

# Encouraging Innovation Capability through Entrepreneurship Orientation: The Role of Absorptive Capacity and Improvisation as Mediation

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**Abstract.** Uncertainty arises as a result of changing environmental conditions, and the company must be able to adapt to these changes by encouraging innovation. Innovation capability is required in order to encourage innovation, because innovation capability is a company's ability to innovate. Several previous studies examined the role of entrepreneurial orientation, absorptive capacity, and improvisation on innovation capability; however, in previous studies, entrepreneurial orientation was tested at the organizational level with the dimensions of risk taking, proactiveness, and innovativeness, whereas in this study, we attempted to examine entrepreneurial orientation at the individual level by adding passion and perseverance as a dimension. The context of this research is also carried out in one of the companies, which is a State-Owned Enterprise (SOEs), where several studies have views on the low innovation capability of SOEs. In this study, we attempt to investigate empirically the effect of individual entrepreneurial orientation on innovation capability in the business unit at PT Kawasan Berikat Nusantara (Persero), a state-owned enterprise engaged in industrial estate services. The study's findings show that an individual entrepreneurial orientation, as mediated by absorptive and improvisational abilities, can influence innovation capability. This research is expected to benefit the company by maximizing its absorptive capacity and improvisation ability, as well as paying attention to the entrepreneurial orientation of the individual in the company.

**Keyword:** Individual entrepreneurial orientation; Absorptive capacity; Improvisation; Innovation capability; SOEs

## 1. Introduction

Organizations today are frequently confronted with formidable challenges. Demographic changes, financial reforms, market changes, technology, and consumer behaviour all have an impact on efficiency, productivity, and industrial structure. Coupled with the existence of a dynamic business environment that can create uncertainty in the organization, companies are required to pay attention to innovation (Wang et al., 2019).

Innovation is frequently associated with the use of high-quality technology and resources, as well as relying on disparate knowledge. Several studies have found that innovation in the service sector differs from innovation in the manufacturing sector (Drejer, 2004). Typically, innovation in the service sector is more concerned with providing new products or services to other individuals or businesses, as well as reconfiguring and improving existing services (Miles, 2008). If a company has ability to innovate, it can innovate (Rahapathirana & Hui, 2018)

According to Wang et al (2019), innovation capability can encourage innovation in companies. Innovation capability also shows that it will help companies cope with very complex environmental changes in the company. Meanwhile, Lawson and Samson (2001) define innovation capability as the ability to transform knowledge and ideas on an ongoing basis in order to generate corporate profits.

According to Zhang and Merchant (2020), innovation capability is the ability to create better or more effective products, processes, and services. Many researchers have studied innovation capabilities, but they

typically do so in the context of SMEs (Zhang & Merchant, 2020; Saunila, 2020). (Wang et al., 2019; Yusheng & Ibrahim, 2020). So, in this study, we will look at innovation capabilities in various contexts, specifically at PT Kawasan Berikat Nusantara (Persero), a state-owned enterprise.

According to Chang et al (2019), SOEs frequently face the problem of innovation capability. There are studies that show that there is a lack of innovation in SOEs because managers tend to prioritize their personal interests over the interests of the organization (Tan, 2001; Zhang & Li, 2010 in Chang et al, 2019). Furthermore, many assumptions hold that SOEs' innovation capability is lower than that of private companies because SOEs do not dare to take risks in competing (Belloc, 2014). Belloc's (2014) research also explains several issues that arise in relation to BUMN's innovation activities, one of which is the role of human resources in encouraging innovation.

In 2020, PT KBN (Persero) had to revise its 2020 RKAP due to the Covid-19 pandemic, which resulted in a 38.0% decrease in revenue and an 87.2% decrease in profit (Report Annual PT KBN (Persero), 2020). Furthermore, property tenants' interest in PT KBN (Persero) has decreased, forcing PT KBN (Persero) to strive to create innovations in both products and services. Based on this, the company will continue to innovate in order to improve the company's performance.

Several researchers see the role of entrepreneurial orientation in solving problems related to innovation capability (Mantok et al 2019; Chang et al., 2019; Ferreira & Coelho, 2020; Makhoulfi et al 2021). Entrepreneurial orientation is a corporate construct used to proactively capture and exploit existing opportunities (Makhoulfi et al., 2021). However, the research conducted by Covin et al (2020) provides a view of entrepreneurial orientation at a different level, namely the individual level.

Covin et al. (2020) demonstrated in his study that entrepreneurial orientation at the individual level influences company performance, whereas other studies show that entrepreneurial orientation at the individual level influences innovation (Gupta et al., 2016; Kraus et al., 2019; Ritala et al., 2016). As a result, the purpose of this study is to examine how human resources, with their entrepreneurial orientation, can foster innovation capabilities in SOEs.

Furthermore, there is a knowledge management process that can configure the organization's resources because innovation in the organization must be based on knowledge, and knowledge in the organization comes from both internal and external sources. Organizations foster innovation capabilities by relying on external knowledge sources, which involve absorptive capacity in the process of absorbing these external knowledge sources. Several empirical studies have found that absorptive capacity can promote innovation capability (Aliasgar et al., 2019; Stelmaszczyk, 2020; Zhang & Merchant., 2020).

Companies that encourage their employees to act proactively in seeking opportunities, on the other hand, will require the role of the organization's absorptive capacity to acquire, assimilate, transform, and exploit knowledge in order to easily identify and capture these opportunities (Kohtamaki, 2020). As a result, this study employs the concept of absorptive capacity as a mediator of entrepreneurial orientation in individuals with innovation abilities.

However, encouraging innovation capability requires more than just absorbing knowledge resources; it also requires improvisation. Companies are expected to be able to face all conditions and changes in the business environment in order to improve their innovation capabilities through improvisation. Because improvisation is considered a dynamic ability to reconfigure existing resources creatively, efficiently, effectively, and spontaneously, it is also important in organizational innovation (Zhang and Merchant, 2020).

## **2. Literature Review & Conceptual Development**

### **2.1 Individual Entrepreneurial Orientation in the Direction of Innovation Capability**

Entrepreneurial orientation is regarded as a necessary organizational resource for enhancing an organization's competitive advantage through innovation (Ireland, Hitt, & Simon, 2003). Proactive individuals are more active in seeking opportunities and responding to market demands and customer needs. Proactive attitudes encourage businesses to be proactive in responding to market demands and customer needs by developing new products, processes, or technologies (Makhoulfi et al., 2021).

Meanwhile, risk taking is thought to be able to encourage a company's ability to produce new products and processes (Cheng et al., 2013), as well as encourage companies to explore the resources required to meet market demands and customer needs (Zhou and Tse, 2005). As a result of the innovative element, innovative individuals

will tend to seek new ideas, learn something new, and adopt innovations in order to encourage innovation outcomes (Verhees, 2004), which strongly explains why the innovative element has a strong relationship with innovation capability (Baker and Sinkula, 2009; Ferreira et al., 2020).

According to the research of Ataullah et al (2020), passion for entrepreneurial orientation has a positive relationship with innovation. Passion can increase individual confidence to achieve success in innovation. Similarly, to perseverance, individuals' persistence will encourage them to constantly learn new things, which will have an impact on the company's innovation capabilities (Arranz et al., 2019). Furthermore, several researchers (Alegre & Chiva, 2013; Otero-Neira et al., 2013) believe that individual entrepreneurial behavior can influence product, process, and management innovation activities.

Furthermore, Rebelo et al. (2021) found that there are cognitive factors that influence the formation of entrepreneurial orientation at the individual level involved in creating innovation. According to him, the entrepreneurial mindset is ingrained at the individual level because many small and medium-sized businesses are led by single owners, which means that decisions and planning are made by individuals. Then, according to the literature, individual behaviour can influence willingness to engage in innovative behaviour, thereby influencing the company's innovation capability (Calantone et al., 2002; Santos et al., 2020).

*H1: Individual Entrepreneurial Orientation has a direct positive impact on Innovation Capability.*

## **2.2 Individual Entrepreneurial Attitude toward Absorptive Capacity**

The ability to recognize the value of new information and then assimilate and apply it is defined as absorptive capacity (Cohen and Levinthal, 1990), whereas entrepreneurial orientation refers to strategic decision-making practices, management philosophy, and corporate behavior (Covin and Slevin, 1991). According to Wales et al (2011), absorptive capacity modifies the relationship between entrepreneurial orientation and firm performance.

According to Lisboa et al (2011), one aspect of entrepreneurial orientation, risk taking, will help businesses control and utilize unknown external sources of knowledge. Furthermore, proactive companies will tend to focus on developing new competencies rather than maintaining the existing status quo, requiring companies to seek and exploit existing knowledge outside the company (Cui et al., 2018), whereas if it is linked at the individual level, someone who is proactive can help companies anticipate current and future market needs, encouraging information seeking outside the company (Cui et al., 2018). (Sancho-Zamora et al., 2021).

According to Ye et al (2021), someone with a passion for innovation will have a positive impact on the company's absorptive capacity, where someone with passion will tend to increase their dedication and commitment to achieving business excellence, they will also tend to show their persistence towards the pursuit of goals, including obtaining all sources of knowledge that can support them to achieve excellence.

Hughes et al (2018) discovered that absorptive capacity can mediate the relationship between entrepreneurial orientation and company performance, whereas Aljanabi (2017) empirically tested the relationship between entrepreneurial orientation and technological innovation capability mediated by absorptive capacity, finding that entrepreneurial orientation will affect utilization knowledge that is absorbed to determine attitudes, anticipate threats, and obtain opportunities. Along with an increase in entrepreneurial orientation, there will be an increase in the desire to acquire relevant knowledge (Al Hakimi et al., 2021).

*H2: The impact of Entrepreneurial Orientation on Absorptive Capacity.*

## **2.3 Individual Entrepreneurial Orientation to Improvisation**

Tajeddini and Trueman (2016) empirical study in the context of SOEs in Iran explains that the innovativeness in entrepreneurial orientation activities can help companies survive in the face of competition and dynamic business environment conditions, demonstrating that the more innovative individuals in the organization are, the more innovative they are. Companies can easily anticipate and manage changing environmental conditions. Furthermore, entrepreneurial orientation will encourage organizations to compete more aggressively and riskily, necessitating the ability of organizations to deal with complex, rapidly changing, and unpredictable situations more frequently (Real et al., 2014).

Hughes et al (2018) concludes that improvisation is a learning mode in which improvisation can mediate entrepreneurial orientation to achieve company performance, even though the research findings show that there is no significant relationship between improvisation as a mediator between entrepreneurial orientation and

company performance, but improvisation acts as a moderator between entrepreneurial orientation and company performance in Malaysian SMEs.

*H3: The impact Individual Entrepreneurship Orientation on Improvisation.*

## **2.4 Absorptive Capability to Innovation Capability**

Several previous studies have found that absorptive capacity is a type of learning that can promote innovation (Cohen and Levinthal, 1990; Tsai, 2001; Aljanabi, 2017). Meanwhile, Lewin et al (2011) indicates that absorptive capacity which was previously seen as a factor that mediates or moderates innovation, recently evolved as a variable that has a direct effect on innovation.

This is also supported by research by Al Hakimi et al. (2020), which explains that absorptive capacity has a positive and significant influence on innovation, in line with previous research by Zahra and George (2002), where the results of research by Al Hakimi et al. (2020) imply that firms with high absorptive capacity have a better chance of successfully leveraging new knowledge to adopt or introduce more innovations.

Furthermore, Stelmaszczyk's (2020) research explains how the role of absorptive capacity in activating innovation capabilities is that organizations that increase their ability to acquire and increase external knowledge will make it easier for companies to innovate. Furthermore, the empirical study conducted by Makhouloufi et al (2021) in the context of companies in Algeria explains that absorptive capacity is highly dependent on innovation activity, where this can bridge external resources with internal resources, so the research results support that absorptive capacity is a dynamic capability and essential to support the company's innovation capabilities.

*H4: Absorptive Capacity influences Innovation Capability positively.*

## **2.5 Innovation Capability Improvement**

Given its dynamic movement, the business environment is one of the most widely discussed topics. Crossan et al (1996) conducted a study on improvisation, claiming that it is a managerial technique required to deal with environmental conditions that are difficult to predict due to their movement. According to Crossan et al. (2005), improvisation is also a time-related incident. According to empirical research conducted by Bingham (2009), companies that implement entrepreneurship have improvisational abilities that can promote growth in company performance.

Meanwhile, Vera and Crossan (2005) discovered that improvisation has a positive effect on innovation because it is a learning mode that can improve organizational members' ability to innovate. According to Pavlou and El Sawy (2010), improvisation skills are required to achieve technological innovation in turbulent business environments. Smith and Blundel (2014) conducted an exploratory study that revealed that improvisation is also essential for innovation.

According to Zbierowska and Zbirowski's (2021) research, improvisation is a demand from an innovative process with an entrepreneurial orientation. According to Zenk et al. (2022), the ability to improvise is a response to uncertainty, adaptation to change, creation of new ideas, and experimentation with new ideas that promote the organization's ability to innovate.

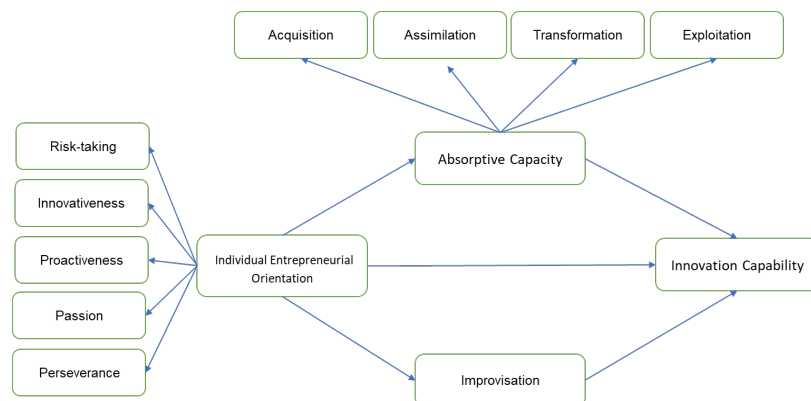
*H5: Improvisation influences Innovation Capability positively.*

## **3. Research Method**

This study was conducted at one of the state-owned enterprises (SOEs), namely PT KBN (Persero), because PT KBN (Persero) is one of the SOEs that is struggling to survive in the face of dynamic environmental conditions and changes in market orientation that have reduced interest in warehousing property rentals, land, factories, and so on. The quantitative research method used in this study was questionnaire distribution to the target respondents.

The research sample is determined by the number of representative samples for the method used in this study, namely SEM PLS. According to Hair et al. (2014), the number of representative samples for the PLS SEM method is 30 to 100 or more. This is because research using the SEM PLS method has a basis on variance, thus the number of samples used does not need to be large. The SEM PLS statistical method is used in this study in testing each hypothesis to obtain the results of the analysis of the relationship variables based on the model used in this research.

**Figure 1**  
*Research Model*



Regarding the research population, we will observe the managerial level of the company, because the company's decision making is made in this level, while the unit of analysis is the business unit at PT KBN (Persero) such as Senior Chief Specialist, Junior Chief Specialist, Senior Specialist, Junior Specialist, Senior Staff Analyst, and Junior Staff Analyst. PT KBN (Persero) has 13 divisions and 9 business units (including subsidiaries). As a result, this study was carried out on the 22 work units.

Meanwhile, the measuring instrument used in this study was obtained from the indicators of the variables based on previous research. The individual entrepreneurial orientation variable uses the indicators that used by Santos et al (2020), the absorptive capacity variable adopts the indicators of the research by Flatten et al (2011), then the improvisation variable adopts the indicators which compiled in the Vera and Crossan (2005) and the innovation capability variable adopted the research indicators of Akman and Yilmaz (2008). Each question item uses a Likert scale of 1-6, while the use of a Likert scale of 1-6 is because the authors chose not to use a neutral point as an effort to avoid social desirability bias that might affect the results (Leung, 2011). A scale with a value of 1 represents “Strongly Disagree” and a value of 6 represents the expression “Strongly Agree”.

## 4. Result and Discussion

The survey was distributed to 122 respondents, but only 102 empirical data were collected (response rate 83%). After an examination of answers, it was concluded that the entire incoming respondents were considered to meet the criteria as respondents.

**Table 1**  
*Profile of Research Samples*

| Variable              | Amount | Percentage |
|-----------------------|--------|------------|
| <b>Department</b>     |        |            |
| Division              | 52     | 51,49%     |
| Unit                  | 49     | 48,51%     |
| <b>Job Level</b>      |        |            |
| Vice President        | 8      | 7,9%       |
| Deputy                | 28     | 27,72%     |
| Assistant Deputy      | 65     | 64,36%     |
| <b>Length of work</b> |        |            |
| >15 Years             | 28     | 27,72%     |

|                         |    |        |
|-------------------------|----|--------|
| 11 Years until 15 Years | 30 | 29,70% |
| 6 Years until 10 Years  | 39 | 38,61% |
| 1 Year until 5 Years    | 4  | 3,96%  |

Based on the results of the research data processed, all the indicators that used are valid and ideal because they have met the qualification of outer model analysis criteria, all indicators have the loading factor  $\geq 0.5$ , the average variance extract (AVE) value  $> 0.5$ , the cross loading of each indicator the highest value, Cronbach's Alpha (CA)  $> 0.6$ , and the value of composite reliability (CR) on each indicator  $> 0.7$ . Furthermore, we testing the inner model to determine the relationship between research variables, and the test results obtained T-statistic values and P Value to determine the relationship and significance between variables from the research model.

**Table 2**  
*Coefficient Pathway*

| Hipotesis                                      | T-statistik | P Value | Significance    | Conclusion |
|------------------------------------------------|-------------|---------|-----------------|------------|
| IEO $\rightarrow$ INOCAP                       | 1,306       | 0,192   | Not significant | Rejected   |
| IEO $\rightarrow$ ACAP                         | 5,669       | 0,000   | Significant     | Accepted   |
| IEO $\rightarrow$ IMP                          | 5,177       | 0,000   | Significant     | Accepted   |
| ACAP $\rightarrow$ INOCAP                      | 3,578       | 0,000   | Significant     | Accepted   |
| IEO $\rightarrow$ ACAP $\rightarrow$<br>INOCAP | 2,718       | 0,007   | Significant     | Accepted   |
| IMP $\rightarrow$ INOCAP                       | 6,903       | 0,000   | Significant     | Accepted   |
| IEO $\rightarrow$ IMP $\rightarrow$ INOCAP     | 4,257       | 0,000   | Significant     | Accepted   |

Based on the test results, H1 has a t-statistic value of 1.306 for individual entrepreneurial orientation towards innovation capability and a p value of 0.192. This demonstrates that individual entrepreneurial orientation variable has no significant effect on innovation capability, so this study is rejected for H1. The findings of this study do not support the findings of Makhloufi et al (2021), who conducted research on 194 managerial and entrepreneurial zones in the Algerian industrial zone and discovered that entrepreneurial orientation has a significant positive effect on innovation capability. However, Ritala et al. (2021) discovered that one of the dimensions of entrepreneurial orientation, namely innovativeness, has no relationship with innovation capability, whereas two other dimensions, such as risk taking and proactiveness has relationship with innovation capability. There is positive relationship between individual entrepreneurial orientation and absorptive capacity (H2 t value 5,669 and p value is 0,000). The result of H2 demonstrates that individual entrepreneurial orientation variable has no significant effect on absorptive capacity, thus the second hypothesis is accepted. According to Aljanabi (2017), entrepreneurial orientation at the individual level has a positive impact on absorptive capacity because entrepreneurial orientation can contribute to the creation of the ability to learn and absorb knowledge. While H3 shows the t-statistic value of individual entrepreneurial orientation towards improvisation of 5.177 with p value of 0.000. The t-statistic value states that individual entrepreneurial orientation towards improvisation has a significant positive effect, thus the third hypothesis of this study is accepted. The result also supports the research of Peschl et al (2021) which explains that entrepreneurial orientation will create entrepreneurial thinking that can encourage problem solving abilities. Furthermore, for H4 shows the t-statistic value of absorptive capacity to innovation capability of 3.578 with a p value of 0.000. The t-statistic value states that the absorptive capacity of innovation capability has a significant positive effect, so the fourth hypothesis of this study is accepted. The findings of this study can support research conducted by Stelmaszczyk (2020), which sees a relationship between absorptive capacity and innovation capability, as well as research conducted by Tavani et al (2018), which shows that absorptive capacity positively affects innovation capability. The last hypothesis shows the t-statistic value of improvisation on innovation capability of 6.903 with p value of 0.000. The t-statistic value states that improvisation on innovation capability has a significant positive effect, thus the fifth hypothesis from this study is accepted, this is in line with Liu et al (2018) research which conduct on the manufacturing industry in China, and the results of the research shows that improvisation ability is enable contribute to innovation capabilities.

Furthermore, the findings of this study show how absorptive and improvisational capacity play a role in mediating IEO on innovation capability. Based on the t-statistic value of IEO  $\rightarrow$  ACAP  $\rightarrow$  INOCAP, which is

2.718 with p value of 0.007, the results show that absorptive capacity can mediate between individual entrepreneurial orientation and innovation capability. This implies that there is a desire at the managerial level to find better business opportunities, which encourages the exploration of new things such as trying new activities to anticipate market needs and changes. This can have an impact on organizational learning, particularly the ability to absorb knowledge and information resources related to the industry. And then absorbs knowledge resources, which are then assimilated, integrated, and utilized to encourage innovation capabilities so that the company can generate new ideas to assist product development or innovation.

The second path is the influence of individual entrepreneurial orientation through improvisational mediation. The results of research show that improvisation is able to mediate between individual entrepreneurial orientation and innovation capability, it proven by t-statistic value of  $IEO \rightarrow IMP \rightarrow INOCAP$  (4.257) with p value 0.000. In terms of encouraging innovation capability at PT KBN (Persero), individual entrepreneurial orientation at the managerial level is able to emphasize entrepreneurial principles to develop the company's business.

## **5. Conclusion and Implication**

Previous research has found that State-Owned Enterprises (SOEs) has a negative impact on innovation capability (Zhou et al., 2017; Chang et al., 2019) As a result, in this study, we attempt to investigate empirically the role of variables that would encouraging innovation capability, such as individual entrepreneurial orientation, absorptive capacity, and improvisation. Because agents of entrepreneurial orientation are individuals, this study focuses on the variables of entrepreneurial orientation at the individual level. However, the findings of this study do not provide empirical evidence that individual entrepreneurial orientation can have a direct impact on organizational capability. On the other hand, Individual entrepreneurial orientation has an impact on the company absorption capacity and improvisational ability. This is because the concept of individual entrepreneurial orientation will involve cognitive resources that can influence learning modes (Hughes et al., 2018). Individual entrepreneurial orientation and innovation capability can be mediated by absorptive capacity and improvisation. Individual entrepreneurial orientation also can motivate someone to absorb the sources of knowledge required to carry out product development. Furthermore, individual entrepreneurial orientation can help management improve by producing intangible assets that can be used to take management steps when confronted with a problem or uncertainty. This study can shed light on efforts to foster innovation capabilities in SOEs. To be able to improve its innovation capability, companies must pay attention to entrepreneurial orientation holistically, namely at the individual level, because individual characteristics have implications for the company's business management practices, then the capacity to absorb knowledge, and finally the ability to improvise.

### **Managerial Implication**

The company should focus on aspects that shape the entrepreneurial orientation of individuals at the managerial level because this can affect various decision processes, take advantage of opportunities, absorb knowledge, and improvise. In addition, companies also need to facilitate communication between employees and even units to share information, ideas, and concepts they have, so that these steps can be expanded to be applicable for the development of new things. To encourage improvisation capabilities in the company, the managers in each business unit need to be trained to be able to anticipate or respond to the condition by increasing knowledge sharing between employees and units in the company.

### **Limitation and Suggestion**

This study still has limitations which are expected to pave the way for future research. Limitation of this research because this research has focus on the context of SOEs and can only be generalized to work units within the company and may not necessarily be applied to business units in different types of companies. This research also used indicators of individual entrepreneurial orientation which have only been tested at the managerial level and only examines factors that can affect the innovation process and has not yet measured the impact of the innovation process on performance. Future studies are expected to investigate indicators of individual entrepreneurial orientation applied at the employee level in each business unit and see their effect on the organizational level, and can test whether the factors of the innovation process in this study can affect innovation or performance in the work unit.

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