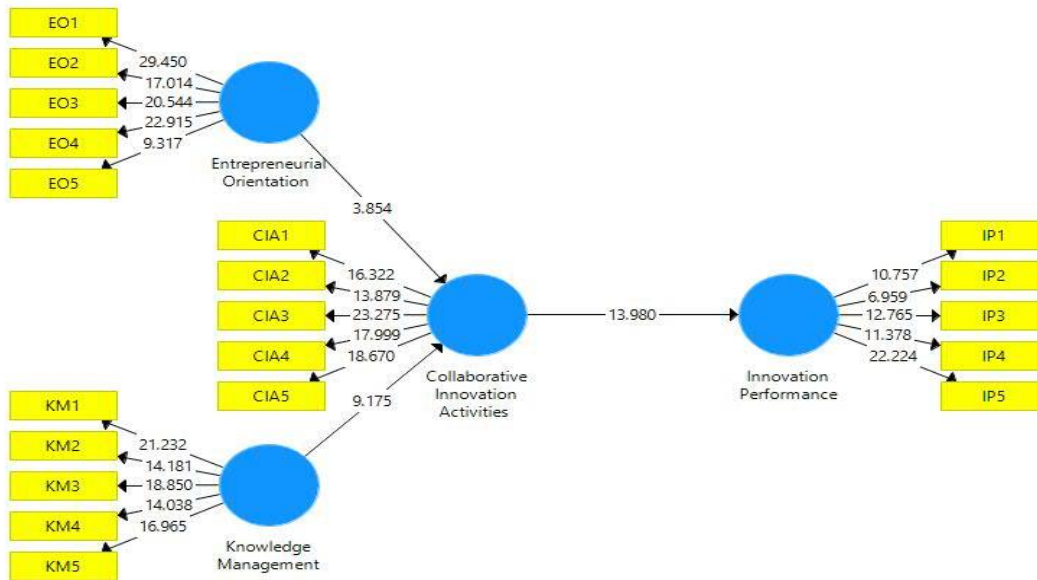


Figure 2. Estimation of Structural Model

The coefficient of determination serves to measure how far the model's is able to explain the variation in the dependent variable which is spread between zero and one (Ghozali, 2014).

Table 4: R-Square

Endogenous Variable	R ² Value
Collaborative Innovation Activities	0.461
Innovation Performance	0.327

Source: Data Processed by Researchers

Based on Table 4, the R² value for knowledge management is 0.826, which means that the large percentage of knowledge management can explain the effect of entrepreneurial orientation by 82.6%. The innovation performance's R² value of 0.613 means that the large percentage of innovation performance can explain the effect of entrepreneurial orientation and knowledge management by 61.3%.

Predictive relevance is used to measure how well an observation value is generated by the model (Ghozali, 2014). The higher the Q², the more fit a model is. The calculation result showed that the Q² value are 0.203 and 0.121, meaning that the model has moderate predictive relevancy.

The path coefficient estimates were evaluated based on the t-Statistics value. The measurement item used is considered to be significant if the t-Statistics value is greater than the 5% significance level. Furthermore, the parameter coefficient shows the direction of influence by looking at the positive or negative effects of the original sample as well as the magnitude of the influence of the independent variable on the dependent variable (Ghozali, 2014).

Table 5: Influence Coefficient and P Value

Hypothesis	Path Value	Std. Dev	T Values	P Values	CI ^{BC} High	CI ^{BC} Low
EO -> CIA	0.209	0.054	3.854	0.000	0.107	0.318
KM -> CIA	0.513	0.056	9.175	0.000	0.403	0.620
CIA -> IP	0.572	0.041	13.980	0.000	0.488	0.639
EO -> CIA -> IP	0.120	0.033	3.662	0.000	0.059	0.180
KM -> CIA -> IP	0.293	0.041	7.126	0.000	0.217	0.373

Note: CIA = Collaborative Innovation Activities. IP = Innovation Performance, EO = Entrepreneurial Orientation, KM = Knowledge Management

Source: Data Processed by Researchers

Based on Table 5 and Figure 2, the results of hypothesis testing are as follows: The effect of entrepreneurial orientation on collaborative innovation activities resulted in a coefficient of 0.572, p value of 0.000 < 0.05, therefore, it can be concluded that entrepreneurial orientation has a positive and significant effect on collaborative innovation activities, thus Hypothesis 1 was accepted. The influence of knowledge management on collaborative innovation activities resulted in a coefficient of 0.513, p value of 0.000 < 0.05. Thus, it can be concluded that knowledge management had a positive and significant effect on collaborative innovation activities, thus Hypothesis 2 was accepted. The influence of collaborative innovation activities on innovation performance resulted in a coefficient of 0.572, p value of 0.000 < 0.05, therefore, it can be concluded that collaborative innovation activities have a positive and significant effect on innovation performance, so Hypothesis 3 was also accepted.

The influence of entrepreneurial orientation on innovation performance through collaborative innovation activities resulted in a coefficient of 0.120, p value of 0.000 < 0.05, and it can be concluded that entrepreneurial orientation on innovation performance through collaborative innovation activities had a positive and significant effect, so Hypothesis 4 was accepted.

Finally, the influence of knowledge management on innovation performance through collaborative innovation activities resulted in a coefficient of 0.293, p value of 0.000 < 0.05, and for this reason, it can be concluded that knowledge management on innovation performance through collaborative innovation activities had a positive and significant effect, therefore, Hypothesis 5 was also accepted.

The results of statistical tests prove that the first hypothesis which states that entrepreneurial orientation has a positive and significant effect on collaborative innovation activities is accepted. This indicates that efforts to study values, abilities, and behavior in creating and innovating were able to increase the creation, adaptation, and utilization of the novelty value of the product produced by business owners at the wallet and bag centers in Jabontegal Mojokerto. The results of this study support the works of [Ebrahimi and Mirbargkar \(2017\)](#) and [Wang et al. \(2015\)](#) who found that entrepreneurial orientation has a significant effect on collaborative innovation activities.

When the mean results of respondents' answers were examined further, an interesting finding came up. Entrepreneurial orientation with a mean that was classified as moderate apparently had shown to improve collaborative innovation activities. This can be attributed to the experience factor as shown by the length of business that 56% of respondents experienced for more than 5 years, and 34% of respondents with experience from 2 years and less. Hence, these were factors that are found to encourage the ability to collaborate in innovation activities at the MSME Center of wallet and bag in Jabontegal Mojokerto. It was further proven that the models of wallet and bag production always followed market tastes and fashion developments.

The results of the statistical test prove that the second hypothesis which states that knowledge management has a positive and significant effect on collaborative innovation activities is also accepted. The mean obtained by the entrepreneurial orientation variable was moderate and the mean knowledge management variable was moderate. These results can be interpreted as indicating that to improve the collaborative innovation activities of business owners at the MSME Center of wallet and bag in Jabontegal Mojokerto, which was classified as sufficient, more efforts are needed to increase knowledge management.

In knowledge discovering activity, the majority of business owners of wallets and bags at the MSME Center of Jabontegal Mojokerto came from various observations. For businesses that still ran for 2 years and less than 5 years, the owners made early observations when they were young by observing their parents or their families' activities in making wallets or bags. Other business owners observed their own experience as tailors and other business owners before they finally opened their own business. At this stage of knowledge discovery, sources of knowledge came from internal and external business factors. One external source can be obtained from customers and trainings. This is due to all the business owners of wallets and bags in Jabontegal were under the guidance of the Trade and Industry Office, where the business owners routinely received technical guidance from related agencies.

The results show that there was a positive and significant influence of collaborative innovation activities on innovation performance, therefore, the third hypothesis was accepted. Thus, it can be interpreted that increasing collaborative innovation activities can significantly improve innovation performance. This research outcome was in line with the findings of [Zaied et al. \(2012\)](#) i.e. collaborative innovation activities can drive innovation, which then has the potential to increase competitiveness.

It is interesting to find that although the mean results of collaborative innovation activities were in the moderate category, it could improve the innovation performance of business owners at the MSME Center of of Wallet and Bag Production in Jabontegal Mojokerto. This is inseparable from the fact that these business owners focused in one location (center) so that the process of sharing information about models, innovating new production processes, and information on raw materials was particularly fast. Even fellow business owners did not mind sharing new ways of completing work. In addition, the old business experience factor also played a role in innovation performance.

Even though the innovation performance was high, what needs to be considered is the business management aspect. Although the Mojokerto Government's Industry and Trade Office had provided technical guidance in the form of training in business management, it seems that significant changes had not yet occurred. For example, in terms of financial management, time management, and quality control management. The business owners of wallets and bags at the MSME Center of of Wallet and Bag Production in Jabontegal Mojokerto reflected the characteristics of Micro Enterprise in Indonesia, where they have the nature of business owners (superior in production capability) but are not yet entrepreneurial i.e., having the desire to scale-up. The test results proved that collaborative innovation activities are capable of mediating the relationship between entrepreneurial orientation, knowledge management and innovation performance, and the nature of the mediation is partial mediation. The results of this study were consistent with previous research from [Rochdi et al \(2017\)](#) which sought to prove that entrepreneurial orientation and knowledge management has an indirect effect on innovation performance through collaborative innovation activities.

As mentioned in the previous discussion, the entrepreneurial orientation of business owners required attention from aspects of risk-taking, proactiveness, and autonomy. It is due to its impact on the efforts of business owners to collaborate innovation activities and expertise to create value and improve business effectiveness. In line with the opinion of [Saavedra, et al \(2017\)](#), organizations should realize the importance of effective collaborative innovation activities because the cost of ignoring it is severe.

The R^2 value for innovation performance of 0.327 indicates that the large percentage of innovation performance can explain the indirect effect of entrepreneurial orientation and knowledge management by 32.7%. This means that there were other external factors that contributed to the influence of innovation performance. It is suspected that these factors were the length of time of business which allowed the business owners to gain experience in conducting the production process.

Conclusions and Suggestions

The present study seeks to identify the factors that may enhance the innovation performance of an organization. The findings of the present study show that collaborative innovation activities among the business owners of SMEs have a significant effect on innovation performance of their businesses. The study also concludes that there is a direct effect of entrepreneurial orientation and knowledge management on collaborative innovation activities and indirect effect on innovation performance. More specifically, entrepreneurial orientation and knowledge management has an indirect effect on innovation performance through collaborative innovation activities.

The present study has several research implications. Such as that improving the innovation performance of the bag and wallet business owners of at the MSME Center of Jabontegal Mojokerto can be prioritized on three factors, namely entrepreneurial orientation, knowledge management and collaborative innovation activities. Entrepreneurship orientation is focused on internal factors of the business owners themselves. In addition, to face an increasingly complex and competitive business environment, it is necessary to formulate an approach that is focused on improving business owners' awareness about the importance of using knowledge to create value and increase the effectiveness of their business.

The description above indicates that policymakers need to adopt an approach to increase the mindset of business owners in order to be independent, proactive and daring enough to take risks. Proactive steps that can be taken are providing trainings on how to improve individual self-confidence in carrying out one's role as a business owner as well as training on how to increase the scale of a business, such as online marketing, product photography training, business communication training (including negotiation, bid making, public speaking), time management training, production quality management training, and store management training. The expected results from these training sessions can encourage business owners to be independent for the progress of their businesses.

The present study also carries a number of research limitations. First, the research collects data from business owners at the MSME Center of Jabontegal Mojokerto using purposive sampling technique. As a study conducted on specific respondents belonging to specific industries may limit the generalizability of the research. Second, the research utilizes the cross-sectional research design. In terms of suggestions for further researches, the study outcomes from the present work also have limitations in terms of the number of respondents. Therefore, a larger number of respondents is expected in further researches so that more actual results can be obtained. Further researchers can also conduct studies on other business scales such as medium and large scales. In addition, it is recommended to study and explore the role of other variables, such as self-efficacy, networking capability, and training to be able to produce variations in research results related to innovation performance in SME.

References

- Adams, P., Bodas Freitas, I. M., & Fontana, R. (2019). Strategic orientation, innovation performance and the moderating influence of marketing management. *Journal of Business Research*, 97, 129-140. doi:<https://doi.org/10.1016/j.jbusres.2018.12.071>)
- Akar, E., & Dalgic, T. (2018). Understanding online consumers' purchase intentions: a contribution from social network theory. *Behaviour & Information Technology*, 37(5), 473-487. doi:<https://doi.org/10.1080/0144929X.2018.1456563>)
- Argote, L., & Fahrenkopf, E. (2016). Knowledge transfer in organizations: The roles of members, tasks, tools, and networks. *Organizational Behavior and Human Decision Processes*, 136, 146-159. doi:<https://doi.org/10.1016/j.obhdp.2016.08.003>)
- Basile, A. (2015). Entrepreneurial Orientation in The Small and Medium Industries. *Far East Journal of Psychology and Business*, 7(2), 1-17.
- Cao, M., & Feng, Y. (2019). *Research on Consumer Demand of Tourist Souvenirs in China Market*. Paper presented at the 2019 3rd International Conference on Education, Economics and Management Research (ICEEMR 2019).
- Carro Saavedra, C., Serrano Villodres, T., & Lindemann, U. (2017). *Review and Classification of Knowledge in Engineering Design*. Paper presented at the 6th International Conference on Research into Design (ICoRD' 17).
- Cheng, C. C. J., & Shiu, E. C. (2021). Establishing a typology of open innovation strategies and their differential impacts on innovation success in an Asia-Pacific developed economy. *Asia Pacific Journal of Management*, 38(1), 65-89. doi:<https://doi.org/10.1007/s10490-019-09656-2>)
- Dash, A. (2019). Scaling the Innovativeness of Start-ups in India. *SEDME (Small Enterprises Development, Management & Extension Journal)*, 46(3), 196-204. doi:<https://doi.org/10.1177/0970846419863874>)
- Dewi, A. R., & Sugito, P. (2017). Mendongkrak Kinerja Inovasi Melalui Manajemen Pengetahuan Dan Kecakapan Organisasional Dengan Mediasi Orientasi Kewirausahaan. *Jurnal Studi Manajemen dan Bisnis*, 4(1), 265-276. doi:<https://doi.org/10.21107/jsmb.v4i1.3226>)
- Ebrahimi, P., & Mirbargkar, S. M. (2017). Green entrepreneurship and green innovation for SME development in market turbulence. *Eurasian Business Review*, 7(2), 203-228. doi:<https://doi.org/10.1007/s40821-017-0073-9>)
- Ghozali, I. (2014). *Structural Equation Modeling Metode Alternatif dengan Partial Least Squares (PLS)*.
- Granovetter, M. (1985). Economic Action and Social Structure: The Problem of Embeddedness. *American Journal of Sociology*, 91(3), 481-510. doi:<https://doi.org/10.1086/228311>)

- Hammar, N., & Belarbi, Y. (2021). R&D, innovation and productivity relationships: Evidence from threshold panel model. *International Journal of Innovation Studies*, 5(3), 113-126. doi:<https://doi.org/10.1016/j.ijis.2021.06.002>)
- Haneda, S., & Ito, K. (2018). Organizational and human resource management and innovation: Which management practices are linked to product and/or process innovation? *Research Policy*, 47(1), 194-208. doi:<https://doi.org/10.1016/j.respol.2017.10.008>)
- Kosaka, M., & Nie, Y. (2020). Shigenobu Nagamori and Nidec Corporation—Realize No. 1 Motor Company Through Developing a Knowledge-Creating Company. In J. Wang, M. Kosaka, K. Xing, & H. Bai (Eds.), *Entrepreneurship in the Asia-Pacific: Case Studies* (pp. 21-46). Singapore: Springer Singapore. https://doi.org/10.1007/978-981-32-9362-5_2 retrieved from https://doi.org/10.1007/978-981-32-9362-5_2
- Lamprini, K., & Brochler, R. (2018). How Collaborative Innovation and Technology in Educational Ecosystem Can Meet the Challenges Raised by the 4th Industrial Revolution. *World Technopolis Review*, 7(1), 2-14. doi:<https://doi.org/10.7165/wtr17s1218.18>)
- Liu, W., Sidhu, A., Beacom, A. M., & Valente, T. W. (2017). Social network theory. *The international encyclopedia of media effects*, 1-12. doi:<http://dx.doi.org/10.1002/9781118783764.wbieme0092>)
- Maharani, M., Maupa, H., & Aswan, A. (2020). Knowledge Management and Entrepreneurship Aspects on Performance through Competitive Advantage of SMEs in Makassar City. *Hasanuddin Journal of Applied Business and Entrepreneurship*, 3(1), 27-35. doi:<https://doi.org/10.26487/hjabe.v3i1.294>)
- Mardani, A., Nikoosokhan, S., Moradi, M., & Doustar, M. (2018). The Relationship Between Knowledge Management and Innovation Performance. *The Journal of High Technology Management Research*, 29(1), 12-26. doi:<https://doi.org/10.1016/j.hitech.2018.04.002>)
- Mergel, I., Kleibrink, A., & Sörvik, J. (2018). Open data outcomes: U.S. cities between product and process innovation. *Government Information Quarterly*, 35(4), 622-632. doi:<https://doi.org/10.1016/j.giq.2018.09.004>)
- Najafi-Tavani, S., Najafi-Tavani, Z., Naudé, P., Oghazi, P., & Zeynaloo, E. (2018). How collaborative innovation networks affect new product performance: Product innovation capability, process innovation capability, and absorptive capacity. *Industrial Marketing Management*, 73, 193-205. doi:<https://doi.org/10.1016/j.indmarman.2018.02.009>)
- Parnell, D., Widdop, P., Groom, R., & Bond, A. (2018). The emergence of the sporting director role in football and the potential of social network theory in future research. *Managing Sport and Leisure*, 23(4-6), 242-254. doi:<https://doi.org/10.1080/23750472.2018.1577587>)
- Rauch, A., Wiklund, J., Lumpkin, G. T., & Frese, M. (2009). Entrepreneurial Orientation and Business Performance: An Assessment of past Research and Suggestions for the Future. *Entrepreneurship Theory and Practice*, 33(3), 761-787. doi:<https://doi.org/10.1111/j.1540-6520.2009.00308.x>)

- Rochdi, D., Khatijah, O., & Muhammad, A. (2017). Mediating role of the innovation effectiveness on the relationship between entrepreneurial orientation and the SMEs performance in Algeria. *Polish Journal of Management Studies*, 15(1), 185-196. doi:<http://dx.doi.org/10.17512/pjms.2017.15.1.18>)
- Schumpeter, J. A. (2017). *The Theory of Economic Development: An Inquiry into Profits, Capital I, Credit, Interest, and the Business Cycle*: Routledge.<https://doi.org/10.4324/9781315135564> retrieved from
- Shaher, A., & Ali, K. (2020). The effect of entrepreneurial orientation and knowledge management on innovation performance: The mediation role of market orientation. *Management Science Letters*, 10(15), 3723-3734. doi:<http://dx.doi.org/10.5267/j.msl.2020.6.020>)
- Sundram, S., Venkateswaran, P., Jain, V., et al. (2020). The Impact of Knowledge Management on The Performance of Employees: The Case of Small Medium Enterprises. *Productivity Management*, 25, 554-567.
- Tsai, A. (2016). A hybrid model of knowledge management for new service development. *Journal of Systems Science and Systems Engineering*, 25(4), 424-447. doi:<https://doi.org/10.1007/s11518-015-5280-2>)
- Wang, C., & Hu, Q. (2020). Knowledge sharing in supply chain networks: Effects of collaborative innovation activities and capability on innovation performance. *Technovation*, 94-95, 102010. doi:<https://doi.org/10.1016/j.technovation.2017.12.002>)
- Wang, K. Y., Hermens, A., Huang, K. P., & Chelliah, J. (2015). Entrepreneurial Orientation and Organizational Learning on SMEs' Innovation. *International Journal of Organizational Innovation*, 7, 71-81. Retrieved from <http://hdl.handle.net/10453/35479>
- Wang, Z., Cai, S., Liang, H., Wang, N., & Xiang, E. (2021). Intellectual capital and firm performance: the mediating role of innovation speed and quality. *The International Journal of Human Resource Management*, 32(6), 1222-1250. doi:<https://doi.org/10.1080/09585192.2018.1511611>)
- Woodman, R. W. (2008). Creativity and organizational change: Linking ideas and extending theory. *Handbook of organizational creativity*, 283-300.
- Zaied, A. N. H., Hussein, G. S., & Hassan, M. M. (2012). The role of knowledge management in enhancing organizational performance. *International journal of information engineering and electronic business*, 4(5), 27-35. doi:<http://dx.doi.org/10.5815/ijieeb.2012.05.04>)
- Zhu, X., Xiao, Z., Dong, M. C., & Gu, J. (2019). The fit between firms' open innovation and business model for new product development speed: A contingent perspective. *Technovation*, 86-87, 75-85. doi:<https://doi.org/10.1016/j.technovation.2019.05.005>)