

An Empirical Study on The Entrepreneurial Factors Influencing Collaborative Innovation to Cope with Crisis Situations

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Abstract. This study is aimed to validate entrepreneurial mindset, entrepreneurial culture, and entrepreneurial leadership in enhancing regional-owned enterprise innovation performance in the context of strategic entrepreneurship after the crisis of COVID-19 pandemic. This research was conducted using quantitative research methods. Data was collected through questionnaires from employees of agriculture-based regional owned enterprises covering the Commissioner, Directors, Division Head, Department Head, Section Head and Staff and analyzed using Partial Least Square-Structural Equational Modeling (PLS-SEM). Result show that Entrepreneurial Mindset and Entrepreneurial Culture are positive and significant impact on Collaborative Innovation. Entrepreneurial leadership has a positive but insignificant impact. The research validates the factors of Strategic Entrepreneurship are relevant in regional-owned enterprises in fostering Innovation Performance. Because leadership in regional-Owned Enterprises is a position considered closely related to political situation that can be replaced at any time depends on the leadership of the regional government, wherein organizations shall strengthen entrepreneurial mindset and entrepreneurial culture to maintain their innovation performance.

Keywords: entrepreneurial mindset, entrepreneurial culture, entrepreneurial leadership, collaborative innovation, regional owned enterprise

1. Introduction

Crisis can be classified as “*extreme, unexpected, or unpredictable event that requires an urgent response from organizations*” (Doern et al., 2019:401). Durst & Henschel, (2021) stated that although different types of crisis exists, all of them have three elements in common: *surprise, threat, dan a short response time*. In the last decade, there have been at least three categories of crisis faced by business people in Indonesia and the world; economic and monetary crisis, technology crisis, and public health crisis due to COVID-19.

Crisis has changed the way companies and industries conduct their business activities. Likewise with COVID-19. Furthermore, COVID-19 fulfills the fourth crisis indication of Boin & Lodge, (2016), bypassing geographic and policy boundaries. Related to business context, Ivanov & Dolgui, (2020) stated that COVID-19 had collapsed industry boundaries and had a broad effect simultaneously on industries in various sectors on a global scale. Every company and industry faced the uncertainty about the duration of these changes. The crisis due to COVID-19 has also led to the creation of the *Low Touch Economy* (Vieira de Jesus et al., 2020) and cause simultaneous disruptions to supply and demand, triggering ripple effects and reduced performance in terms of revenue, service levels, and productivity (Ivanov & Dolgui, 2020). *Low Touch Economy* refers to the new state of the economy, as a result of the containment of the COVID-19 pandemic and health mitigation measures that cause behavioral changes and economic disruption (Vieira de Jesus et al., 2020). Companies in the context of the *Low Touch Economy* are forced to adopt their business models, create innovations, as well as flexibly navigate the aftershocks of the pandemic. *The Low Touch Economy* is supported by the eighth crisis; namely, technological disruption. The COVID-19 pandemic has accelerated digital technology innovation much faster because people rely heavily on technology to conduct their activities. The second wave of disruption is a continuation of the disruption phenomenon that previously occurred through *E-Commerce* and *online* transportation (Kusubandio, 2021).

Behind the crisis there is an opportunity. This is the perception that is generally held by *entrepreneurs*, both individual *entrepreneurs* and organizational *entrepreneurs* in the context of various sectors. Industrial changes caused by the crisis in fact continue to roll and this is not only a problem or obstacle but also an *entrepreneurial* opportunity for those who adhere to or adopt *entrepreneurship*. In fact, it is not uncommon for crisis to force individuals or organizations to adopt *entrepreneurship*. These individuals or organizations implement *entrepreneurship* and *entrepreneurship* makes individuals or organizations become *entrepreneurs*. Crisis in the context of *entrepreneurship* is seen as acting as a more permanent agent of change thereby creating a new business environment that stimulates the emergence of new *entrepreneurial* opportunities (Belousova et al., 2021). Belousova et al., (2021) explained that crisis time is important in *entrepreneurship*. For example, the COVID-19 crisis triggered the emergence of *entrepreneurial* opportunities resulting in a disruptive Schumpeterian wave in Industry 4.0 and accelerating the adoption of entrepreneurship in corporate governance. The pandemic functions as a coercive function to encourage the birth of new ideas, new inventions, and new innovations. According to Sharma et al., (2020) trends exist in almost every crisis due to disruption, which comprise demand uncertainty, increasing the role of technology in achieving agility, and increasing focus on collaborative, social, and environmental innovation.

According to Chesbrough, (2003), Najafi-Tavani et al. (2018), Y. Li et al. (2019), X. Li et al. (2020), Korber et al. (2022), Mata et al. (2023), and Wan et al. (2023) collaborative innovation is defined as a company's interactions with various collaborating partners to accelerate internal innovation, which may include process innovation, management innovation, product or service innovation, and so on. Nowadays, many businesses engage in collaborative innovation, which enables them to share knowledge with outside partners and gain access to new information, resources, and technologies (Xie et al., 2016). Concentrating only on conventional, internal, and closed innovation techniques in the current context is no longer sufficient for businesses to address the rapid technology transformation and market demands (Eisenreich et al., 2021; Maoxiang et al., 2022). As a result, finding and utilizing

external innovative resources is essential for businesses to implement innovations sustainably (Rauter et al., 2019). Consequently, a new business model known as collaborative innovation has emerged in recent years (Martinez et al., 2023; Sikandar et al., 2023)

Innovation in *entrepreneurship* at the corporate level is the center of attention of the company which is extremely important for the sustainability of achieving competitive advantage (Teece et al., 1997). The evolution of an increasingly complex business environment makes innovation an unavoidable choice to gain a company's competitive advantage wherein it can improve performance, growth, or even company survival (Daellenbach et al., 1999). One of the *entrepreneurial* companies that is seen as innovative and successful through various crisis due to its innovative performance is Agriculture-Based Regional Enterprise owned by DKI Jakarta Province Government.

The success of the innovation performance of the agriculture-based regional enterprise owned by DKI Jakarta Province Government is inseparable from the ability to act as an *entrepreneurial* company. If viewed from the point of view of the corporate *entrepreneurship* field of study, it is indicated that the corporate behavior as described above is a practice of the strategic *entrepreneurship* function within the company. The variables that determine the success of strategic *entrepreneurship* practices are the success of *collaborative innovation* with an *entrepreneurial mindset*, *entrepreneurial culture* and *entrepreneurial leadership*. With these variables, they play a strategic role in the realization of collaborative innovation, which is the foundation for the company's sustainability in the post-COVID-19 pandemic.

Utoyo et al. (2020) claimed that strategic entrepreneurship can enhance innovation performance in a disruptive environment. Using collaborative innovation, Tsai & Lei (2016) discovered that small and large businesses can successfully engage in strategic entrepreneurship. Previous studies on collaborative innovation focuses less on strategic entrepreneurship that require further investigation, especially in the context of regional-owned enterprise. To minimize this knowledge gap, this research examines the separate impact of strategic entrepreneurship factors on collaborative innovation in regional on enterprise context. Accordingly, this research seeks to answer the fundamental question: Do strategic entrepreneurship factors impact collaborative innovation? This paper proposes that entrepreneurial mindset positively and significantly affects collaborative innovation; entrepreneurial culture positively and significantly affects collaborative innovation; and entrepreneurial leadership positively and significantly affects collaborative innovation. The study will contribute to the empirical literature on collaborative innovation in strategic entrepreneurship studies. Thus, the study's progression is as follows: first, a review of pertinent literature that addresses the theoretical model's constructs to generate a number of hypotheses. Second, a thorough explanation of the methodology used and the outcomes, followed by a discussion and conclusion that highlights the theory's contributions, implications, limitations, and recommendations for future research.

2. Review of Literature and Research Hypotheses

2.1. Entrepreneurial Mindset

Entrepreneurial mindset (EM) is a term derived from two words "*entrepreneurial*" and "*mindset*." Etymologically, understanding these two words will lead to an understanding of the EM variable. *Mindset* according to Markley et al., (2015) is *a way of thinking that shapes behavior*. Meanwhile *entrepreneurial* according to Wickham, (2006) is *an adjective describing how the entrepreneur undertakes what they do*. Based on the explanation from Wickham (2006), using adjectives is required "*there is a particular style to what entrepreneurs do*". At the level of the organization or organization represents *entrepreneur*, Atherton, (2004) defined the company to become *entrepreneurial* as "*a behaviour that can be demonstrated and manifested regardless of the nature of involvement in an organization*."

Furthermore Sinclair, (2012), describes that EM is "*a way of thinking about opportunities, that is,*

sensing new business opportunities and processes". Based on this explanation, it can be seen that the mindset stimulates the intention to act. In the context of *entrepreneurial* or EM means stimulating someone to take *entrepreneurial* action based on their knowledge of the opportunities and resources needed for opportunities to materialize. Such actors in *entrepreneurship* are known as *entrepreneurs* and *intrapreneurs*. The difference between the two according to Markley et al., (2015) is explained as follows:

An entrepreneur is one who has an idea, finds sources of financing and support and then creates a new business independent from other businesses. An intra-preneur is one working at any level in a medium-to-large organization who takes direct responsibility for turning an idea into a profitable finished product, service enhancement, or cost-reduction. His or her behavior can provide the firm with an extra, competitive push.

2.2. Entrepreneurial Culture

Entrepreneurial Culture (EC) is a term derived from two words '*entrepreneurial*' and '*culture*'. Understanding these two words etymologically will lead to an understanding of the EC variable. The word *entrepreneurial* according to Wickham, (2006) is "*an adjective describing how the entrepreneur undertakes what they do*". Based on the explanation from Wickham, (2006), using adjectives it is required "*there is a particular style to what entrepreneurs do*". At the level of the organization or organization represents *entrepreneur*, Atherton, (2004) then defines the company to become *entrepreneurial* as "*a behaviour that can be demonstrated and manifested regardless of the nature of involvement in an organization*". According to Brownson, (2011), culture is defined as "*an attribute, values, beliefs, and behaviour which can be learned or acquired by man from one generation to another, from one individual to another, from one group to another as long as one is a member of the society and it has the ability of distinguishing one group from another*". Ravasi & Schultz, (2006) stated that "*organizational culture is a set of shared mental assumptions that guide interpretations and actions in organizations by defining appropriate behaviour for various situations*". Based on this definition, it is known that although a company has its own "unique culture," there are often co-existing cultural conflicts due to the various characteristics of the management team.

2.3. Entrepreneurial Leadership

In an increasingly volatile and competitive business environment, *entrepreneurial* behavior within an organization is increasingly important across contexts to drive innovation, and adaptation to changing environments. McGrath & MacMillan, (2000) recommends incorporating an *entrepreneurial mindset* as a core element of strategic management, especially in a highly competitive environment. Consequently, focusing on the concept of *entrepreneurial leadership* is an important step. The concept of *entrepreneurial leadership* is becoming increasingly important as organizations must become more *entrepreneurial* in order to increase their performance, their capacity for adaptation, and long-term survival (Gupta et al., 2004). *Entrepreneurial leadership* occurs in the combination of *entrepreneurship* and leadership.

Intense competition, *entrepreneurial leadership* is the main driver for maintaining an *entrepreneurial* mindset and culture (Kuratko, 2010; Thornberry, 2006). *Entrepreneurial* leadership is the ability to influence others to manage resources strategically to emphasize opportunity-seeking and profit-seeking behaviors (Covin & Slevin, 2002; Ireland & Hitt, 2005). Leaders and organizational culture are symbiotic (S. K. Sharma & Sharma, 2010; Krumm & Krumm, 2003). A leader's judgments shape organizational culture and cultural attributes influence future leaders' decisions and actions. Thus, an "*entrepreneurial spiral*" exists between the leader's ability to identify opportunities and the attributes of organizational culture that positively influence following them (Shepherd et al., 2009).

Entrepreneurial leadership is explicitly expected to achieve its goal of identifying opportunities and exploiting them under certain conditions. This means that leaders themselves emerge as reference

models for *entrepreneurship* and encourage followers who have significant levels of *entrepreneurial* effectiveness and *entrepreneurial* passion and where the organizational context and environment, as well as the availability of resources, are promising. *Entrepreneurial* leadership is demonstrated by leadership styles when they engage in a subtle combination of risk-taking, activity, and innovation.

2.4. Collaborative Innovation

Innovation capability must also be dynamic. In this open and borderless era, innovation in companies requires the best ideas and innovation processes from internal and external sources of the company. This can happen because an increasingly important role exists in the company in the form of knowledge. Over the previous decades, researchers have observed many problems in companies, often caused by newcomers with innovative new business models (Wang et al., 2017). The ever-increasing number of new entrants poses a threat (or opportunity) to the company. One of the company's efforts to respond to this is by utilizing knowledge from other companies. Innovation in strategic *entrepreneurial*, large and small companies are always thinking how to maintain the company's sustainability (Ireland et al., 2003).

Large companies tend to be skilled at building competitive advantage, but their emphasis on operational effectiveness often undermines the company's ability to explore additional opportunities on an ongoing basis. The opportunity-seeking skills of small firms may be strong, but there is limited knowledge and a lack of market power that prevent companies from achieving a competitive advantage (Ketchen Jr et al., 2007). Researchers highlight collaborative innovation which is a current trend so as to get an innovation that has advantages. Collaborative innovation is defined as the pursuit of innovation across corporate boundaries with start-ups as a source of disruptive innovation through the sharing of ideas, knowledge, expertise and opportunities. According to Ketchen Jr et al., (2007), Collaborative innovation with start-ups will increase the gap in innovation capability and complement enterprise-level activities to close the gap between enterprise innovation capability levels in creating the innovations that enterprises need to achieve. Large and small companies that integrate collaborative innovation into strategic *entrepreneurial* processes can or will create continuous wealth.

2.5. Effect of Entrepreneurial Mindset on Collaborative Innovation

The company's external environment and individual capabilities within the company can be used to find or create new opportunities. The company's ability to take advantage of these opportunities to achieve competitive success (Hitt et al., 2011). This is consistent with the research conducted by Gaglio, (2001) that individuals who act as *entrepreneurs* seek opportunities in dynamic markets, using their stock of knowledge and ability to understand and deal with uncertainty. The ability to operate in conditions of uncertainty can also be based on individual risk motivation and propensity (Baum & Locke, 2004). McGrath & MacMillan, (2000) recommends an *entrepreneurial* mindset as a core element of strategic management, especially in an environment of high-speed competition and change. Therefore, a disruptive environmental factor is a disruptive environment that is imposed, as it is felt by individuals in the organization.

Facing a disruptive environment by instilling an *entrepreneurial* mindset in individuals in the company will result in collaborative innovation, mainly for building a whole new (pioneer) capability, as well as technological support in current conditions, which is a major capital in achieving the company's competitive advantage. This can make it profitable for companies, in entering and developing new markets, and start-ups to build products.

2.6. Effect of Entrepreneurial Culture on Collaborative Innovation

The changing environment demands individuals and organizations to become more *entrepreneurial* in order to survive. *Entrepreneurial* culture refers to an organizational culture that is committed to and shares the importance of simultaneously seeking opportunity and seeking profit. It is a culture where new ideas and creativity are expected, risk-taking is encouraged, failure is tolerated, learning is

promoted, innovation is championed, and continuous change is observed as the conveyor of opportunity (Ireland et al., 2003). Thus, an *entrepreneurial* culture encourages and supports the ongoing search for exploitable *entrepreneurial* opportunities with sustainable competitive advantages (McGrath & MacMillan, 2000).

Innovation capability must also be dynamic. In this open and borderless era, innovation requires the best ideas and innovation processes from internal and external sources of the company. There is an increasingly important role in start-ups. Over the previous decades, the authors have observed a wide variety of problems in firms, often caused by new entrants with innovative new business models (Wang et al., 2017). As the overall interest in start-ups grows worldwide, the number of start-ups is increasing, posing an imminent threat (or opportunity) to existing companies. Many companies have tried to find ways to capitalize on the know-how from these young *entrepreneurial* companies. Companies large and small are equally vulnerable to size and age obligations with regard to innovation in strategic entrepreneurship, but for different reasons (Ireland et al., 2003).

2.7. Effect of Entrepreneurial Leadership on Collaborative Innovation

According to Swiercz & Lydon (2002), have explained the relationship between *entrepreneurial* leadership and innovation performance, suggesting that *entrepreneurial* leadership positively influences a firm's innovation performance. Swiercz explains the role of *entrepreneurial* leadership in the innovation performance of firms by stating that *entrepreneurial* leadership positively influences creativity and innovation. Al Mamun et al., (2018) have described the relationship between entrepreneurial leadership, innovation performance of firms, and their sustainability. Previous studies regarding the impact of *entrepreneurial* leadership on innovation performance establishes a relationship between *entrepreneurial* leadership and innovation performance; However, little work has been conducted to assess the impact of *entrepreneurial* leadership on firm product innovation performance. Thus, the following is postulated by building on this premise (Indawati et al., 2018).

Open and collaborative innovation assumes the incorporation of external ideas and capabilities into the new business development process (Tidd, 2014). By adopting external sources such as universities, start-ups and other established players, companies can access innovative ideas and developments that exist outside their organization. This collaboration allows them to accelerate time-to-market while sharing the risks and costs associated with innovation. In a disruptive business environment, where disruptors mainly come from the emergence of start-ups, companies realize the need to adopt collaborative innovation strategies, one of which is corporate venture, or corporate venture capital (Van De Vrande, 2017). Studies in this field show that firms involved in venture capital investment firms have greater innovation rates and higher market performance (Van De Vrande, 2017).

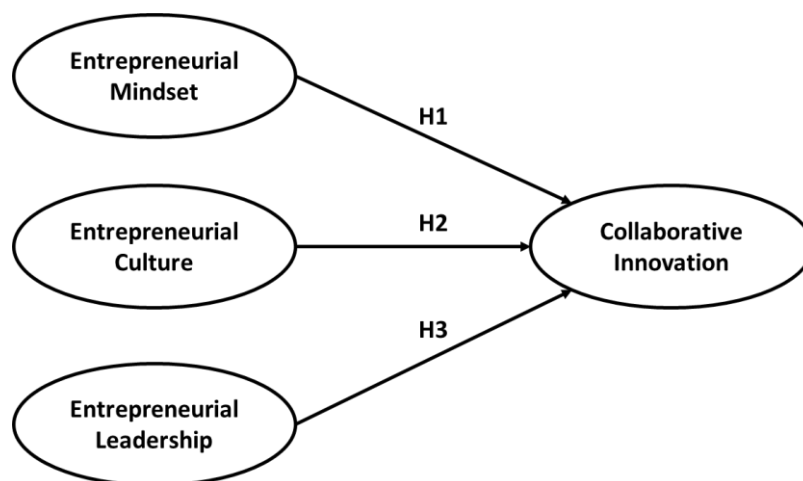


Fig 1. Research Hypothesis Model

3. Methodology

This study was conducted using quantitative research methods. Data was collected through questionnaire from to employees of agriculture-based regional owned Enterprise covering Commissioner, Directors, Division Head, Department Head, Section Head and Staff and analyzed using Partial Least Square-Structural Equational Modeling (PLS-SEM) with SmartPLS 3.2.9 software. The conceptual model, presented in (Figure.1), highlight the interconnections between constructs in light of the hypotheses proposed in the literature review. Selecting and choosing the appropriate participants is crucial for reliable data to assess model construct correlations. A questionnaire distributed to the employees of PT. Food Station Tjipinang Jaya, Jakarta. Employee samples are divided into six levels: commissioners, directors, division head, department head, section head, and staff in Jakarta. Determination of the number of samples using the Slovin formula (Umar, 2003). The result of the sample calculation requires 146 employees for research purposes (Table 1).

Table 1. Research Sample

No	Structure/Level (Position)	Sample
		Quantity
1	Level 1 = Commissioner	2
2	Level 2 = Management	2
3	Level 3 = Division Head	3
4	Level 4 = Head of Department	9
5	Level 5 = Section Chief	19
6	Level 6 = Staff	111
Total		146

3.1. Measurements

The survey items used in the study refer to the Likert scale. Joshi *et al.* (2015) stated that the Likert scale presented to respondents should use a five-point scale. Multi-item measurements were developed to help reduce measurement errors associated with single item measurements. Factor exploration and reliability analysis were performed to identify and refine the constructs used for data analysis. The questions in the survey were asked specifically for the 2020–2021 time period. This temporal focus aims to ensure that the proposed conceptual model can be assessed relative to activities conducted during the crisis, rather than activities conducted before or after the crisis.

Entrepreneurial Mindset measured from a scale developed by Utoyo *et al.*, (2020) and adopting the following components as a basis for measurement, in which there will be 5 indicators. *Entrepreneurial Culture* measured from a scale developed by Ireland *et al.*, (2003) dan Utoyo *et al.*, (2020) and adopting the following components as a basis for measurement, in which there will be five indicators. *Entrepreneurial Leadership* measured from a scale developed by Ireland *et al.*, (2003); Renko *et al.*, (2015) and adopting the following components as a basis for measurement, in which there will be 7 indicators. *Collaborative Innovation* measured from a scale developed by Van de Vrande *et al.*, (2009) dan Wang *et al.*, (2015) in which there will be six indicators of measurement. All variables in the study are included in Appendix A: Scale Development.

4. Results

To test the proposed research hypothesis, the researcher used statistical analysis Partial Least Squares Structural Equation Model (PLS-SEM) with software SmartPLS 3.2.9. According to Henseler & Chin, (2010), the study was conducted in two stages to analyze and interpret the results of PLS Henseler & Chin, (2010) that is *evaluation of the measurement model*, which includes individual checks on *Convergent Validity* (seen from outer loading and AVE value), *Discriminant Validity* (seen from *cross loading test*; *Fornell-Larcker Criterion test*; *Heterotrait-Monotrait Ratio/HTMT*) *test*, *Composite Reliability test*, and Evaluation of Structural Model.

4.1. Evaluation of the Measurement Model

The evaluation result of the Measurement Model obtained that each item in the construct fulfills the minimum requirements of 0.7 (Anderson & Black, 2010). The research construct is deemed reliable if it has value of *composite reliability* above 0,70 and a *Cronbach's alpha* above 0,60. The value of *average variance extracted (AVE)* sufficient to measure the validity is equal to 0.50 (Ghozali, 2006).

Table 2. Measurement Model

<i>Counstruct</i>	<i>Item</i>	<i>Outer Loadings</i>	<i>Crobach's Alpha</i>	<i>Composite Realiability</i>	<i>AVE</i>
Entrepreneurial Mindset	EM1	0.730	0.827	0.878	0.591
	EM2	0.795			
	EM3	0.758			
	EM4	0.794			
	EM5	0.765			
Entrepreneurial Culture	EC1	0.765	0.840	0.887	0.610
	EC2	0.756			
	EC3	0.772			
	EC4	0.790			
	EC5	0.822			
Entrepreneurial Leadership	EL1	0.866	0.914	0.931	0.660
	EL2	0.855			
	EL3	0.797			
	EL4	0.837			
	EL5	0.778			
	EL6	0.773			
	EL7	0.777			
Collaborative Innovation	CI1	0.881	0.949	0.959	0.797
	CI2	0.897			
	CI3	0.915			
	CI4	0.894			
	CI5	0.880			
	CI6	0.888			

Test criteria proposed by Fornell & Larcker, (1981) stated that if the AVE root value is higher than the correlation between the other constructs, then it is concluded that the variable has a good level of discriminant validity. Table 2 shows that all variables have a higher AVE root value than the highest correlation between these variables and other variables wherein it can be concluded that each construct has good discriminant validity.

In addition to looking at the value of the cross loading factor and the Fornell-Larcker criterion test, there is a new criterion for testing Discriminant Validity; namely, by looking at the results of the heterotrait-monotrait ratio (HTMT) matrix in PLS (Henseler et al., 2015). According to Henseler et al., (2015) recommends that the measurement value should be less than 0.85 in order to have good discriminatory validity. However, although the value is above 0.85 to a maximum of 0.90, it is still considered to have sufficient discriminatory validity. Thus, Table 4 confirms the discriminant validity of the rating scale used in empirical research.

Table 3. Analysis of discriminant validity for the procedure proposed by Fornell & Larcker

	Collaborative Innovation	Entrepreneurial Culture	Entrepreneurial Leadership	Entrepreneurial Mindset
Collaborative Innovation	0.893			
Entrepreneurial Culture	0.671	0.781		
Entrepreneurial Leadership	0.406	0.491	0.813	
Entrepreneurial Mindset	0.585	0.724	0.423	0.769

Table 4. Analysis of Heterotrait-Monotrait (HT-MT) discriminant validity

	Collaborative Innovation	Entrepreneurial Culture	Entrepreneurial Leadership	Entrepreneurial Mindset
Collaborative Innovation				
Entrepreneurial Culture	0.747			
Entrepreneurial Leadership	0.427	0.554		
Entrepreneurial Mindset	0.656	0.870	0.487	

4.2. Evaluation of Structural Model

Testing the evaluation of the structural model in SEM Smart-PLS is carried out by a bootstrapping process which produces a calculated t value. If the calculated t value is greater than the t-statistic with a 95% confidence level (1.96), the hypothesis is significant. Based on the bootstrapping, a t-count of the effect of *Entrepreneurial Mindset* on Collaborative Innovation is obtained with *T Statistics value* $4.987 > 1,96$. The Influence of *Entrepreneurial Culture* on Collaborative Innovation with *T Statistics value* $1.086 > 1,96$. Lastly, the influence of *Entrepreneurial Leadership* on Collaborative Innovation with *T Statistics value* $2.017 > 1,96$.

Table 5. Structural Model

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Entrepreneurial Culture -> Collaborative Innovation	0.487	0.488	0.098	4.987	0.000
Entrepreneurial Leadership -> Collaborative Innovation	0.084	0.084	0.077	1.086	0.277
Entrepreneurial Mindset -> Collaborative Innovation	0.197	0.204	0.097	2.017	0.044

The results obtained in Table 5 show the following; the Effect of *Entrepreneurial Mindset* on Collaborative Innovation (H1 is Significant), the Effect of *Entrepreneurial Culture* on Collaborative Innovation (H2 is Not Significant), and the Effect of *Entrepreneurial Leadership* on Collaborative Innovation (H3 is Significant)

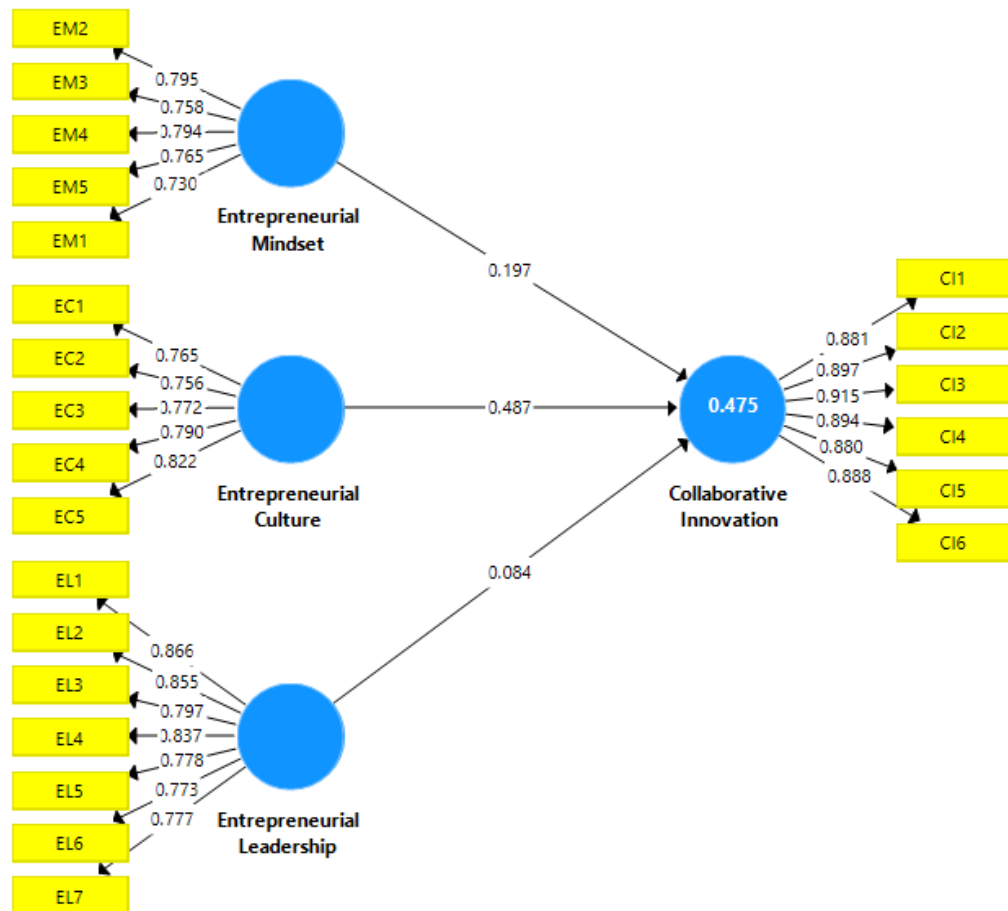


Fig 2. Results From the Structural Model PLS Algorithm

5. Discussion

Results of the hypothesis test of the effect of *entrepreneurial* mindset on collaborative innovation are consistent with Fereidooni, (2014) that strategic thinking, often accompanied by companies that compete to become competitive by investing resources in obtaining opportunities, and *entrepreneurial* mindset with innovation and creativity to achieve these opportunities. *Entrepreneurial* mindset is a mindset and process of behavior that is unique to the company to achieve competitive advantage in the company. This is inseparable from the role of the perspective knowledge base view in the company (Prieto, 2012).

However, the *entrepreneurial* role in the company will certainly be realized if action from the company related to the acquisition of information networks related to opportunity exploration exists (Butler et al., 2003). Regarding the company's mindset to develop with innovation, it cannot be directly converted. Companies need information related to the industry they enter and the various resources that exist in the company, wherein companies can be more mature in making corporate strategic plans related to collaboration with partners who can work together to develop and improve their performance (Rudd et al., 2008).

These findings were confirmed by the board of directors that the *entrepreneurial* idea could not be realized due to risk mitigation, the measure of an innovation is an investment that is needed, requires good planning, and must be in advance prepared, as well as included in the company work plan and budget or generally called budget planning.

Results of the hypothesis test of the effect of *entrepreneurial* culture on collaborative innovation that *entrepreneurial* culture refers to an organizational culture that is committed and shares the

importance of opportunity-seeking and profit-seeking behavior. *Entrepreneurial* culture contains new ideas and creativity, risk-taking, learning, innovation, and sustainable change are seen as conversions of opportunities (Ireland et al., 2003). Thus, an *entrepreneurial* culture encourages and supports the ongoing search for exploitable *entrepreneurial* opportunities with sustainable competitive advantages (McGrath & MacMillan, 2000). Collaborative innovation in strategic *entrepreneurship* is one of the company's steps to compete in the market by utilizing or maximizing resources in the corporate environment that can make an opportunity to compete (Jixiang & Yuezhou, 2019).

These findings were confirmed by the head of the Human Resources department, head of the Corporate Secretary & Legal department, head of the Public Relations section, head of the Research & Product Development department that is in accordance with the company's core value; namely, collaboration that involves internal and external elements of the company to build innovative collaborations. This collaboration involves 1) employees, 2) surrounding community, 3) independent professionals, 4) community residents. Examples of employee involvement through the hampers selling rewarding program and other examples involve community members/community empowerment in commercial and social activities.

The results of the hypothesis test of the effect of *entrepreneurial* leadership on collaborative innovation show that *entrepreneurial leadership* in companies encourages innovation and takes advantage of opportunities to improve organizational performance, solve problems with creative methods, and utilize organizational resources effectively and efficiently (Rae, 2017). Simatupang & Chandra (2021) determined that the closeness factor of a leader to employees will affect employee commitment. However, this will have a negative impact on the company when the employee becomes a mainstay. Because the leader only focuses on developing these employees, wherein the competence in the company is not evenly distributed.

These findings were confirmed by several employee representatives at the levels of staff, section heads and department heads. This situation occurs because in the internal company the leader has a tendency to take advantage of only certain employees. This is caused by historical interaction on the work results of certain employees who always provide satisfaction with the tasks given (both in terms of quality of work, timeliness and proactive attitude shown). There is a condition of employees' skills that are not evenly distributed. Leaders have more tendencies choose employees who are more ready to utilize to accelerate the completion of assigned tasks. The existence of an emotional connection; namely, the comfort of interacting and communicating between leaders and certain employees so that this creates emotional bonding. Consequently those earlier mentioned factors that make collaboration innovation not optimal.

The results in this study support previous research conducted by Chesbrough, (2003), Najafi-Tavani et al. (2018), Y. Li et al. (2019), X. Li et al. (2020), Korber et al. (2022), Mata et al. (2023), and Wan et al. (2023) where collaborative innovation is defined as the interaction of companies with various cooperation partners to accelerate internal innovation, which can include process innovation, management innovation, product or service innovation, and so on where the locus of research at PT Food Station Tjipinang Jaya shows a successful implementation of Entrepreneurial Culture that has a significant positive impact on Collaborative Innovation in supporting the achievement of the company's Innovation Performance in the midst of disruptive conditions after the COVID-19 pandemic.

The results also support previous studies conducted by Utoyo et al. (2020) claiming that Strategic Entrepreneurship can improve innovation performance in a disruptive environment. Using collaborative innovation, Tsai & Lei (2016) found that small and large businesses can successfully engage in strategic entrepreneurship, where there is an influence of *entrepreneurial culture on collaborative innovation, the higher the entrepreneurial culture in the company will increase collaborative innovation.*

6. Conclusion

For an agriculture-based regional enterprise to be able to survive and grow as a corporation in the

conditions of the COVID-19 pandemic with limited resources and financial capabilities is certainly a challenge for top management. This is what has inspired the researcher to study and to understand what strategic steps are being taken in relation to exploiting empowering entrepreneurial opportunities or adopting entrepreneurship, which will later become a reference for other regional enterprises implementing in their environment. With *entrepreneurial* culture and *entrepreneurial* mindset, companies are able to manage limited resources by conducting strategic innovative collaborations. The *entrepreneurial* leadership factor was found to have no significant impact on innovation collaboration due to certain factors and conditions that exist in the company, in which this will become further interesting opportunities to explore in future research.

To strengthen the results of this study, conducting research in different places and expanded populations with the same industrial field is necessary. To strengthen and affirm the relationship between variables to become an established theoretical concept, it is recommended for future research to use different theoretical options with the same research locus.

Top management needs to develop skills and expertise in all employees to reduce dependence, increase *bonding chemistry* between employees, *confidence level* individually to create more *change* or *transformation agents*. To optimize collaborative innovation, implementing *equal opportunity and treatment* in conducting resource orchestration internally and externally in the company is necessary. Optimization of resource orchestration can be done internally through brainstorming, Focus Group Discussion (FGD) followed by *task force business improvement team*.

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Appendix A: Scale Development

Construct	Indicators	Item
<i>Entrepreneurial Mindset</i>	EM1	Recognize <i>entrepreneurial</i> opportunities
	EM2	Be recognized in the industry the company is in
	EM3	Allocating its resources as an investment
	EM4	Design the necessary policies
	EM5	Define lists of scenarios
<i>Entrepreneurial Culture</i>	EC1	Be open to changing environments
	EC2	Responsive to change and adaptable
	EC3	Develop new ideas on products
	EC4	Support employees
	EC5	Appreciate employees working innovatively
<i>Entrepreneurial Leadership</i>	EL1	Breakthrough ideas
	EL2	Identify new opportunities
	EL3	Take risks
	EL4	Give creative thoughts
	EL5	Communicate the vision
	EL6	Encourage team members to work innovatively
	EL7	Challenge his team to criticize business processes
<i>Collaborative Innovation</i>	CI1	Mastering new technologies
	CI2	Build up capabilities
	CI3	Improve existing products
	CI4	Increase the quantity of knowledge
	CI5	Increase the quality of knowledge
	CI6	Improve the product development processes