

# Do Technological Capabilities Influence Innovation In Creative Industry : The Case Of Handicraft Sector In Indonesia

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# Do Technological Capabilities Influence Innovation In Creative Industry: The Case Of Handicraft Sector In Indonesia

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**Abstract**— This study examines the effect of technological capabilities on innovation in small and medium enterprises (SMEs) in the handicraft sector's creative industries in Indonesia. The number of samples in this study was taken many as 253 SMEs in proportion. Data collection is done by a questionnaire directly to respondents. The data analysis technique in this study is the structural equation model (SEM) approach with the AMOS program. The findings show that technological capabilities has a positive and significant influence on innovation in the craft industry's SMEs creative industries in Indonesia. The results of this study indicate that the appropriate technological capabilities can help SMEs to innovate processes, products, and marketing. The low technological capabilities will have an impact on the ineffective and efficient work process and the difficulty of developing a variety of products produced.

**Index Terms**— Technological Capabilities, Innovation, Creative Industry

## 1 INTRODUCTION

Creative industry in the case of Small and Medium Enterprises (SMEs) is one of a business activity that focuses on creativity and innovation. The creative industry has a strategic role in economic growth, employment and in distributing the results of development that has been achieved [1]. Based on national data in Indonesia, the creative industry sector has absorbed 15.9 million workers with a contribution of 7.3% to gross domestic product (GDP), equivalent to IDR 852 trillion. In this case, the handicraft sector contributed 15.70% [2]. Globally, the creative industry provides a high economic value that even exceeds the oil and gas industry. Globally, the level of innovation in Indonesia among the countries in the world ranks 32, still below Malaysia 20 and Singapore which is ranked 12th [3].

The ability to innovate is an important factor that must be owned by entrepreneurs in managing business. Innovation ability shows that every business activity carried out has novelty and uniqueness. Entrepreneurial oriented businesses will always strive to produce new products that are innovative and have the courage to face risks [4].

So far there has not been much research on the influence of technological capabilities on innovation in the handicraft industry's SME creative industries in Indonesia. A questionnaire survey was conducted on 253 respondents. The purpose of this study was to determine the effect of these two factors.

## 2 LITERATUR REVIEW

### 2.1 Innovation

Innovation can be interpreted as a new discovery that is different from what already exists or that has been known before. Innovation is needed in a business because it can provide competitiveness for the company. Innovations in

business activities can be in the form of product development, new methods, or in the form of marketing and distribution activities. Innovation is a product, service, idea, and new perception from someone. Innovation is a product or service that is perceived by consumers as a new product or service [5].

Another called innovation to be a business operation whose main function is to carry out production reforms through the use of innovative ideas and sources to create new products (or produce old products using new manufacturing methods) and find new resources for products, markets, distribution, etc., namely rearranging the main production factors or patterns of innovation [6]. Innovation is the application of resources to create value for customers and companies by developing, repairing and commercializing new and existing products, processes and services [7].

It can be concluded that innovation is the process of discovering or applying something new through the process of creativity into a new situation. Novelty shows a difference from the others. Novelty is relative, meaning that what is considered new by another person or in a context is something that is old for others or in another context.

### 2.2 Technological Capabilities

Technological capabilities refers to the opinions of some researchers can be defined as the ability of companies to implement, improve and develop existing technologies into newer technologies so that the products produced by the company are unique, novelty and in accordance with market desires [8].

Indicators of technological capabilities according to [9] mentioned in the study consisted of; technology adoption capabilities, technological innovation capabilities and capabilities in plant maintenance. Technology capabilities refer to capabilities that enable companies to use and develop various technologies [10]. In paper also cited that indicators of technological capabilities namely; the ability to develop new technologies, product development capabilities, the ability to improve production processes, the ability to improve

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manufacturing procedures, and the ability to predict future technology[10]

### 2.3 The Link Technological Capability and Innovation

Technology capabilities must be mastered in order to be able to innovate continuously. Technology capability is the ability of companies to develop existing technology into newer technologies so that companies can meet market desires [8]. Research in paper [11] found that good technological capabilities can improve innovation performance. A study in paper [12] found that technological capabilities and social capital are positively related to innovative product launch strategies. In paper [13] the results of his research found that the company's technological competence derived from R & D is the main determinant of product innovation. Product innovation indicators used are idea development and implementation (including QC), idea diffusion: finding the right way to market their products and the right business model for each product. They also [13] found that the association technological capabilities with innovation. It was found that the ability of innovation is determined primarily by the quality of human resources that are able to learn continuously and follow the changing technological trends. The results of his study found that the company's technological competencies derived from R & D were the main determinants of product innovation.

### 2.4 Conceptual Framework

Based on the study of theory and the study of previous research, the conceptual framework of the study can be described as follows:

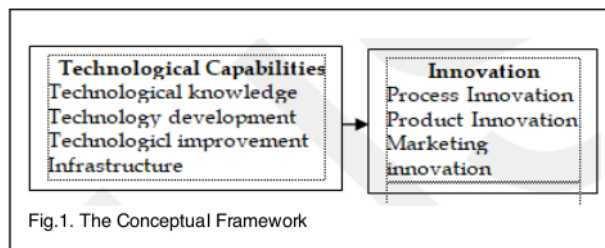


Fig.1. The Conceptual Framework

## 3 RESEARCH METHODE

A questioner survey was conducted on 253 respondents. This study uses descriptive and verification analysis search design. Descriptive analysis is a method using data by describing data that has been collected as it is without intending to make conclusions that apply to the general or generalizations. While verification is testing the relationship between two or more variables to prove the hypothesis. The data obtained is then processed, analyzed and further processed with the theoretical foundations that have been learned to draw conclusions. While the analysis was carried out through a quantitative approach using the AMOS version 24 program to test the hypothesis.

## 4 RESULT AND DISCUSSION

### 4.1. Normality

To find out the even distribution of data that can represent the population. Data distribution is said to be normal if it has a value of c.r between -2.58 to 2.58 [14]. The results of the normality test of the data from this study are as follows:

Based on the results of the above normality test it can be concluded that the data in multivariate are normally distributed with a value of c.r (0.800) <2.58.

TABLE 1  
NORMALITY TESTING

Variable	skew	c.r.	kurtosis	c.r.
Y3	-,118	-,765	-,269	-,873
Y2	-,568	-3,686	,233	,757
Y1	-,135	-,877	-,397	-,1290
X1	,150	,972	-,931	-3,022
X2	,023	,148	-1,342	-4,356
X3	,197	1,279	-1,309	-4,250
X4	,049	,317	-,903	-2,933
Multivariate			-1,129	-,800

Source : Data Processing Results

### 4.2. Measurement Model

TABLE 2  
MEASUREMENT MODEL RESULT

Laten Variabel	Manifest Variabel	CR	VE	Information
Technological Capabilities	X1	0,884	0,658	Reliabel
	X2			
	X3			
	X4			
Innovation	Y1	0,842	0,639	Reliabel
	Y2			
	Y3			

Source : Data Processing Results

Based on the table above shows that all constructs (latent variables) have CR values  $\geq 0.7$  and VE values  $\geq 0.5$  and can be said to be reliable.

### 4.3. Goodness of Fit Test

Goodness of Fit (GoF) is used to validate the overall structural model. GoF index is a single measure to validate the combined performance of measurement models and structural models.

TABLE 3  
GOODNESS OF FIT TEST RESULT

Googdness of Fit Index	Cut Of Value	Result	Information
GFI	> 0,90	0,963	Good Fit
AGFI	$\geq$ 0,90	0,920	Good Fit
CFI	> 0,95	0,980	Good Fit
TLI	> 0,95	0,967	Good Fit
RMR	$\leq$ 0,05	0,03	Good Fit
RMSEA	< 0,08	0,077	Good Fit

Source : Data Processing Result (2019)

Based on table 3 above, it is known that the final model of confirmatory factor analysis (CFA) formed has met the criteria

of goodness of fit (GOF). Thus, this full model fit or significant structural model can be used in the phase of testing the research hypothesis.

4.4. Hypothesis Testing Results

Hypothesis testing is done by analyzing regression weight significance values to determine the effect of innovation and business networks on the competitiveness of SMEs in the handicraft sector in West Java. The basic decision-making test of significance for regression weight is:

- If p-value < alpha 0.05 then the hypothesis becomes zero (0) and Ho is rejected, meaning there is an influence between two variables statistically.
- If p-value > alpha 0.05, the hypothesis becomes zero (0) and Ho is accepted, meaning that there is no influence between the two variables statistically.

TABLE 4  
HYPOTHESIS TESTING

		Estimate	C.R.	P
Innovation <--- Technological Capabilities		,629	7,861	0.000

Source : Data Processing Results (2019)

Based on the results of the study, it was found that the influence between technological mastery of innovation obtained a CR value of 7.861 and a value of p < 0.05, Ho was rejected and Ha was accepted, meaning that there was a positive and significant influence between technological capabilities and innovation. It can also be interpreted that the higher the mastery of technology, the higher the ability for innovation. Conversely the lower the mastery of technology, the lower the ability to innovate. This finding is in accordance with the results of research conducted in study [13], [15] which explains that technological capabilities is the main determinant of innovation. In paper [13] shows that technological capabilities contributes more to innovation performance than other factors. Furthermore, the findings in paper [12] also reinforce these findings, where the results of the study show that technological capabilities is positively associated with innovative product launch strategies.

5 CONCLUSION

Based on the number of samples of 253 craft sector SMEs, this study empirically examined the relationship between technological capabilities and innovation in craft sector SMEs in Indonesia. Technological capabilities in the handicraft sector SMEs in Indonesia tends to be low, as well as innovation at a level that tends to be low. Technological capabilities can explain variations that occur in innovation according to the research model. The low technological capabilities and innovation if left unchecked, will have an impact on the difficulty of producing products that are unique that can be designed according to the tastes of consumers in a faster time and difficulty in producing products that are guaranteed quality. In addition, the low technological capabilities will also have an impact on the ineffective and efficient work process

and the difficulty of developing the variety of products produced. Another impact is the lack of maximum innovation in online marketing. To prevent adverse effects due to the low technological capabilities and innovation, SMEs should improve the ability of human resources to absorb, adopt and implement the right technology in their business. Technological capabilities makes it easy to process innovation, product innovation and marketing / distribution innovation. Process innovation creates faster service, product innovation that is making product designs that meet consumer / market tastes, while marketing innovation is making new breakthroughs in marketing mix and network marketing.

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