Co-creation of Entrepreneurial Capability and Firm Performance in the Textile Industry in Indonesia: The Mediating Role of Innovation Capability

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The purpose of this study is to empirically examine and analyse the Co-creation, Entrepreneurial Capability in improving the Firm’s Performance with the Innovation Capability as a mediating variable. This research was conducted in the textile industry in Banten, West Java, and DKI Jakarta, Indonesia. This research uses a quantitative approach with a purposive sampling technique. The questionnaire was distributed to 266 respondents. Hypothesis testing is done using AMOS 23.00 program structural equation modelling (SEM). The research findings show that the there is a positive effect of Entrepreneurial Capability on Firm Performance through the Innovation Capability, but for joint Co-creation on Innovation Capability the results show that there is no effect. While the Entrepreneurial Capability variable has the most dominant influence on a Firm’s Performance as a new thing in this study. The originality value of this study found a new model that is the Innovation Capability model that can support Firms to implement Innovation Capability for the textile industry in realising corporate goals amid global corporate competition.

\textbf{Key words:} Co-creation, Entrepreneurial Capability, Innovation Capability, Firms Performance.
Research Background

This research investigates the mediating of Innovation Capability on a Firm’s Performance by measuring the relationship between Co-creation and Entrepreneurial Capability. Currently, research in the field of Strategic Management, especially the Firm’s Performance, dominated world research during the period from 1980 to 2005 (Furrer & Thomas, 2001). Research on a Firm’s Performance has continued to develop during the 2009 - 2011 period (Uygun & Schmidt, 2011). Therefore, a Firm’s Performance is still very relevant and interesting to study (Lechner & Gudmundsson, 2012; Arshad, Rasli, Arshad, & Zain, 2014; Stam, et.al, 2014; Lindblom, 2015).

Today's textile industry requires Innovation Capability as a strategic and important thing for the Firm’s Performance (Thomas Wheelen, David Hunger, Alan, 2015). Likewise, user involvement in the Product Development process can improve a Firm’s Performance by reducing risk and reducing the cost of developing new products (Hoyer, Chandy, Dorotic, Krafft, & Singh, 2010; Ramaswamy & Gouillart, 2015); therefore, products made in the presence of the user along with the Firm’s involvement will increase the value of the Firm’s shares (Gupta, Mela, & Vidal-Sanz, 2009). According to Morgan (2012) Co-creation is very helpful in understanding the relationship between a Firm’s Performance and marketing. According to Roudini et al., (2012) the role of Entrepreneur Capability has an impact on Performance because the Firm’s Performance in the textile industry will be born through an Entrepreneurial process. Thus, Entrepreneurship Capability can improve the Firm’s Performance.

At this time when the global economic phenomenon is fluctuating, the development of textile companies has decreased. This is caused by Donald Trump's government policy to protect the steel and aluminium industries (API industry, 2018). This situation causes the global economy to slow down including a very significant decline experienced by the Textile Industry whose production in the IBS group fell 6.87%. This decline is a continuation of a decrease of 7.91% (YoY) in the fourth quarter of 2016, while in the first quarter of 2016 the industry experienced an increase in production of 2.41% (YoY). Due to the decline in exports in April 2019, the apparel commodity (Convection) from textiles in that period only became the third-largest contributor to export value after palm oil and Iron / Steel, that is, with an export value of USD 517.62 million. In line with the decline in the value of exports, in the first quarter of 2019, the volume of apparel exports (Convection) from textiles was recorded to have decreased by 15.01% of the export volume in March 2019 and decreased by 10.25% of the export volume in April 2018 (Perindustri, 2019).
The textile industry in Indonesia is one of the superior products. Therefore, it is very important to analyse the trends in the global market for this industry. This research will make a unique contribution focusing on the role of Co-creation and Entrepreneurial Capability on Firm Performance by mediating the of Innovation Capability in the context of the Indonesian textile industry that can compete in the global market. This study proposes developing a model of Innovation Capability which in turn can improve the Firm’s Performance within the textile industry firms in the provinces of Banten, West Java and DKI Jakarta in Indonesia.

Theory and Hypothesis Development

a. Entrepreneurial Capability

Wilson & Martin, (2015) defines Entrepreneurial Capability as an effort to achieve and develop the goals of Entrepreneurial opportunities in the corporate environment. There are four dimensions to measure Entrepreneurship Capability, namely: 1). Humans, 2). Resources (non-human), 3). Time and 4). Opportunities (Richad Makadok, 1999; Wielemaker &
Gedajlovic, 2011). Jia-Sheng & Chia-Jung, (2010) state that there are three dimensions of Entrepreneurship, namely Innovation, Initiative, and Risk-taking. Miller (2011) states that Entrepreneurship requires three characteristics, namely: 1) Innovation (including product and process innovation), 2) Risk-taking (which is the need to have the Capability to take risk) and 3) proactiveness (which is the Capability to actively analyse the environment and adapt to respond by determining the appropriate Innovation Capability). Miller's three characteristics are consistent with the opinion of Covin & Slevin, (1989), namely Innovativeness, Risk-taking, and Proactiveness as aspects to measure Entrepreneurship. Based on the evidence from the researchers' analysis, the first hypothesis can be put forward as follows:

**H1:** The Entrepreneurial Capability has a strong relationship to enhance Innovation Capability

Roudini et al. (2012) explains the role of Entrepreneurial Capability that has an impact on Firm Performance. The Firm’s Performance is born through Entrepreneurship, and a Firm’s Capability. Therefore, the Entrepreneurial Capability has a strong relationship with the Firm’s Performance. According to Zhang et al., (2009) Entrepreneurial Capability is carried out by companies to utilise the Firm’s resources, discover, and take advantage of opportunities in international markets to achieve a good Firm’s Performance. Likewise, research by Cao, Kang, & Lim, (2017) explain the existence of a strong relationship between Entrepreneurial Capability and a Firm’s Performance. Entrepreneurial Capability and Firm Performance show a linear relationship that has an impact on improving the Firm’s Performance (Cao et al., 2017).

**H2:** The Entrepreneurial Capability has a strong relationship to improve Firm Performance

**b. Co-creation**

Co-creation is defined as collaborative work between consumers and companies in an Innovation process, in which consumers and companies engage in the activities of Co-ideation, Co-design, Co-development, and Co-creation of new products or services (Prahalad, CK, & Ramaswamy, 2004; Russo-Spena & Mele, 2012). According to Prahalad & Ramaswamy (2004), the Co-creation variable has 4 dimensions, namely: Dialogue, Access, Risk, and Transparency. Gharneh (2017), explained that the results of the study showed that the implementation of Co-creation partially mediates or can affect the Capability of process Innovation. The evidence of this study is strengthened by the results of research from Janteng & Tan (2017), which explained that there is limited evidence for sharing knowledge as a moderator to strengthen the relationship between shared value creation and Innovation Capability. Based on the evidence from the analysis, the third hypothesis can be explained as follows:
**H3:** Co-creation has a strong relationship with the Innovation Capability

Tijmes, (2010) describes Co-creation explaining the relationship between Co-creation and a Firm’s Performance. Companies involved in implementing Co-creation have obtained results through improvements so that growth and profit Capability occur in companies that produce a good Firm’s Performance (CK Prahalad, Krishnan, 2008; Chathoth, Altinay, James, Okumus, & Chan, 2013; Nicolajsen & Scupola, 2011; Prahalad & Ramaswamy, 2004; Roser, DeFillippi, & Samson, 2013). Based on the results of empirical research and the previous argument we have the following hypothesis:

**H4:** Co-creation has a strong relationship with the Firm's Performance improvement

c. *Relationship between Innovation Capability and Firm Performance*

Whellen et al (2015) explain a Firm’s Performance is a Firm’s condition that shows the level of achievement of a Firm's operational results as a measurable Innovation Capability. Measuring the Firm’s Performance is an important part of evaluating and controlling a Firm’s Performance and is always measured in terms of the difference between revenue production and expenditure of resources. The Performance dimensions of the firms include market share growth, asset growth, net income growth, net income growth, number of employee growth (Santos & Brito, 2012).

Lawless & Anderson, (1996) explain that Innovation Capability has a positive effect on a Firm’s Performance, according to the results of research Siyamtinah, and Heru Sulistyo, (2011). The better the management of the firm's external factors, the more the Innovation Capability will increase, and increasing Innovation Capability will affect a Firm’s Performance. This is strengthened by research from Dadfar et al, (2013), who explain their efforts to determine the influence of Innovation Capability on the development of product platforms and organisational Performance. In research on pharmaceutical SMEs in Iran, case studies show a positive relationship between Innovation Capability, technology platforms, product platforms, and Performance. This is also strengthened by research from Fatemeh Hamidi (2017), who found a significantly influential role between Innovation Capability and Firm Performance. Based on the evidence from the researchers' analysis, the fifth hypothesis can be explained as follows,

**H5:** Innovation Capability has a strong relationship with the Firm's Performance

Based on the explanation above, the conceptual framework can be explained in this study, as seen in Figure 2 below.
Research Methodology

a. Research Approach

This study was tested on the scope of companies in the textile industry sub-sector, which has implemented the Innovation Capability modelling process in the provinces of Banten, DKI Jakarta and West Java, Indonesia. The method used in this study uses a quantitative approach with a purposive sampling technique and 266 questionnaires were distributed to the textile industry as respondents.

b. Measurements

This study has four variables. First, Entrepreneur Capability. The indicators adopted: (Zhao-hui, 2010), namely Innovation, proactivity, and risk-taking. The Entrepreneur Capability is divided into categories: 1). International marketing Capability, 2). International learning Capability, 3). Network Capability, 4). The Capability to take risks. The second variable is a Co-creation that indicates conditions of environmental change that cannot be predicted. Taking opinions (Alexander, 2012; Prahalad & Ramaswamy, 2004) four Co-creation indicators such as 1). Dialogue, 2). Access, 3). Risk, 4). Transparency. The third variable Innovation Capability was adopted from (Aryanto et al., 2015), who state that the Innovation Capability construct has dimensions consisting of 1). Innovation Capability, 2). Process Innovation, 3). Marketing Innovation, 4). Business Model Innovation, and 5). Innovation Management. The fourth variable is Firm Performance with indicators, namely 1). Market
share growth, 2). Asset growth, 3). Net income growth, 4). Several employee growths (Santos 
& Brito, 2012). All variables are measured by indicators using a Likert scale with 1 for very 
low to 5 for very high.

c. Sample and Data Collection

A survey was conducted by distributing questionnaires to the 266 textile industries in Banten 
Province, DKI Jakarta, and West Java, Indonesia, using purposive sampling techniques. 
Criteria as respondents are textile Firms that have implemented Innovation Capability. The 
characteristics of respondents are 1). Characteristics based on business scale: 49 MSMEs 
(18.42%), 97 SMEs (36.47%) and 120 large industries (45.11%); 2). Characteristics of textile 
Firms based on the number of workers: between 1-20 employees: 21 Firms (7.89%); between 
21-99 employees: 45 Firms (16.92%); more than 100 employees: 200 Firms (75.19%). 3). 
based on the type of legal entity: Limited Capability Firms (PT) of 181 (68.30%), 
Commanditaire Vennontschap (CV) of 65 (24.35%), Trading Business (BT) of 19 (7.17%).

d. Construct Validity and Replicability

Analysis of the data for testing this research uses structural equation modelling analysis. With 
the AMOS 23. This approach is carried out by testing the parameters generated from the 
goodness of fit, then testing the research hypotheses about the causality relationships 
developed in this research model. The results of the validity and real Capability test show that 
Enterpreneur Capability builds with the second and fourth indicators, namely International 
Learning Capability having a loading factor at 0.441 and the Capability to take risks having a 
loading factor at 0.510 (containing a factor <0.6), which indicates that the indicator is 
statistically invalid. Likewise, the results for Co-creation with indicators one and four, namely 
dialogue levels have a loading factor value of 0.451 and transparency has a loading factor 
value of 0.512 (containing a factor <0.6), which means that the indicator is statistically invalid. 
Likewise, the results of the validity and real Capability test showed that the Innovation 
Capability constructs with the fourth and fifth indicators, namely Business Model Innovation 
and Marketing Innovation have a loading factor of 0.547 and 0.468 (loading factor <0.6), 
which illustrates that the indicator is statistically not valid.

The results of the Validity and Real Capability tests show that the Innovation Capability 
constructs with the second and third indicators, namely the Net income growth and Several 
employee growths have a loading factor of 0.582 and 0.571 (loading factor <0.6), which 
illustrates that the indicator is statistically invalid. This is done using the maximum likelihood 
estimation technique. The sample used here is 266 samples based on the assumption that the 
number of samples has met the criteria for the adequacy of the recommended sample, the 
maximum likelihood estimation (MLE) technique, and the average error variance of indicator
(AVE) criteria, in which the minimum sample size is 266. The required standardised loading estimated is less than 0.7 and the commonality score equals to 0.5. The assessment of questionnaire items for testing uses confirmatory factor analysis to examine the relationship between constructs and indicators. For real Capability testing, Cronbach alpha (Cronbach’s α) was used. The results of the test can be shown in table 1.

Table 1: Scale items for measures.

<table>
<thead>
<tr>
<th>Scale items names and items (measured on 1–5 point Likert Scale indicating the extent to which respondent agrees with the following statements)</th>
<th>Standardized factor loading</th>
</tr>
</thead>
</table>
| Entrepreneur Capability (Cronbach’s α = 0.900)  
- International Marketing Capability (ec1).  
- International Learning Capability (ec2).  
- Network Capability (ec3).  
- The Capability to take risks (ec4). | 0.894  
0.441  
0.906  
0.510 |
| Co-creation (Cronbach’s α = 0.880)  
- Dialogue (cc1).  
- Access (cc2).  
- Risk (cc3).  
- Transparency (cc4). | 0.451  
0.924  
0.846  
0.512 |
| Innovation Capability (Cronbach’s α = 0.971)  
- Innovation Capability (ic1).  
- Process Innovation (ic2).  
- Innovation Management (ic3).  
- Business Model Innovation (ic4).  
- Marketing Innovation (ic5). | 0.946  
0.915  
0.911  
0.547  
0.468 |
| Firm Performance (Cronbach’s α = 0.914)  
- Market share growth (fp1).  
- Asset growth (fp2).  
- Net income growth (fp3).  
- Several employee growths (fp4). | 0.939  
0.582  
0.571  
0.892 |

Result and Discussion

Hypotheses testing of this research was assisted with the structural equation modelling analysis program of AMOS 23. The analysis in the full model is illustrated in Figure 2. Meanwhile, Table 1 exposes the assumption test results in developing structural equation modelling. Good results are indicated by the full model confirmatory test as it has met the criteria of goodness of fit. The model structure is used to depict the research causality models with a tiered relationship. The testing results indicate that criteria of goodness of fit have been
fulfilled as shown with Chi-Square at 32.164 and probability value at 0.056. The two assumptions are completed. The score of TLI was at 0.945, GFI at 0.973, AGFI at 0.942, and RMSEA was at 0.045 which shows that the scores have met the predetermined cut-off. It implies that the research model is accepted and met the predefined criteria.

Figure 2 shows the standardised path coefficient of the relationship between strategic Entrepreneur Capability, Co-creation, Innovation Capability, and the Firm’s Performance. The findings of this study are also shown in Table 2 which formulates 5 hypotheses.

Table 2: Hypotheses Testing

<table>
<thead>
<tr>
<th>Hypothesis</th>
<th>Standardized path</th>
<th>t-value</th>
<th>Prob.</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>H1</td>
<td>Entrepreneur Capability → Firm’s Performance</td>
<td>0.500</td>
<td>7.103</td>
<td>0.000</td>
</tr>
<tr>
<td>H2</td>
<td>Entrepreneur Capability → Firm’s Performance</td>
<td>0.561</td>
<td>8.378</td>
<td>0.000</td>
</tr>
<tr>
<td>H3</td>
<td>Co-creation → Innovation Capability</td>
<td>0.101</td>
<td>1.404</td>
<td>0.160</td>
</tr>
<tr>
<td>H4</td>
<td>Co-creation → Firm’s Performance</td>
<td>0.141</td>
<td>2.508</td>
<td>0.002</td>
</tr>
<tr>
<td>H5</td>
<td>Innovation Capability → Firm’s Performance</td>
<td>0.267</td>
<td>4.700</td>
<td>0.000</td>
</tr>
</tbody>
</table>

*Note: *Significant at p ≤ 0.05; if (t) ≥ 1.96

The five hypotheses developed here are the relationship between Entrepreneur Capability, Co-creations, Innovation Capability, and Firm’s Performance relationships, regarding the Firm’s Performance. Table 2 illustrates the relationship between strategic Entrepreneur Capability, Co-creation, and Firm’s Performance. T-scores and probability illustrate the positive and significant relationship of each variable.
Figure 2. Structural Equation Modelling Co-creation Of Entrepreneurial Capability and Firm Performance in The Textile Industry in Indonesian: The Mediating Role Of Innovation Capability

We can discuss the hypotheses results as follows:

**H1**: Entrepreneur Capability effect on Innovation Capability. Table 2 shows the structural path model which explains the relationship between Entrepreneur Capability and Innovation Capability. The review of the goodness-of-fit measures indicates that they well exceeded the cut-off values. The structural path findings indicate that there is a significant and positive relationship between Entrepreneur Capability and Innovation Capability ($t = 7.103 > 1.96$) with significance value ($0.000 < 0.05$). Hypothesis 1 is accepted.

**H2**: Entrepreneur Capability gives an effect on the Firm’s Performance. Table 2 shows the model of the structural relationship between Entrepreneur Capability and Firm Performance. The structural path findings indicate that there is a significant relationship between Entrepreneur Capability on Firm’s Performance ($t = 8.378 > 1.96$) with significance value ($0.000 < 0.05$). Therefore, Hypothesis 5 is accepted.

**H3**: Co-creation has an insignificant effect on Innovation Capability. Table 2 shows the model of the structural relationship between Co-creation and Innovation Capability. The structural path findings indicate that there is no significant relationship between Co-creation and Innovation Capability ($t = 1.404 < 1.96$) with significance value ($0.160 > 0.05$). Hypothesis 2 is not supported.
**H4:** Co-creation Effect on the Firm’s Performance. Table 2 depicts the structural relationship model of Co-creation and the Firm’s Performance. The structural path findings indicate that there is a significant relationship between the Co-creation and Firm’s Performance ($t = 2.058 > 1.96$) with significance value ($0.002 < 0.05$). Hence, Hypothesis 3 is accepted.

**H5:** Innovation Capability of a Firm’s Performance. Table 2 indicates the structural relationship model between Innovation Capability and Firm Performance. The structural path findings indicate that there is a significant relationship between the Innovation Capability and Firm’s Performance ($t = 4.700 > 1.96$) with significance value ($0.000 < 0.05$). Thus, Hypothesis 4 is accepted.

**Table 3:** Standardised Indirect Effects

<table>
<thead>
<tr>
<th>Source of Indirect Effect</th>
<th>Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Entrepreneur Capability → Innovation Capability → Firm Performance</td>
<td>0.028</td>
</tr>
<tr>
<td>Co-creation → Innovation Capability → Firm Performance</td>
<td>0.132</td>
</tr>
</tbody>
</table>

Analyse the impact of Innovation Capability as a mediator through Amos 23 with 266 sampling values. Table 3 mediation results in Entrepreneur Capability to mediate relationships Innovation Capability with Firm Performance 0.028. Then, Co-creation the Capability to mediate relationships Innovation Capability with Firm Performance 0.132.

**Discussion**

This study is designed to empirically examine the Entrepreneur Capability and Co-creation to improve a Firm’s Performance with the variable of Innovation Capability as mediation. This finding provides evidence that Entrepreneur Capability influences the Innovation Capability. Jia-Sheng & Chia-Jung, (2010), conclude that Entrepreneurial Capability can influence Innovation Capability and sustained competitive advantage. It does not directly affect sustained competitive advantage but affects it through Innovation Capability. The results empirically show that Entrepreneur Capability has a relationship with the Firm Performance of research companies (Johnson, Lee, & Grohmann, 2003). Based on the results of the analysis, in line with research from Hurriyati, Razati, Sulastri, & Putra (2016), it explains that the strong significant influence of entrepreneurial skills on Firm Performance, as well as his opinions Roudini, et al (2012), explain the role Entrepreneur Capability that has an impact on a Firm’s Performance. Likewise, Gharneh (2017), explains the results of the study suggesting that the implementation of Co-creation partly mediates and can’t influence the Capability of Process Innovation. The results of this study also found the effect of Innovation Capability on Firm Performance from the research by (Liao & Wu, 2010; Shu-Hsien. Liao, Chi-Chuan. Wu, Da-Chian. Hu, 2009). The Innovation variable can be an intermediate variable between Entrepreneur Capability, Co-creation and Firm’s Performance.
Managerial Implications and Future Research

Managerial Implications in this study indicate the need for a serious focus of each firm to run the Innovation Capability that can improve the Firm's Performance. For this reason, indicators of Innovation Capability need to be maintained by textile firms in the provinces of Banten, West Java and DKI Jakarta, Indonesia. Because the achievements of Innovation Capability tend to be very high and the influence is large, including the development of a textile Firm’s Performance Capability, this must be done frequently, especially innovating management to create a new division of Firm’s Performance. Divisions can be supported by the R&D department so that the Firm's Capability will be able to produce a Firm’s Performance that is guaranteed high, as measured by the increasing level of sales.

The Managerial Implications of this study explain that textile firms in Indonesia need to consider how to implement them. Also, companies need a certain level of Innovation Capability. Along with the Innovation Capability, what accelerates the Innovation Capability automatically increases the Performance of the firms through the implementation of the Capability of the firm’s resources, corporate resilience, and the firm's Capability to always be market-oriented. Improving the coordination Capability of firms’ leaders needs to be addressed properly, building capacity through learning, so that employees have the necessary competencies, and responsive Capability, and companies can compete with other companies. Thus the Performance of textile companies can improve the Performance of the firms.

This research study in improving the Firm’s Performance considers the unique factors of Innovation Capability, especially those that meet the needs and challenges of the moment in the global era, if textile companies are to be able to compete to maintain the Firm's excellence through the process of Innovation Capability. Future research is needed to re-examine Co-creation and include other variables, such as knowledge sharing, Dynamic Capability, and others. Also, joint Co-creation can be used as a moderating variable in future research. The Innovation Capability, as one of the new variables rarely studied, can be developed for future research.

Conclusion

The current study provides evidence that the Entrepreneur's Capability and the Capability to innovate improve the Performance of the textile firms in Indonesia. Thus, the use of innovative Capability and Entrepreneurial Capability can improve the Firm's Performance. It is recommended that a textile manufacturing firm in Indonesia must implement Entrepreneurial Capability and maximise Innovation Capability so that textile companies can improve the Firm’s Performance, especially the sales volume of new innovative products. Thus, the textile firms can increase the value of exports in the international market.
The value of originality and novelty in this study found a new model of Entrepreneurial Capability can improve a firm's Capability to always innovate so that Entrepreneurs can improve a Firm's Performance. Therefore, the discovery of this new thing will enable the application of an Innovation Capability model to improve the Performance of textile firms in Indonesia. The role of Co-creation is considered not optimal in increasing the capacity of Innovation Firms, one reason being that the firms do not concentrate on developing a variety of products and develop the firm's power by involving customers, so it is recommended in this study that textile companies need to make innovative products that involve customers. For this reason, Entrepreneur Capability and Innovation Capability are predicted to be able to face competition in the global market to become a superior textile firm.

The results of theoretical analysis and in-depth thinking from empiricists about the Firm’s Performance, especially in the textile industry in Indonesia mean that the development of this research considers the condition of the global economy which will have an impact on the ability of the firm to maintain its superiority in global business competition, despite the threat of uncertainty in the domestic and foreign textile business. The authors offer ideas through research on the process of Entrepreneur Capability and Co-creation and Innovation Capability which will all affect the performance of the textile business in Indonesia.
REFERENCES


