



## Exploring organizational learning and innovation within Indonesian batik SMEs

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### Abstract

The aim of this study is to explore the organizational learning and innovation practices within small and medium scale companies. This study performs a Manova to examine the effect of four company attributes on the capability level of organizational learning and innovation. This study applied a survey method to collect data concerning organizational learning and innovation practices. The instrument used in the study is structured questionnaires distributed directly to the respondents. The sample involved comprises 74 companies located in the Bekasi region, West Java Province of Indonesia. The results indicate that scores of organizational learning and innovation capability significantly varies across company size, particularly for the item of acquisition of external knowledge and the item of process innovation. This study found that scores of organizational learning and innovation capability significantly varies across company market, particularly for the item of distribution of knowledge and the item of organizational innovation. It was also found that scores of organizational learning and innovation capability significantly varies across industry sector, particularly for the item of organizational memory and the item of product innovation.

**Keywords:** organizational learning, innovation, organizational attributes

### 1. Introduction

The literature widely views that an organization can basically be seen as a living creature whose survival is largely determined by its ability to adapt to the environment. The life of every organization is inseparable from the influence of the external environment, because the organization as a system always interacts with its environment. Specifically, the literature emphasizes that companies must be responsive and adaptive to environmental changes that become increasingly complex and full of uncertainty, especially in the face of increasingly competitive market competition. For this reason, all organizations are required to learn so companies can develop organizational knowledge needed to improve performance and gain competitive advantage. In other words, every organization is required to build the ability to learn through a process called organizational learning (Baker and Sinkula <sup>[1]</sup>, 2002; Perez Lopez *et al.*, 2004) <sup>[21]</sup>. In addition to organizational learning, another factor seen as a key element for business success is innovation. This is based on the view that consumers sometimes view that some of the products and services that are boring. That is why they no longer buy these products and choose to buy other products that are more attractive. Such conditions, warn companies that they must innovate. They must innovate to improve performance and achieve competitive advantage. Companies must innovate to create new products and services. Companies will get various benefits if they are involved in the innovation process: increasing individual creativity within the company, attracting many consumers, and gaining new knowledge (Brockman and Morgan, 2003 <sup>[5]</sup>; Skerlavaj *et al.*, 2010) <sup>[26]</sup>. Many experts suggest that companies need to understand and deal with technological developments. Many experts argue that the mastery of technology is an important prerequisite that must now be mastered to

Improve performance and competitiveness in the market. The dynamics of consumer preference require companies to think out of the box to survive and thrive in an increasingly competitive market environment. Innovation has an important role in facilitating the development of business enterprises. Companies must be able to offer superior products that have a faster cycle turnaround because the need for improvement processes every time (Battor and Battor, 2010 <sup>[3]</sup>; Calantone *et al.*, 2002) <sup>[6]</sup>. Innovation has an important role in supporting the sustainability of a company, regardless of the type and size of the company. Companies that innovate will be able to survive and thrive in a dynamic market environment. Innovation activities are often associated with various efforts to discover new things, things that are different from existing ones, things that have more value, or in an action, how to make breakthroughs, different breakthroughs that have never been done before. However, innovation basically does not always take the form of the big findings that shakes the world. Even small-looking findings can in fact have a major effect on company performance. In other words, a small innovation can provide more advantages in terms of business for the company. Successful innovation will produce quality services and products. Innovation does not have to come from company leaders. From the results that already exist, the company can innovate by involving its employees in generating ideas and creativity to find a new innovation. This gave rise to a corporate culture that provided the widest possible opportunity for all employees to innovate or just express ideas or ideas (Bigliardi and Dormio, 2009; Camison and Villar Lopez, 2010) <sup>[7]</sup>. This study aims to explore the capabilities of organizational learning and innovation in manufacturing SMIs in Indonesia. Specifically, this study aims to examine whether organizational learning and innovation capabilities vary based on company size, operating age, market orientation, and industry sector.

## 2. Literature Review

### 2.1. Organizational learning

Many definitions of organizational learning are known in the business and management literature, although there is no universal definition of organizational learning. Some definitions refer to activities that are action oriented and focus on their implementation. For example, organizational learning can be referred to as a learning process or activity carried out in an organization or a process that enables an organization to transform information into valuable knowledge that can be used by organizations in increasing their long-term adaptation capacity. In this perspective, Garvin (2000) <sup>[11]</sup> defines organizational learning as the ability of organizations to create, obtain, interpret, transfer and share knowledge, which aims to modify their behavior to describe new knowledge and insights. Meanwhile, according to Luthans (1995) <sup>[18]</sup> defines organizational learning as a set of organizational behavior that shows organizational commitment to learning and continuing to make improvements so that organizational operations will become more efficient. Organizational learning provides basic principles that enable organizations to learn (Cleveland and Plastrik, 1995) <sup>[8]</sup>. Organizational learning is based on basic principles of learning: that is, receiving and collecting information, interpreting it, and acting on the interpretation of that information (Garvin, 2000) <sup>[11]</sup>. Senge (1994) <sup>[25]</sup> asserts that organizational learning has an orientation to improving the ability of human resources in organizations. In this case, Senge argues that organizational learning is intended to expand the capacity of people in organizations in creating the results they want. Learning in organizations enables companies to build new patterns of thinking, develop collective aspirations, and facilitate all individuals to continue learning together. The concept of organizational learning has been reviewed by many researchers. Organizational learning is a type of activity in organizations where an organization learns. The behavior of a learning organization is collecting, interpreting and applying knowledge to improve organizational performance. Organizational learning rejects stability by continuously conducting self-evaluation and experimentation (Baldwin *et al.*, 1997) <sup>[2]</sup>. In organizational learning, each member of the organization continues [1] to observe the environment in an effort to obtain important information, [2] make changes in the strategies and programs needed to benefit from environmental changes, [3] work with methods, procedures, and evaluation techniques that are continuously improved. Organizations that are willing to experiment and are able to learn from their experiences will be more successful than organizations that do not (Wheelen and Hunger, 2002) <sup>[27]</sup>. An organization can learn in several ways. Pearn *et al.* (1995) <sup>[20]</sup> states that organizational learning emphasizes the use of learning processes at the individual, group and system levels to find various ways that can improve organizational performance. Kim (1993) <sup>[17]</sup> emphasizes that individual learning and organizational learning are inseparable. Organizations learn through individuals who are part of the organization. People are employed because they have certain competencies or knowledge, which they get from their work or from formal training. It can be said that formal education is one way to improve individual abilities and that organizations benefit from the various activities of the educated individual. Based on this view, learning is a phenomenon where organizations benefit from

skilled members of their organizations.

### 2.2. Innovation

The concept of innovation has been interpreted differently by several experts. The literature suggests that innovation is a complex concept. Innovation is not only limited to products, but can be ideas, ways or objects that are perceived by someone as something new. Innovation is also often used to refer to changes that are felt as something new by people who experience (Camison and Villar Lopez, 2010) <sup>[7]</sup>. In the management literature, innovation is often associated with new products or services. The new term here refers to products that really have never existed before in the market and are new in the sense that there are different things that are improvements or improvements from previous products that have been encountered by consumers in the market (Forsman, 2011 <sup>[10]</sup>; Purwanto *et al.*, 2015) <sup>[23]</sup>. Furthermore, innovation can be interpreted as a process or result of the development or use of knowledge, skills and experience to create or improve products or processes that can provide more meaningful value; or transformation of knowledge to new products, new processes, new services, or actions using something new; or the successful exploitation of a new idea or in other words is the mobilization of knowledge, technological skills and experience to create new products, processes and services (Gunday *et al.*, 2011) <sup>[13]</sup>. According to Hult *et al.* (2004) <sup>[14]</sup>, innovation has a close relationship with environmental conditions that are characterized by dynamic and developing. Rogers (2007) explains that innovation is an idea, practice, or object that is considered new by individual organizations. According to Damanpour (1996), innovation can be realized in new products or services, new production methods, new organizational work systems for members of the organization. According to Raymond and St-Pierre (2010) <sup>[24]</sup>, organizational innovation is defined as new ways in which work arrangements are carried out in an organization to encourage and promote competitive advantage. The essence of organizational innovation is the need to improve or change a product, process or service. Organizational innovation is able to encourage individuals to think independently and creatively in applying personal knowledge to organizational challenges. According to Omachonu and Einspruch (2010) <sup>[19]</sup>, innovation has the following attributes. First, an innovation must have advantages and more value compared to previous innovations. An innovation is always a new value inherent in innovation that is a characteristic that distinguishes it from the others. Second, Innovation should have a compatible nature or compatibility with the innovation it replaces so that the old innovation is not necessarily thrown away. Apart from the cost factor, the old innovation is part of the transition process to the latest innovation. Third, an innovation has a level of complexity that may be higher than the previous innovation. However, because an innovation offers a new and better way, this level of complexity is generally not an important issue. Fourth, an innovation can only be accepted if it has been tested and proven to have advantages or value compared to the old innovation. Fifth, an innovation must also be observed, in terms of how an innovation works and produces something better.

### 2.3. Organizational attributes

To provide more insight into the level of organizational

learning and innovation capability, this study examines the effect of several company attributes (i.e., company size, company age, industry sector, and market orientation) on the level of organizational learning and innovation capabilities. According to the literature, company size has a positive effect on improving innovation performance; assuming that large companies in general have more resources to engage in innovation activities (Damanpour, 1996; Jimenez-Jimenez and Sanz-Valle, 2011) <sup>[15]</sup>. The second company characteristic examined in this study is the age of the company. According to the literature, the age of the company has a positive effect on improving the capability of learning and the performance of corporate innovation. Some experts suggest that organizational experience enables companies to develop operations and innovation activities efficiently. They assume that the lack of experience of young companies can hamper the development of innovation in organizations (Jimenez-Jimenez and Sanz-Valle, 2011) <sup>[15]</sup>.

### 3. Research Methodology

#### 3.1. Research design

This study applied a survey method to collect data concerning organizational learning and innovation. The instrument used in the study is structured questionnaires distributed directly to the respondents. The sample involved comprises 74 companies located in the Bekasi region, West Java Province of Indonesia.

#### 3.2. Variables Measurement Organizational learning

Referring to Jimenez-Jimenez and Sanz-Valle (2011) <sup>[15]</sup>, this study refers organizational learning as a process within an organization with the aim to develop new knowledge. Following Perez Lopez *et al.* (2004) <sup>[21]</sup>, this study distinguishes organizational learning into five modes: external knowledge acquisition (4 items), internal knowledge acquisition (3 items), knowledge distribution (5 items), knowledge distribution (5 items), and organizational memory (8 items). All items were measured using a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). *Innovation* Following Camison and Lopez (2010), this study refers innovation capability as the ability of organizations to implement new ideas for organizations into new products, process, organizational methods, and marketing methods. Referring to Camison and Lopez (2010) and Guan and Ma (2003), this study includes four dimensions into the innovation capability construct: product innovation (5 items), process innovation (5 items), organizational innovation (5 items), and marketing innovation (5 items). All items were measured using a five-point Likert-type scale ranging from 1 (strongly disagree) to 5 (strongly agree). *Company's attributes* The first attributes of company included in this study is company size. Following Purwanto and Raihan (2018) <sup>[22]</sup>, company size was measured on the basis of the number of employees. In this perspective, company size is classified into four groups, namely SIZE 1 (20-40 employees), SIZE 2 (41-60 employees), SIZE 3 (61-80 employees), and SIZE 4 (81-100 employees). This study performed one-way MANOVA to examine if the degree of organizational learning and innovation capability differ across company size. The second attribute of company included in this study is company age. Following Purwanto and Raihan (2018) <sup>[22]</sup>, company age was measured on the basis of how long the

company has been operating. In this perspective, company age is classified into three groups, namely AGE 1 (7-11 years), AGE 2 (12-16 years), and AGE 3 (17-21 years). This study performed one-way MANOVA to examine if the degree of organizational learning and innovation capability differ across company age. The third attribute of company included in this study is market orientation. Following Purwanto and Raihan (2018) <sup>[22]</sup>, market orientation refers to the market segment pursued by the company. In this perspective, market orientation is classified into three groups, namely MARKET 1 (local market-oriented), MARKET 2 (national market-oriented), and MARKET 3 (international market-oriented). This study performed one-way MANOVA to examine if the degree of organizational learning and innovation capability differ across market orientation. The fourth attributes of company included in this study is industry sector. Following Purwanto and Raihan (2018) <sup>[22]</sup>, industry sector refers to the type of industry wherein the companies operate. In this perspective, market orientation is classified into three groups, namely SECTOR 1 (machining), SECTOR 2 (electrical parts), SECTOR 3 (automotive parts), and SECTOR 4 (plastic/paper products). This study performed one-way MANOVA to examine if the degree of organizational learning and innovation capability differ across industry sector.

### 4. Results and Discussions

#### 4.1. Descriptive analysis organizational learning

Over the past decade, organizational learning has been defined as an important capability that companies must master to achieve competitive advantage. Some experts have considered organizational learning as a prerequisite for ongoing innovation activities in organizations. In fact, some experts have considered organizational learning as the only source of sustainable competitive advantage (Baker and Sinkula <sup>[1]</sup>, 2002; Brockman and Morgan, 2003) <sup>[5]</sup>. Refer to Perez Lopez *et al.* (2004) <sup>[21]</sup>, this study distinguishes organizational learning processes into five modes: external knowledge acquisition, internal knowledge acquisition, knowledge distribution, knowledge distribution, and organizational memory. The average value of respondents' responses to the five dimensions of organizational learning is presented in Table 1. As shown in Table 1, the average score of respondents' responses to the five dimensions of organizational learning ranged from 3.16 points and 4.22 points. All of these average scores are higher than 2.5; shows that organizational learning is considered an important ability that must be mastered by companies to support innovation in organizations, especially the ability of companies in the acquisition of external knowledge (average score = 4.22 points).

**Table 1:** Mean score of organizational learning dimensions

Organizational learning dimensions	Mean	Standard deviation
Acquisition of external knowledge	4,22	0,76
Acquisition of internal knowledge	3,32	1,13
Knowledge distribution	3,53	1,03
Knowledge interpretation	3,16	0,82
Organizational memory	3,79	0,97

#### 4.1.1. Innovation capability

The capability of innovation can be referred to as the ability of organizations to implement new ideas for organizations

into new products, processes, organizational methods, and marketing methods (Camison and Lopez, 2010) [7]. In recent years, the literature has emphasized that companies are required to have the ability to innovate as a prerequisite for achieving long-term competitive advantage. Some experts emphasize the capability of innovation to enable companies to respond to market changes and challenges and obtain higher opportunities to open markets (Baker and Sinkula, 2002 [1]; Jimenez-Jimenes and Sanz-Valle, 2011) [15]. Referring to Camison and Lopez (2010) and Guan and Ma (2003), this study distinguishes the ability of innovation into four types: product innovation, process innovation, organizational innovation, and marketing innovation. The average value of respondents' responses to the five dimensions of innovation capability is presented in Table 2. As shown in Table 2, the average score of respondents' responses to the four dimensions of innovation capability ranges from 3.31 points and 4.42 points. All of these average scores are higher than 2.5; shows that the innovation capabilities of the companies involved in the research are at a pretty good level, especially the company's innovation capability in the production process (average score = 4.42 points).

**Table 2:** Mean score of innovation capability dimensions

Innovation capability dimensions	Mean	Standard deviation
Product innovation	4,07	0,94
Process innovation	4,42	0,81
Organizational innovation	3,75	0,87
Marketing innovation	3,31	0,76

**4.2. One: way MANOVA analysis**

**Analysis of MANOVA 1**

Model of MANOVA 1 is related to the influence of SIZE on organizational learning and innovation capability levels. This study performed one-way MANOVA to examine if the levels of organizational learning and innovation capability differ across company size. In this case, the hypothesis of the model are formulated as follows.

**Hypothesis 0**

Company size has no effect on the levels of organizational learning and innovation capability. In other words, the mean score of organizational learning and innovation capability does not vary across company sizes.

**Hypothesis 1**

Company size has an effect on the level of organizational learning and innovation capability. In other words, the mean score of organizational learning and innovation capability vary across company sizes.

The results of test for the model of MANOVA 1, presented in Table 3, indicate that scores in organizational learning (Wilks' lambda = 0.57) and innovation capability (Wilks' lambda = 0.64) significantly varies across the size. The further analysis indicates that the difference in organizational learning scores significantly occurs on the item of acquisition of external knowledge (p<0.05) while the difference in innovation capability scores significantly occurs on the item of process innovation (p<0.01). In particular, it was found that the difference on the item of acquisition of external knowledge take place between companies belonging to

SIZE 1 and companies belonging to SIZE 4. Meanwhile, the difference on the item of process innovation arises between companies belonging to SIZE 1 and companies belonging to SIZE 4.

**Table 3:** The results of the MANOVA 1 test

Size	Comparison	Organizational learning					Innovation capability			
		OL1	OL2	OL3	OL4	OL5	IC1	IC2	IC3	IC4
1	2	N	N	N	N	N	N	N	N	N
	3	N	N	N	N	N	N	N	N	N
	4	Y***	N	N	N	N	N	Y**	N	N
Wilks' lambda		0.64					0.57			

Note: Significance at, \*p<0.10 \*\*p<0.05 \*\*\*p<0.01

**Analysis of MANOVA 2**

Model of MANOVA 2 is related to the influence of AGE on organizational learning and innovation capability levels. This study performed one-way MANOVA to examine if the levels of organizational learning and innovation capability differ across company age. In this case, the hypothesis of the model are formulated as follows.

**Hypothesis 0**

Company age has no effect on the levels of organizational learning and innovation capability. In other words, the mean score of organizational learning and innovation capability does not vary across company ages.

**Hypothesis 1**

Company age has an effect on the level of organizational learning and innovation capability. In other words, the mean score of organizational learning and innovation capability vary across company ages.

The results of test for the model of MANOVA 2, presented in Table 4, indicate that scores in organizational learning (Wilks' lambda = 0.71) and innovation capability (Wilks' lambda = 0.84) significantly varies across age. The further analysis indicates that the difference in organizational learning scores significantly occurs on the item of distribution of knowledge (p<0.01) while the difference in innovation capability scores significantly occurs on the item of organizational innovation (p<0.01). In particular, it was found that the difference on the item of knowledge distribution take place between companies belonging to AGE 1 and companies belonging to AGE 3. Meanwhile, the difference on the item of product innovation arises between companies belonging to AGE 1 and companies belonging to AGE 3.

**Table 4:** The results of the MANOVA 2 test

Size	Comparison	Organizational learning					Innovation capability			
		OL1	OL2	OL3	OL4	OL5	IC1	IC2	IC3	IC4
1	2	N	N	N	N	N	N	N	N	N
	3	N	N	N	Y***	N	Y***	N	N	N
Wilks' lambda		0.71					0.84			

Note: Significance at, \*p<0.10 \*\*p<0.05 \*\*\*p<0.01

**Analysis of MANOVA 3**

Model of MANOVA 3 is related to the influence of MARKET on organizational learning and innovation capability levels. This study performed one-way MANOVA to examine if the levels of organizational learning and innovation capability differ across company market. In this

case, the hypothesis of the model is formulated as follow.

**Hypothesis 0**

Company market has no effect on the levels of organizational learning and innovation capability. In other words, the mean score of organizational learning and innovation capability does not vary across company market.

**Hypothesis 1**

Company market has an effect on the level of organizational learning and innovation capability. In other words, the mean score of organizational learning and innovation capability vary across company market.

The results of test for the model of MANOVA 3, presented in Table 5, indicate that scores in organizational learning (Wilks' lambda = 0.65) and innovation capability (Wilks' lambda = 0.77) significantly varies across market. The further analysis indicates that the difference in organizational learning scores significantly occurs on the item of distribution of knowledge (p<0.01) while the difference in innovation capability scores significantly occurs on the item of organizational innovation (p<0.01). In particular, it was found that the difference on the item of knowledge distribution take place between companies belonging to MARKET 1 and companies belonging to MARKET 3. Meanwhile, the difference on the item of product innovation arises between companies belonging to MARKET 1 and companies belonging to MARKET 3.

**Table 5:** The results of the MANOVA 2 test

Size	Comparison	Organizational learning					Innovation capability			
		OL1	OL2	OL3	OL4	OL5	IC1	IC2	IC3	IC4
1	2	N	N	N	N	N	N	N	N	N
	3	N	N	N	Y***	N	Y***	N	N	N
Wilks' lambda		0.65					0.77			

Note: Significance at, \*p<0.10 \*\*p<0.05 \*\*\*p<0.01

**Analysis of MANOVA 4**

Model of MANOVA 1 is related to the influence of SECTOR on organizational learning and innovation capability levels. This study performed one-way MANOVA to examine if the levels of organizational learning and innovation capability differ across company sector. In this case, the hypothesis of the model is formulated as follow.

**Hypothesis 0**

Company sector has no effect on the levels of organizational learning and innovation capability. In other words, the mean score of organizational learning and innovation capability does not vary across company sectors.

**Hypothesis 1**

Company sector has an effect on the level of organizational learning and innovation capability. In other words, the mean score of organizational learning and innovation capability vary across company sectors.

The results of test for the model of MANOVA 4, presented in Table 6, indicate that scores in organizational learning (Wilks' lambda = 0.71) and innovation capability (Wilks' lambda = 0.75) significantly varies across sector. The further analysis indicates that the difference in organizational learning scores significantly occurs on the item of organizational memory (p<0.05) while the difference in innovation capability scores significantly occurs on the item of product innovation (p<0.05). In particular, it was found that the difference on the item of acquisition of external knowledge take place between companies belonging to sector 1 and companies belonging to sector 2. Meanwhile, the difference on the item of product innovation arises between companies belonging to sector 2 and companies belonging to Sector 3.

**Table 6:** The results of the MANOVA 4 test

Sector	Comparison	Organizational learning					Innovation capability			
		OL1	OL2	OL3	OL4	OL5	IC1	IC2	IC3	IC4
1	2	N	N	N	Y**	N	N	N	N	N
	3	N	N	N	N	N	N	N	N	N
	4	N	N	N	N	N	N	N	N	N
2	1	N	N	N	Y**	N	N	N	N	N
	3	N	N	N	N	N	Y**	N	N	N
	4	N	N	N	N	N	N	N	N	N
Wilks' lambda		0.71					0.75			

Note: Significance at,\*p<0.10\*\*p<0.05\*\*\*p<0.01

**Conclusions**

The aim of this study is to explore the organizational learning and innovation practices within small and medium scale companies. In particular, this study aims to examine the effect of four company attributes on the capability level of organizational learning and innovation. These four company attributes are company size, age, market orientation, and industry sector. The results indicate the capability level of organizational learning and innovation varies across these four company attributes.

The results indicate that scores of organizational learning and innovation capability significantly varies across company size, particularly for the item of acquisition of external knowledge and the item of process innovation. The difference of the scores mostly takes place between scores

of companies belonging to SIZE 1 and companies belonging to SIZE 4. It was also found that scores of organizational learning and innovation capability significantly varies across company age, particularly for the item of distribution of knowledge and the item of product innovation. The difference of the scores mostly takes place between scores of companies belonging to AGE 1 and companies belonging to AGE 4.

Furthermore, this study found that scores of organizational learning and innovation capability significantly varies across company market, particularly for the item of distribution of knowledge and the item of organizational innovation. The difference of the scores mostly takes place between scores of companies belonging to MARKET 1 and companies belonging to MARKET 3. Lastly, it was also

found that scores of organizational learning and innovation capability significantly varies across industry sector, particularly for the item of organizational memory and the item of product innovation. The difference of the scores mostly takes place between scores of companies belonging to Sector 1 and companies belonging to Sector 4 as well as Sector 2 and Sector 3.

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