

# Enhancing Innovative Performance in Manufacturing Company

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## ABSTRACT

Innovation activities carried out by an organization have a very significant impact on the organization and its members. Several studies have concluded that innovation is proven to improve the performance of companies and employees. However, several studies have found that innovation activities within a company experience several difficult obstacles. This study aims to analyze the effect of ambidexterity on innovation performance by mediating change readiness in a manufacturing company in Indonesia. This research was conducted by distributing questionnaires by means of purposive sampling of 223 employees in a multi-national group of companies with a population of all company employees. Data processing analysis was carried out using SEM Lisrel application. The conclusion of this study is ambidexterity is proven to have a direct positive effect on innovation performance. The readiness for change has also been proven to have a direct positive influence on innovation performance. The readiness for change makes an indirect positive contribution in mediating the effect of ambidexterity on innovation performance. Based on the results of this study, we suggest companies to manage activities by preparing company employees in the face of change. Companies are also suggested to build ambidexterity capabilities in the form of exploitation and exploration capabilities.

**Keywords-** ambidexterity, change readiness, innovation, performance, innovative performance.

## 1. INTRODUCTION

The company's future performance cannot be reflected in the current financial performance in the financial statements. Long-term company performance can be reflected by the technology being developed. Companies that fail to achieve their innovation goals must modify their technology development portfolio which depends on the financial resources they have (Lungeanu, Stern, & Zajac, 2016). The constraints of a company's resources will affect the type of changes that the company will make to its portfolio of technology resources in response to poor innovative performance.

Innovative performance has been widely studied and researched in several scientific disciplines, so that it has diverse understandings in various perspectives (Damanpour & Daniel Wischnevsky, 2006) from various sources of literature by combining elements of ability and attitude with elements of achieving competency-based results (Forés & Camisón, 2016). In another study, Koeborg, Detienne, & Heppard (2003) categorized product and service innovation into radical innovation, while procedural, personnel, process and structural innovation innovations into incremental innovation. Meanwhile (Cantner, Joel, & Schmidt, 2011) and (Forsman, 2011) categorize innovation performance into

radical innovation if innovation in the form of new product innovation, service innovation, process innovation or method innovation is very different from competitor methods

Research conducted by Benzer, Charns, Hamdan, & Afable (2017) concluded that the dimensions of organizational structure in the organizational context of a company, have an influence on the readiness of the change process. Other research conducted by (Tai, Wang, & Wang, 2017) in the field of information and technology innovation suggests that in an effort to improve innovation capabilities, companies must implement ambidextrous organizations through exploitation and exploration activities in information and technology. The organizational structure in an innovation process also has an important role.

The concept of ambidexterity in management studies is used to describe various differences in organizational behavior and outcomes. (Nosella, Cantarello, & Filippini, 2012) argue that an ambidextrous organization is used to refer to an organization's ability to do two different things at the same time, for example, exploitation and exploration, efficiency and flexibility, or alignment and adaptability. One of the reasons of an organization's failure in innovation program is the inability of the organization's ambidexterity to respond the changes.

In responding to changes, there are no significant behavioral differences between employees. Employees who do not support organizational performance have behavior that is

resistant to change. Resistance to a change process is a factor that causes organizational performance failure (George et al., 2014). The readiness of employees in dealing with changes in organizations increases organizational performance, especially through the use of the latest technology, training and development as well as equipment and infrastructure updates (Ndahiro et al., 2015).

Based on those previous studies, it concluded that ambidexterity and change readiness are an important factors in determining the success of firm's innovative performance. In accordance with the studies, the purposes of our research are to examine the effect of ambidextrous and change readiness on firm's innovative performance.

## 2. THEORETICAL BACKGROUND

### Ambidexterity

In his literature study, O'Reilly & Tushman (2013) found that Robert Duncan (1976) was the first researcher to use the term ambidexterity in a management literature. Several discussions on organizational studies try to discuss the concept of organization ambidexterity, including (Tushman & O'Reilly, 1996) which proposes the concept of organization ambidexterity by defining it as the ability of an organization to carry out incremental and interrupted innovations simultaneously, starting from providing various structures, processes, and culture within the company. This capability is needed for the company's long-term survival.

According to (Bledow, 2009) ambidexterity literally means the ability to use two explorative and exploitative organizational strategies equally well, where these capabilities involve complex and adaptive systems in managing and meeting the needs of opposites in fundamentally different activities. The term ambidexterity according to Simsek (2009) is taken from the Latin *ambos*, which has both meanings, while *dexter*, has a sense of right and left balance. The concept of ambidexterity in management studies is used to describe various differences in organizational behaviour and outcomes. (Nosella, Cantarello, & Filippini, 2012) argue that an ambidextrous organization is used to refer to an organization's ability to do two different things at the same time, for example, exploitation and exploration, efficiency and flexibility, or alignment and adaptability. O'Reilly & Tushman (2013) stated that the essence of organizational ambidexterity is the description of an organization's ability to improve business maturity and the ability to explore competitive advantage in new fields.

Cao, Gedajlovic, & Zhang (2009) categorize two dimensions of ambidexterity, namely: the dimension of the ambidexterity balance and the combined dimension of ambidexterity. The dimensions of ambidextrous organizational culture according to Z. Wang et al., (2012) are: organizational diversity & shared vision.

In this study, we define ambidextrous organization as the ability of an organization to exploit and explore all available

resources in the organization to complete innovation projects in all areas of the company's business with measurement indicators, namely: exploration capabilities and exploitation capabilities.

### Change Readiness

Change readiness is one of the determining success factors for in an organization change (Abdel-Ghany, 2014). If an organization has a high level of change readiness, the members of the organization must be directed a lot in the efforts of the change process (Weiner, Amick, Lee, & Lee, 2008). Change readiness is an individual's awareness in accepting and willing to be involved to change the status quo (Rafferty, Jimmieson, & Armenakis, 2013).

The biggest challenge of change is depend on the same assumptions in organizations that employees must get ready for a process of change that will soon occur within the organization (Cunningham et al., 2002). According to Vakola (2014) change readiness is influenced by the extent to which employees trust their organization's ability to change, trust those who lead the way and set an example, and receive all necessary information about change.

Change readiness is defined as a positive and proactive response in the face of a change in environmental conditions (Stevens, 2013), the extent to which the psychological readiness and behaviour of members of the organization in carrying out organizational change (Weiner et al., 2008). The use of the term change readiness reflects the understanding of several concepts, namely: the change readiness individually, the perception of readiness for change in an organization and the real readiness of an organization in dealing with change (Vakola, 2013). Meanwhile another definition of change readiness is the behavior and mindset of an employee that arises when faced with the process of change in an organization, which includes: attitudes, concerns and beliefs about organizational change (Armenakis, Harris, & Mossholder, 1993).

The dimensions of readiness for change by Castañeda et al., (2012) are: community and organizational climate that facilitates change (conditions of society and organization), current attitudes and efforts towards prevention (awareness, values and efforts), commitment to change (necessary and commitment to change), capacity to implement change (relational capacity, efficacy, skills and knowledge). Readiness for change in this study is measured by organizational climate in adapting to change, awareness of change, commitment to change and competence (skills and knowledge).

Based on the above concepts, in this study the readiness for change defined as the ability of the organization and its members to deal with the planned change process within the organization, so that the change goals can be achieved in an effective and efficient manner according to measurement indicators, including: a work climate that encourages innovation, innovation facilities and equipment, awareness of change, commitment to change, knowledge of the improvement process and the ability to make improvements.

## Innovative Performance

Dewangan & Godse (2014) define innovation as a combination of discovery and exploitation activities. Discovery activities are ideas management (idea creation and selection) and incubation of selected ideas, while exploitation activities are the commercialization of innovations and the utilization of the findings. Innovation ability is defined as factors that influence the ability of organizations to manage innovation (Saunila, Pekkola, & Ukko, 2014) consisting of 3 (three) elements, namely: innovation potential, innovation process and results of innovation activities (Saunila & Ukko, 2012). According to Oluseyi Moses Ajayi & Morton (2015), innovation can take the form of product innovation, service innovation and process innovation.

Innovation is only a starting point that includes different steps for the successful implementation of creative ideas in an organization at different levels (Yuan & Woodman, 2010). The innovation process starts with the idea generation phase, which involves the generation of new and useful ideas in various domains (Woodman, Sawyer, & Griffin, 1993), the phase of developing and realizing ideas by turning ideas into useful applications (Kanter, 1988).

Oluseyi M Ajayi (2013) categorizes innovative changes into four main groups, as follows: (a) Group One: Innovation of the products and services produced by the company. (b) Group Two: Innovation of the mechanism directly involved in producing products and services. (c) Third Group: Innovations on the mechanisms involved indirectly in producing products or services, for example: organization, business models, institutions, administration, management, and innovation paradigms. (d) Group Four: Innovation of the mechanism system in the process of delivering products and services produced to customers, for example: delivery, position, and market innovation.

According to Yusr (2016) innovation plays an important role in predicting the long-term survival of an organization, determining organizational success and maintaining its global competitiveness, especially in environments where technology, competitive position and customer demands can change almost overnight, and where the product life cycle and services become shorter. Therefore management must be able to understand and manage innovations in the company in order to improve its operational performance (Gunday, Ulusoy, Kilic, & Alpkan, 2011).

Dul & Ceylan (2014) defines the performance of product innovation in 2 different concepts, namely: productivity of new products and success of new products. The productivity performance of new products is the ability of companies to introduce new products to the market, while the success performance of new products is a large percentage of the company's sales compared to new products. Forés & Camisón (2016) divided innovation performance into 2 categories, namely radical innovation performance and incremental innovation performance. Radical innovation performance is defined as the ability of an organization's innovation to produce very fundamental changes in processes, products, technology, structures and methods. Whereas incremental innovation performance is defined as

an organization's innovation ability to improve and enhance processes, products, technologies, structures and methods.

Organizational innovation performance is a combination of objective and subjective performance measures (Camisón & Villar-López, 2014). Objective innovation performance consists of: earnings, capital turnover used, and total asset turnover, while subjective innovation performance consists of: average economic profitability, mean financial profitability, and average sales profitability.

According to Tajasom et al., (2015) innovation performance can be measured by the ability to introduce new products and services to the market before competitors, the percentage of new products in existing product portfolios, the number of new product and service projects, innovations introduced for process work and methods, the quality of new products / series introduced, the number of innovations under intellectual property protection and the renewal of the administrative system and mindset in line with the corporate environment.

In this study, we define innovative performance as the results obtained by the organization based on the activities of change in the form of innovation carried out in the company with indicators in the form of: innovation changes made by employees and innovation changes made by the company.

## Ambidexterity, Change Readiness and Innovative Performance

Im & Rai (2014) found an ambidexterity context to enhance exploitative and explorative knowledge sharing, thereby promoting the benefits of sustainable IOR performance for both partners. Although the ambidextrous approach which includes exploration and exploitation activities, the results of research on the implications of the performance of organizational ambidexterity have produced different results (Simsek, 2009). Fu et al. (2016) found that the relationship between ambidexterity and performance was stronger where firms had higher levels of organizational capital. Research (C. L. Wang & Rafiq, 2014) has found that ambidexterity organizations play an important role in improving company performance. Research conducted by (Zhang, Wang, Li, & Cui, 2017) also concluded that exploration activities and technological exploitation complement each other and affect the company's performance.

Ambidexterity has an impact on superior organizational performance (O'Reilly & Tushman, 2013; Junni et al., 2013), despite using dimensions, a series of outcome variables, at various levels of analysis and samples from different industries, overall research- the study found that ambidexterity has a strong relationship with organizational performance. In another research Lubatkin, Simsek, Ling, & Veiga (2006) concluded that environmental complexity positively moderates the relationship between organizational ambidexterity and organizational performance, so that when complexity is high, its influence will also be stronger. The ambidextrous organization strategy has a positive impact on four performance dimensions: sales revenue,

profits, customer satisfaction, and new product introductions (Sarkees, Hulland, & Prescott, 2010).

Junni et al. (2013) found that ambidexterity organization has a significant positive impact on company performance. Popadić et al. (2016) found that ambidexterity of exploratory innovation and exploitative innovation is positively related to firm innovation performance. Whereas Bresciani et al. (2018) have argued that many studies have found a positive relationship between organizational ambidexterity and some organizational performance (Faisal Ahammad, Mook Lee, Malul, & Shoham, 2015; Kauppila, 2010).

Nazir et al. (2011) concludes that corporate ambiguity in terms of exploration and exploitation has a positive influence on the ability of radical change and the ability of gradual change. Another study by Franco & Cerimele, (2019) concluded that companies need to utilize the known and unknown variables of a complex condition with exploration and exploitation activities in order to find the right way to respond to changes that occur. Based on the results of study Y. I. Zhang et al. (2018) concluded that the preceding factors of the ability of ambidexterity have a positive influence on the ability and performance of employees in the process of change.

Organizational readiness for changes which support the development of innovations in products and processes can produce superior company performance (Camisón & Villar-López, 2014) and will have competitiveness in several operating priorities and obtain the best company performance (Kilic et al., 2015). Organizational performance, directly and indirectly through organizational innovation is positively influenced by competitiveness in operations and technology. Organizational innovation strategies, supplier-based, institutional-based research and foreign-based actions always have a positive impact on innovation performance (Bolívar-Ramos et al., 2012).

### 3. RESEARCH METHODOLOGY AND FRAMEWORK

The research was conducted in a manufacturing company located in Indonesia with a purposive sampling technique from 223 employees with position team leader level up to director. The instrument test was conducted using SPSS 2.5 to test the validity where  $r$  (table) = 0.361 (N = 30) and the reliability test with the Cronbach Alpha value > 0.60. The hypotheses model is tested using Lisrel 8.7.

Based on above literature researches, our study proposes the hypothesis below:

H1: Ambidexterity significantly influence on the innovative performance;

H2: Ambidexterity significantly influence on the change readiness;

H3: Change readiness significantly influence on the innovative performance;

H4: Ambidexterity significantly influence on the innovative performance mediated by change readiness;

The research framework of this study can describe in figure 1.

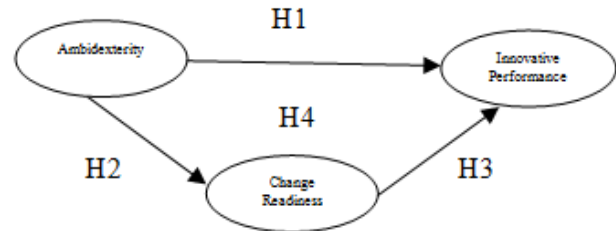


Figure 1. The research framework of this study

## 4. RESULT AND DISCUSSION

### Validity and Reliability Test

The results of the validity test on the indicator questions from innovative performance variables is valid, except question KI1 was invalid ( $r < 0.362$ ), so it must be discarded. After item KI1 is removed, all indicators become valid ( $r > 0.361$ ). The reliability test results on innovative performance variable is a high level of reliability (Cronbach's alpha = 0.891), authentic followership variable is a high level of reliability (Cronbach's alpha = 0.873).

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### Hypothesis Test

The result of hypothesis test for each hypothesis can be seen in the following table:

Table 1: Hypothesis Test

	Hypothesis Test Result		
	Hypothesis	t-calc	Result
H1	Ambidexterity significantly influence on the innovative performance	4.52	Ha accepted
H2	Ambidexterity significantly influence on the change readiness	7.25	Ha accepted
H3	Change readiness significantly influence on the innovative performance.	3.05	Ha accepted
H4	Ambidexterity significantly influence on the innovative performance mediated by change readiness;	3.80	Ha accepted

From table I, from 4 hypotheses proposed in this study, all of hypotheses are accepted, with the following explanation:

The degree of confidence  $\alpha = 0.05$  and the number of samples > 100, the t-table is 1.96. If t-count is smaller than t-

table (1.96), then  $H_0$  is rejected and  $H_1$  is accepted. The complete t-test for the five hypotheses is as follows:

1. The t-value of hypothesis 1 is 4.52. This t-value > t-table 1.96, so it is in the area of rejection of  $H_0$ , therefore  $H_a$  is accepted. It concluded that ambidexterity significantly influence on the innovative performance.
2. The t-value of hypothesis 1 is 7.25. This t-value > t-table 1.96, so it is in the area of rejection of  $H_0$ , therefore  $H_a$  is accepted. It concluded that ambidexterity significantly influence on the change readiness.
3. The t-value of hypothesis 1 is 3.05. This t-value > t-table 1.96, so it is in the area of rejection of  $H_0$ , therefore  $H_a$  is accepted. It concluded that change readiness significantly influence on the innovative performance.
4. The t-value of hypothesis 1 is 3.80. This t-value > t-table 1.96, so it is in the area of rejection of  $H_0$ , therefore  $H_a$  is accepted. It concluded that ambidexterity significantly influence on the innovative performance mediated by change readiness.

## 5. CONCLUSION

This research concludes that ambidexterity and change readiness have directly influence on innovative performance. Meanwhile, ambidexterity significantly influence on the innovative performance mediated by change readiness. Based on the result of this research, we recommend the company to consider the strategy in enhancing innovative performance by improving the ambidexterity of the organization through increasing the organization's capability in exploit current business process and explore a new business.

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