

## **BUSINESS ENVIRONMENT, INNOVATION CAPABILITY AND BUSINESS PERFORMANCE: EMPIRICAL STUDY OF JAKARTA'S FLOUR BASED FOOD SMEs**

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### *Abstract*

This study is concerned on the relationship between innovation capability and business performance in small and medium enterprises context. The existing studies generally have analyzed the issues pertaining of innovation capability in large business or knowledge intensive firm context. By researching of the innovation capability of small and medium enterprises (SME's), it will review innovation capability in a broader and novel context. The SME's operate in a competitive environment and are not very advanced technologically. This research proposes statistical hypotheses to study these based on data samples. By employing path analysis, This research test the relationship between innovation categories and business performance. The result of our study show that government regulation directly affects to innovation capability, product and process innovation capability directly affect business performance in SME's. Finally, managerial implication will be discussed.

Keywords: innovation capability, business performance, path analysis

### *Abstrak*

Penelitian menguji hubungan antara kemampuan inovasi dengan kinerja bisnis di dalam lingkup usaha kecil menengah. Penelitian yang telah dilakukan sebelumnya hanya menganalisa faktor yang terkait dengan kemampuan inovasi pada perusahaan besar atau perusahaan yang memiliki kandungan pengetahuan yang tinggi. Dengan meneliti kemampuan inovasi dalam perusahaan kecil dan menengah, akan terlihat masalah yang terkait dengan kemampuan inovasi dalam lingkup yang lebih luas dan baru. Usaha kecil menengah (UKM) beroperasi di dalam lingkup persaingan yang ketat dan tidak menggunakan teknologi yang canggih. Dengan menggunakan analisa jalur, kami menguji hubungan antara berbagai kategori inovasi dengan kinerja bisnis. Hasil dari studi ini menunjukkan bahwa peraturan pemerintah secara langsung dapat mempengaruhi kemampuan inovasi dan kemampuan inovasi baik dalam produk maupun proses secara langsung mempengaruhi kinerja bisnis UKM. Pada bagian akhir juga didiskusikan implikasi manajerial dari penelitian ini.

Kata kunci: *innovation capability, business performance, path analysis*

## 1. Introduction

Economic development has long been an area of interest to people, communities, and the governments that serve them. Through economic development and economic growth, jobs are created, income is generated, and the quality of life is improved in both relative and absolute terms. Practice in the developed country like Indonesia has demonstrated that economic development is a prerequisite for the prosperity of the nation.

There are three significant economic trends have altered our nation's competitive position, leading to today's "new economy". First, increased globalization of the economy has hampered state efforts to at track and retains industry. The competition among nations increased, so the state effort focused to increase the competitiveness of the industry. Because small business enterprises (SME's), have a big portion in the economy, so the improvement in the small business management will be improve the economic condition as whole (Caniels and Romijn, 2005). How to make SME's survive in the global competition is the main agenda of the economic policy in many countries. Second, the rapid growth of the service sector has reduced the dependence on manufacturing. The mature economy will be dominated by the service sector, so the development of SME's have to focused to the improvement of small service business sector. The SME's has to give more attention to the service management and service sector, which was neglected in the past. Finally, technological advances have decreased the time and cost associated with communication, processing information and simultaneously led to the growth of technology industries and technology based business. Technology not exclusively privileged to the big companies anymore. The SME's activities can also use and develop the technology to improve their business process as well as increase their performance. Technologies enable the spread of innovation more widely and quickly. Technological advances during the latter part of the 20<sup>th</sup> century have been key contributors to the trends of globalization and dominance of service sector in the recent economy. In short, the most significant contribution to the change of the global economy has been innovation. For example, the increasing information technology use has led to more efficient and higher volume production of good and service around the world. The productivity increases resulting from information technology investments have played an important role in overall transition to the new economy.

In the other side, SME's face the government regulations as factors that influence their business. Several result highlight the importance of the government support for the growth and development of the SME's businesses. Barriers to develop a business are significantly and negatively correlated with business innovation. The fewer the procedures required to develop a business, the greater the number of business advancement. If government reduce to starting business and ease access to credit, rates of business innovation might grow.

As a result of these combined changes (the dynamism of business environment and government regulations), today we find ourselves in a so called new economy in which knowledge and innovation are the dominant economic forces. Knowledge intensive worker had a great contribution to the



new economy era. Globalization, service sector growth, and technological innovation are the principal components of this new economic regime.

## **2. Literature Review and Hypotheses Development**

### **2.1. SME's Innovation**

SME's play a major role in countries at all levels of economic development. They generate much employment and are widely considered to be vital for competitiveness and economic growth. In developing countries, like Indonesia, very substantial numbers of poor working people rely for their livelihood on employment in SME's. SME's become the critical backbone for the economic development. Unfortunately globalization and technology tend to give much more opportunity for the big business. Frequently the role of SME's neglected by the national economic decision maker. In fact the hyper competition in the global economy, pose the same treat to the existence of SME's, competitive pressures are increasing at the same time. SME's was in the weak position in the global competition environment. Their economics of scale and the resource is less than the large companies. Although, some scholar argues that SME's are often more fertile then larger firms in term of innovation (Afuah, 1998). Their comparative advantages over large firms in innovation are their flexibility and speed of response. SME's may enjoy greater flexibility because of the simplicity of their internal process and have the great adaptability to response with the business environmental changes. This flexibility allowing dispersed bits of knowledge are combined, new knowledge that no one had previously anticipated may be created (Tolstoy, 2009). But in reality, only a small segment of the SME's sector is capable of making full use of new business and coping effectively with threats without assistance. This situation reveals in the need to suggest or find more efficient management processes that allow SME's to achieve a better performance.

In the era of hyper competition, restructuring, lowering costs and enhancing product or service quality are no longer sufficient. Porter (1998) argued that companies must be able to create and commercialize a stream of new product and processes that extend the technology frontier, while at the same time keeping a step or two ahead of their rivals.

Innovation has been a dominant factor in maintaining worldwide competitiveness (Martin et al., 2009). One of the key sources of competitive advantage is the ability of the company to innovate. Some people argue that we are living in the age of innovation. The ability to innovate considered a vital factor to the success in the global competition economy. From a micro point of view, innovation is management discipline: it focuses on the organization's mission, searches for unique opportunities, determines whether they fit the organization's strategic direction, defines the measures for success, and continually reassesses opportunities (Gaynor, 2002). But, in fact innovation has a multi facet, a multidimensional form of innovation, including technological, marketing, administrative and strategic innovation. The type and phase of innovation, especially in the SME's should be on the research agenda, because each other have different characteristics. There are an increasing number of studies on the main competitive forces of SME's, one of them is innovation.

(Brown and Eisenhardt in Lin and Chen, 2007) found that the majority research in the innovation domain focuses on product innovation in a manufacturing context. It is not weird because the innovation in product is more tangible and easy to measure than in the other form of innovation. But along with the complexity of business process, this uni-dimensional approach is not appropriate anymore (Wright et al., 2005). From an organizational perspective, real innovation success resides in the marketplace. Not in the end product, but in the process to increase customer value that use the product. And also, in process to transform a good idea and good product into sales revenue and profit. In addition, a company must also strive to institutionalize innovation in the long term. They have to establishing an appropriate culture, structure, incentives, systems and processes that facilitate innovation to occur as part of daily business (Lin and Chen 2007). This is the strategic side of innovation in the company. To make innovation as a corporate culture in the company that guarantees the competitive advantage in the long term. To obtain a corporate culture innovation firm have to invest more in intangible resources, but it is quite problematic because usually SME's didn't have enough economic of scale and resources to support their activities. To solve this problem, with the great flexibility and adaptability, SME's form an alliances and cooperation with the others SME's to obtain the advantages of being large and, at the same time, keep the advantages of SME's in term of specializations, reduction in costs and flexibility (Pil and Holweg, 2003).

According to resource based view theory, the internal resources and capabilities of the firm are the main element to reach a competitive advantage in the context of the competitive environment. In this way, the firms that devote their internal forces (in this context is the ability to innovate) has the ability to exploit the opportunities of the environment and to neutralize threats, while avoiding weak points, are more liable to obtain competitive advantages than those that do not the same. The resource based view approach based of competitive advantages on two concept: resources and capabilities. Resources are those intangible and tangible assets linked to the firm in a semi permanent way, whereas capabilities are related to the way of accomplishing different activities, depending on the availability of resources (Grant, 1996).

This research constructs one hypothesis and two sub-hypotheses regarding the SME's innovation. Those hypotheses are:

- H<sub>1</sub>** : Business environment directly affects innovation capability.
- H<sub>1a</sub>** : Dynamism directly affects innovation capability.
- H<sub>1b</sub>** : Government regulation directly affects innovation capability.

## **2.2. Innovation and Performance**

There is no doubt that the 21<sup>st</sup> century will be credited as the century of innovation. But, the empirical studies, declare that the relationship between innovation and performance is still complicated. Some scholar argues that innovation had a positive impact on firm's performance (Wolff and Pett, 2006, Sanchez and Marin, 2005)) but the other does not agree with that matter. Some author (Mick and Fournier, 1998) note that increasing levels of innovation may



create hesitancy in a consumer, in terms of innovation adaptation, due to fear of buying products that may quickly be supersede by lower cost, higher performing versions, or for fear of adopting unproven technology. The higher innovation increases the rejection by the consumer of the product, because they are not familiar with the product. (Damanpour in Lin and Chen, 2007) argued that the association between innovation and firm performance depends on the performance measurement and the characteristics of a given organization.

The blurring relation between innovation and performance make confusion. To clearing the confusion, innovation activities are generally categorized as either incremental or radical. The distinction between these two different types illustrates how organizations approach innovation in different ways. A cumulative series of minor changes or introducing something similar to previous organizational practices is called an incremental or routine innovation, whereas an abrupt major change or doing something markedly different from what the organization had done before is called a radical innovation. Although there has been debate over which type of innovating activity is more important and effective, the more astute managers understand the necessity for both. But in the long term radical innovation is positively related to organizational performance of SME's, while in the short term incremental innovation is positively related to organizational performance of SME's.

Lin and Chen (2007) provides another piece of evidence that innovation does not necessarily result in better company sales (company performance). This empirical result based on the bottom line criterion of sales clearly indicated that innovation is not a panacea. Companies that have fantasies about innovation need to face the reality that when all is said and done, the key may be a system wide dedication to hard, focused, and purposeful work achieved through processes and strategic innovation, not only focuses in the product innovation.

Competing in an international area challenges the company to become more innovative, because it is the key to stay competitive nowadays. Going global is a daunting task for some SME's that generally lack sufficient manpower, financial resources, language ability and international perspective. Besides, a majority of the SME's are family enterprises which generally choose to stay small and staffed by family members only. SME's must find another ways to increase the capability to innovate in the environment that has limited resources. With alliances, SME's should be able to reach an economic scale as a group and maintain internally autonomous as well. The advance of technology, especially information technology, make easier to find the alliances partner around the world.

The sampling frame for research were flour based SME's. This kind of business is dominated the SME's sector in Indonesia. The food small industry in Indonesia usually involves the food based flour. Although this kind of industry had big segment in the food market in Indonesia, the raw material of this industry still imported. As a tropical countries Indonesia couldn't produce the wheat agriculture. The regulations about the import of this kind of products have been great impact to the SME's in this industry. So to anticipate of this kind of regulation the SME's must make an innovation in their process and the

product based floor.

This research develops one main hypothesis and three sub-hypotheses for innovation and performance issues. Those hypotheses are:

**H<sub>2</sub>** : Innovation capability directly affects business performance.

**H<sub>2a</sub>** : Product innovation directly affects business performance.

**H<sub>2b</sub>** : Process innovation directly affects business performance.

**H<sub>2c</sub>** : Management innovation directly affects business performance.

### 3. Research Method

#### 3.1. Data Collection

The sampling frame for the research were flour based SME's listed in Atma Jaya SME's Directory. The data sources were reviewed and screened to develop a sampling selection. Firms that provide relevant information were identified as sample members. Because of the diversity of the production capacity, the selected firms were categorized into three groups. The first group is named the big group. They consume wheat flour more than 750 bags/ month. The second group is the medium one. The firms in this group need the flour in the range 250-750 bags/month. The last is the small group. They consume the flour less than 250 bags/month. The small one is the dominant player in the business. In order to achieve the representativeness of the sampling frame, this research employed the proportional stratified random sampling. The formula of the equation is:

$$n = (N \sum NhSh^2) / \{N^2 (d^2/Z^2) + (\sum NhSh^2)\}$$

whereas the sample size for each category is :

$$nh = \{(NhSh)/(\sum NhSh^2)\} \times n$$

N = the number of sampling frame

Nh = the number of SME's per category

1 = the small group

2 = the medium group

3 = the big group

Sh = varians of each category

D = level of significance

Z = the normal distribution score (Zscore)

For the level of significant ( $\alpha$ ) = 5%, then Z = 1,96

The numbers of the firms in the sampling frame were 346 firms. They consisted of 137 firms in the small group, 113 firms in the medium one, 96 firms in the big one. By employing the proportional stratified random sampling, this research had 146 firms. After we subtracted with the 19 non response firms, this research had 118 firms that consisted of 55 firms in the small group, 42 firms in the medium one, and 21 in the big one.

The data collection proceeded in Oct 2005. It consisted of two phases. The first phase was a pre test, which randomly selected one firms from each of the three groups. The second phase was the questionnaire distribution. The questionnaire was pre tested by conducting in depth interview with the entrepreneurs as key informants. The modification of the wording and the



structure of the question were introduced. The questionnaire was again pretested to 3 business subject lecturers from Atma Jaya University. Based on the findings, adaptations were applied and then questionnaire was finalized.

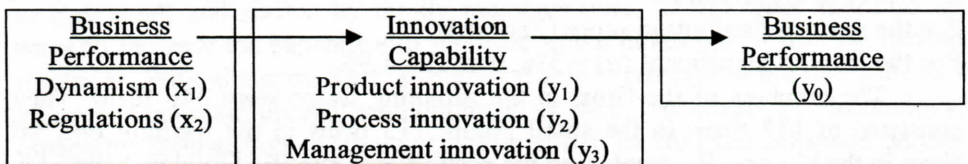
### 3.2. Research Variables

This research developed a three part self reporting questionnaire. The first part of the questionnaire was developed to ask for the business environment. This research adapted business environment construct developed by Li (2000). Business environment was measured with a five-point Likert scale (1=very slow to 5=very fast). In the second part of the questionnaire, this research adapted innovation capability construct. It developed by Tsai et al.,(2001).

According to Tsai et al.,(2001), innovation capability consists of product innovation, process innovation and management innovation. Respondents were asked to elaborate on the changes were introduce and specify the three types of innovation capability that the firm had applied in the last 3 years. This research used a five-point Likert scale (1=totally disagree to 5=totally agree) to measure the constructs. The third part of the questionnaire asked for the respondents to assess their business performance. The measurement of business performance used a five point Likert scale (1=declining to 5=growth). Business performance can be measured in any number of ways, ranging from objective measures to subjective assessment (Delmar in Freel and Robson, 2004). Since the lack of the SMEs business performance data, this research used subjective assessment to measure in this research.

### 4. Result and Discussions

The aim of this research is to confirm the relationship among business environment, innovation capability and business performance. A path analysis is used to test theoretical model that specify causal relationships between a numbers of observed variables. Path analysis is an appropriate tool for measuring the relationships between the business environment and innovation capability, and the relationship between innovation capability and business performance. This research proposed model for the business environment, innovation capability and business performance.



**Figure 1. A Conceptual Model among Business Environment, Innovation Capability and Business Performance**

Figure 1 actually represent the following equations :

$$Y_0 = 1301y_1 + 1302y_2 + 1303y_3 + \zeta_0$$

$$Y_1 = V11x_1 + V12x_2 + \zeta_1$$

$$Y_2 = V21x_1 + V22x_2 + \zeta_2$$

$$Y_3 = V31x_1 + V32x_2 + \zeta_3$$

**Table 1. The Result of Path Analysis**

Path	Coefficient	
Product innovation-business performance	0.34	**
Process innovation-business performance	0.28	**
Regulation-product innovation	0.31	***

\*\*\*, \*\* denote significance at 1% and 5% levels respectively.

According to Table 1, this research know that regulation directly affected the product innovation. Meanwhile, the product innovation and process innovation directly affected the business performance. In the model refining process, the path link: dynamism-process innovation; regulation-process innovation; dynamism-management innovation; regulation-management innovation; and management innovation-business performance were excluded due to statistically insignificant relationship.

#### **4.1. Business Environment and Innovation Capability**

The result from the path model, this research exclude the path link: dynamism-product innovation, dynamism-process innovation, dynamism-management innovation, government regulation-process innovation and government regulation-management innovation. They were excluded due to statistically insignificant.

The effect of the business environment on innovation capability is mattered. Innovation have recently seen as a way in which firms can survive and benefit from the changes in their environment. Innovation capability is affected by identifiable environmental factors. According to our research, government regulations had a significant impact to stimulate and foster innovation capability. Regulatory features of products affect a firm's capacity to innovate. Some evidences suggested that some government regulations have lead to the changing of operation management of SME's and stimulating new product developments. For instance, the increasing of oil price as a part of dynamism of environment has spurred the SME's to launch a more efficient and market friendly new product. The restriction of additive substances to food product application as a part of government regulation had the firms find a new way to preserve the product. New product is developed based on the dynamic of government regulations. These evidences indicate that SME's still think that the government role is more dominant driver for their business, including in influencing innovation capability building.

#### **4.2. Innovation Capability and Business Environment**

The results of the study indicate significant relationship between innovation capability and business performance. The major contribution to business performance comes from product and process innovation capability. Product innovation recorded higher contribution than process innovation.

It is true that firms need to develop new products to gain competitive advantage. Product innovation has been identified as a strategic tool crucial to survival of firms. The absence of the management innovation capability lead to business performance is only confirming the pervasiveness of poor management



skills. Innovation needs an eclectic base of managerial competency. Poor planning, lack of financial evaluation, lack of functional expertise and discontinuity of management staffs are examples of the management deficiency faced by the firms.

## 5. Conclusion

The findings of this research have shown that in response to the uncertainty business environment, the SME's have anticipated with the innovation capability development. The government regulations have been a dominant driver to stimulate innovation capability development. Then, it is suggested that the changing business environment should not be avoided, but remains necessary to innovation capability development. While it could have negative effects on the efficiency of innovation activity, it remains the critical input in the process of knowledge creation. The effectiveness of the outcome of innovation does not necessary imply to the business performance. That means that product, process, and management innovation may not always lead to enhance business performance. This is a dilemma for SME's in which developed innovation capability. The results of the study should lead for further research into a number of areas. It is important to know whether or not the results of this study can be generalized and whether theories on innovation capability in SME's can be developed.

This research recognizes that this research has several limitations. This research limited to only the Jakarta's flour based food SME's. Jakarta as a metropolitan city in Indonesia may be couldn't compare with the other city in Indonesia. The other city maybe more rural and the initiative to innovate mat limited. The case in the flour based food SME's may be couldn't compare with the other kind of SME's that has different characteristic. The other limitation is this study use the survey method to see the impact of business environment and innovation capability on business performance. The innovation is a process. The time series studies maybe is more appropriate to measure the impact of innovation capability on the business performance.

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