

The Effect of Innovation on Firm Performance and Competitive Advantage

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Abstract

This study aimed to analyze the effect of innovation on Firm Performance mediated by competitive advantage. The sample is Small and Medium Enterprises (SMEs) in Indonesia. Data collection is done by using a mail questionnaire survey, with the number of samples are 164 respondents. The results show that innovation has a positive effect on competitive advantage. An innovation strategy can improve the bargaining position of more companies competing in the market segment of SMEs in Indonesia. This study proves that innovation strategy of SMEs in Indonesia are in the ability to make better products, in the production process by using advances in technology, as well as in the technology development and maintainance. SMEs have different competitions in the excellence of expertise and resources. Further study shows that positional advantage in the market is based on the existence of a superior customer value or achievement of lower relative costs and generate market share and superior performance.

Keywords: Competitive Advantage, Firm Performance, Innovation

1. Introduction

Innovation arises because of the high competition. In the increasing fierce level of competition and technological advances that can not be dammed, company products will grow to a point, where these products will be difficult to distinguish between one another. Companies are required to excel, one way is to innovate. Innovation will be able to change the organization position in the market. Innovation is one of the most important factors in gaining a competitive advantage in global markets.

Innovation is important to create something different with other competitors. Schumpeter (1942) emphasized the importance of innovation. Practitioners and academics have looked towards innovation as a significant managerial issue (Litz and Kleysen, 2001). From a resource-based perspective, firms have incentives to invest significant resources to maintain and build capabilities for innovation.

Corporate excellence in every competition is a major concern of management. Innovation can also be used as a strategy to achieve competitive advantage. The main purpose of the product innovation is to meet the market demand so that product innovation can be used as a competitive advantage for the company. Boredom of customers to a product is a thing that must be observed by the company. Customers generally want innovative products in accordance with their wishes.

For many companies, success in product innovation means the company have been a step further than other competitors. This requires companies to recognize ingenuity customer tastes so innovation is consistent with the wishes of its customers. Thus, product innovation should be planned rigorously and carried out carefully. Product innovation is expected to have an impact on the increase of competition and the company's position for the company performance improvement (Kandampully and Duddy, 1999).

The high level of competition is felt not only by big companies, but also experienced by small and medium enterprises (SMEs) in Indonesia. The changes that occur in the SMEs are the increase in the level of industry competition, the rising of raw material prices, and the decline of exports abroad. The pattern of the various forms of competition makes demands to innovate is increasingly becoming very important.

Domestic market share threatened by the increasing number of competitors in the small industry. The level of competition is getting tighter in the SMEs due to reduced market share in the country that requires the companies in this industry to implement strategies that are relevant to the company and the environmental conditions are constantly changing. The company must still strive to maintain its survival. Progress in small industrial enterprises are entirely dependent on the ability of the company to create and foster competitiveness that can adapt quickly to changes. The growing competitiveness is an important target of concern in order to achieve a high performance company anyway.

This study would analyze the effect of product innovations that can improve competitive advantage. The goal and ultimate target was an increase of the firm performance. Kandampully and Duddy (1999) found that innovation was an important factor for achieving competitive advantage. While the research of Burden and Proctor (2000) found that a focus on the customer is also an important factor for creating competitive advantage. The high competitive advantage of the company over a variety of product innovation can certainly be used as a reference in enhancing the performance of the company.

2. Theoretical Frameworks

Firm Performance

Different studies have proposed different viewpoints on the measurement of a firm performance. In general, financial measures are regarded as a significant measurement for the firm performance. A number of empirical studies that measure organizational performance have been done, e.g., Hill & Snell (1988) and Holderness & Sheehan (1988).

Company as one of the organizations have specific goals to be achieved in an effort to meet the interests of its members. Success in achieving the company's goals is an achievement management. Performance appraisal or performance of a company is measured because it can be used as a basis for decision making both external and internal. According to Simanjuntak (2005), the level of achievement of the performance is the result of the implementation of specific tasks in realizing the goals, objectives, mission and vision of an organization, as well as the level of achievement of results in order to reach the company goals. According to Gibson, et al. (2003) performance (job performance) is the result of work related to the goals of the organization, efficiency and effectiveness of other performance. Performance can be interpreted also as a result of work that is concrete, observable and measurable.

Based on the above explanation, it can be concluded that the performance is the achievement of the objectives of a particular activity or work to achieve the objectives of the company as measured by the standard. Corporate performance assessment aims to determine the effectiveness of the company's operations. Performance is the continuous monitoring and reporting of program completion, particularly progress towards the goals set previously.

Competitive Advantage

The concept of competitive advantage are developed from generic strategies proposed by Porter (1985). The things that can indicate a variable of competitive advantage is imitability, durability, and ease equal. Competitive advantage is the heart of the company's performance in a competitive market. The advantages of the company are basically grown from the value or benefits that can be created by companies for the buyers. When the company is able to create excellence through one of the three generic strategies, it will get the competitive advantage (Aaker, 1989).

For improving the company's performance, competitive advantage is viewed as something that can be used in or as a corporate strategy. Competitive advantage can be understood by looking at the company as a whole. It comes from many different activities undertaken by the company in the design, manufacture, market, delivery and supporting the sale (Porter, 1985).

Thus, the competitive advantage is a position that still working as a beat competitor organizations. Approach resources based (RB) view of economic activity or business of the utilization of resources and capabilities, not according to the markets served. Utilization of resources and capabilities in order to build competitiveness efforts directed at capturing a variety of opportunities to overcome various threats in the competition. From this condition, a strategy is constructed to inhibit competitors to be difficult to replicate.

Innovation

Innovation refers to the combination of the innovations that made by the company over time. Zahra and Das (1993) says that measurement does not consider innovation in other business-related applications, such as information technology and innovative organizational design. The research focuses on product and process innovation. A focus that is consistent with the results of a survey of production managers concluded that both the process and product innovation are the company's business strategy (Schroeder *et al.*, 1986; Zahra and Das, 1993). Furthermore, Anderson *et al.* (1989) showed that there are four types of innovation (Innovation 4Ps):

- 1) Product Innovation. It is the change of the product or service as a request to the company. Product innovation resulted in the creation and introduction of radical product innovations or modifications (Zahra and Das, 1993). Product innovation can be risky. They stated that the definition of a weak product requirements, technological uncertainty, lack of supporting senior management, lack of resources, weak management and project implementation can hinder efforts to develop new production.
- 2) Process Innovation, happened on the way in which products are created and delivered. Process innovation leads to new methods of operation by producing new product, producing new technologies or develop the ability of people in the company (Leonard-Barton 1991).
- 3) Innovation Paradigm or Internal Source of Innovation - is a fundamental change of the internal R&D efforts to produce a product and process innovation.
- 4) Positioning Innovation or external sources of innovation. It is the change in the context of the purchase, licensing, approval, procurement with other companies, joint-ventures with suppliers, customers, and other companies.

3. Hypotheses

Based on the research objectives, the research model is described as follows:

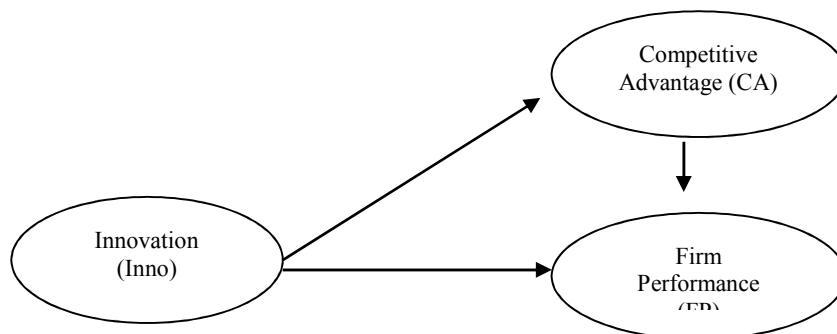


Figure 1. Research Model

Innovation and Competitive Advantage

Sometimes among the common products, in terms of form or combination of quality, the similarity in appearance of the products of competitors are the driving factors behind product innovation. Competitor's products usually appear without change significantly even tend to be static. It was the forerunner of the desire to perform the difference. These circumstances can be a profitable thing, as competition arises with the emergence of a competitor's product can be overcome with innovative products. Product innovations can be done by changing the shape, the taste, or the quality of the primary functions of the product.

Innovations that include product innovation makes a product will look different. Product innovation is something advancement of functional product that can take the product one step ahead than the competitors' products. Development of new products that are more effective and strategic determine the success and often the survival of a company. But this is not an easy job. New product development requires effort, time and capabilities, including the risks and costs of failure. Song and Parry (1997) explain that the competitive advantage of a product is one of the determinants of success of new products (up to a product innovation must have advantages compared with other products). This indicates the presence of product innovation, the product is already in one step rather than other products.

Innovation is inherently a highly cross-functional activity that, when it works well, creates a constructive tension between competing objectives of development cost, product value, performance, quality, and time to market. Product development touches every part of the company. Innovation is thought to provide organizations with a means of creating a sustainable competitive advantage that is imperative in today's turbulent environment. Innovation is positioned as a driver of economic growth.

Different scholars have stated that innovation is a mechanism by which organizations can draw upon core competencies and transition these into performance outcomes critical for success (Reed and DeFillippi, 1991). While the importance of this domain has not gone unnoticed, there seems to be a lack of clarity on the drivers and performance implications of innovation. To further illustrate this point, scholars have pointed out that past research in this area has primarily been inconclusive, inconsistent, and lacking explanatory power (Wolfe, 1994). Based on the discussion above, we specify the following hypothesis.

H₁ : *Higher innovation positively affects the competitive advantage*

Product Innovation and Firm Performance

Companies are required to be able to use existing resources to progress the company. The company also seeks to use its resources to be able to innovate. Innovation can do various kinds, the most prominent is the product innovation in an effort to maintain market competition. Member organization companies are trying to learn for the betterment of the company. Han *et al.* (1998) says that innovation has a positive and significant effect on firm performance. In the long run will make the companies to conduct innovation to grow, especially in terms of product sales, due to product innovation will drive changes in consumer tastes.

Innovate in terms of product development will describe a creativity that is good for the company. As Amabile (1996) argued that innovation as the successful implementation of creative ideas within the company. Innovation is a corporate mechanism to adapt in a dynamic environment. Therefore, the company is required to create assessments and ideas - new ideas and offer innovative products. Thus the question that arises in this research is how the effect of innovation on competitive advantage to achieve the firm performance. Based on the discussion above, we specify the following hypothesis.

H₂ : *The higher innovation, the more effective the firm performance.*

Competitive Advantage and Firm Performance

Firm performance is one of the indicators required by the owner to the management. Performance is a measure of the company's achievements in the operation process of the activities of the company, both in terms of finance, production and sales. However, to achieve good performance, the company must have a high bargaining power to competitors. It is important in maintaining the levels of productivity and sales.

Research by Li (1998) managed to find the positive influence of the competitive advantage with performance measured by sales volume, profit levels, market share, and return on investment. Competitive advantage can be obtained from the company's ability to process and utilize the resource and its capital. Competitive advantage will gradually push the company's achievements and performance of the company in the future. In the study of Maa (2000), the competitive advantage and the organizational consequences are two special Competitive Advantage and Organizational Performance terms. But there is an apparently complex connection.

General work has shown a considerable association between these two variables. (Morgan *et al.*, 2004) also supported this study. In the study of Rose *et al.* (2010), it was inspected that the organizational edge from the resource based view is as vital as it can be. It is used as conceptual guideline for business organization for enhancing their differential advantage position.

The Performance via appliance and manipulation of known internal resources of companies are also increased by using competencies. They put in the body of knowledge by using experimental approach and Resource Based View. The firm's excellence can be enhanced by using these qualities. From the historical data of Chandler (1962) and Learned *et al.* (1965), they made the hypothesis of stable differential edge to make clear the constant better-quality performance of leading firms.

They focus mainly on companies such as General Motors, DuPont, Standard Oil and IBM. In the early 1980s, large work of Porter (1985) gave us the hypothesis of sustainable competency that was strongly established as the prime account of sustained superior performance. Firms gain monopoly by capturing high market position in outstanding industries (Rose *et al.*, 2010). Based on the discussion above, we specify the following hypothesis.
 H_3 : *The higher competitive advantage, the more effective the firm performance.*

4. Empirical Methodology

Small and medium enterprises (SMEs) are believed to have an important and strategic role, in terms of several aspects. First, a large number of industrial and economic contained in any sector. Second, a large potential in employment. The study population are manufacturing SMEs in Indonesia. The unit of analysis is the study of manufacturing SMEs in Indonesia.

The main questionnaire respondents are owners or managers, because the success of a company is influenced by the participation of the owners/ managers themselves. From the 548 questionnaires sent by e-mail, only 179 were accepted and only 164 that could be processed.

The analysis tool is Structural Equation by using Partial Least Square approach. PLS is a structural equation model (SEM) based on components or variance. PLS is an alternative approach that shifts from covariance-based SEM approach to variance based.

Table 1. Measurement of Variables

Variables	Definition	Indicators
Firm Performance	Measures of success and development of SMEs. Measurement of return on investment, growth, volume, profit and labor on the company's common for enterprise performance (Jeaning and Beaver, 1997).	1) Productivity 2) Operational Reliability 3) Sales Growth 4) Effectiveness 5) Efficient
Competitive Advantage	Position units developed by the company through a pattern of how the company using its resources and create advantages over its competitors (Bharadwaj <i>et al.</i> , 1993)	1) Resources are worth 2) Different 3) Not easily imitated 4) Not easy to be replaced
Innovation	In connection with the Company's response strategy in adopting innovations (Hadjimanolis & Dickson, 2000)	1) Product Innovation 2) Innovation Process 3) Innovation Paradigm 4) Sources of Innovation

PLS is a powerful analytical method (Wold, 1985) because it is not based on many assumptions. For example, the data must not be normally distributed, the sample does not have to be huge. It can be used to confirm the theory. PLS can also be used to explain the relationship between the latent variables. PLS can simultaneously analyze constructs formed with reflexive and formative indicators. It can not be done by a covariance-based SEM since the model would be unidentified.

5. Analysis and Result

Validity and Reliability

Each latent variable were tested for internal consistency validity using Cronbach's alpha and construct reliability. In line with what is listed in Table 2, the coefficient alpha was FP (0,818), CA (0,821), and Ino (0,883). All construct reliability is greater than 0,8, is above the limit of 0,60 proposed by Fornell and Larcker (1981). Overall, the results suggest a high internal validity indicator measurement; therefore, the reliability of each constructs are valid.

Table 2. Validity and Reliability

Construct	Cronbach's Alpha
FP	0.818
CA	0.821
Ino	0.883

Structural Equation Analysis

In the PLS analysis, there are two things. The first, outer assess measurement models is an assessment of the reliability and validity of research variables. There are several criteria to assess the outer models: the convergent validity, discriminant validity and composite reliability. Second, assessing the inner workings of the model or structural models, testing structural inner models or models is made to see the relationship between the constructs, significance and value of R-square of the model study. The results of the first test with the PLS analysis generates outer loading as follows:

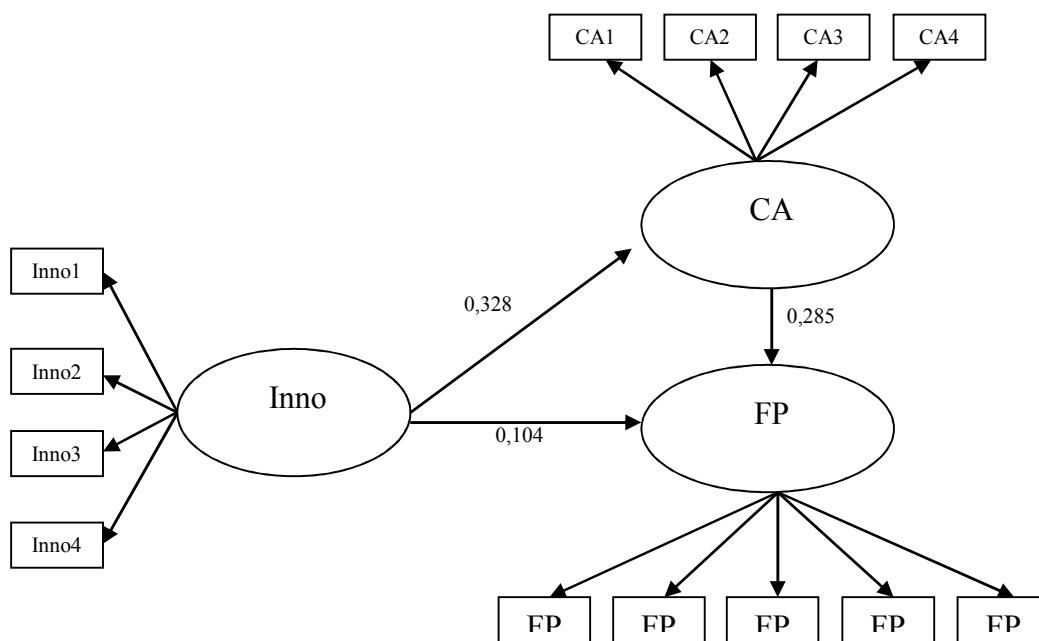


Figure 2. Results of Outer Model

Testing of Measurement Model

Outer model or measurement model is an assessment of the reliability and validity of the study variables. There are three criteria for assessing the outer models: the convergent validity, discriminant validity and composite reliability, the following table shows the results of testing the reliability and validity for each variable. Discriminant validity of the measurement models with reflexive indicator can be seen from the correlations between the scores of construct and the indicator scores.

Table 3. Results of Testing the Reliability and Validity

Variables	AVE	Composite Reliability	R Square
FP	0.819	0.922	0.428
CA	0.924	0.871	0.323
Inno	0.965	0.870	–

Source: Analysis Output SmartPLS

Variables will be considered reliable if the value of the correlation is above 0.50 (Ghozali, 2006). Results

of testing the outer loadings in the table above shows that all the loading factor above 0.50 and can be stated that all the variables are reliable and meet the rules of research validity because AVE entire outer loadings were above 0.50.

Testing of Inner Model

Testing inner models or structural models is to see the relationship between the constructs, significance and value of the R-square of the model study. Here, it is illustrated the value of the relationship between the constructs regression weight, significance, and value of R-square of the model study.

Based on the analysis result on table 4, obtained value of R-square (R^2) of 0,323 for Innovation influence on competitive advantage (CA) and 0,428 for the effect of innovation and competitive advantage (CA) to Firm Performance (FP). Based on the value of R square of 0,323, it can be interpreted that innovation can explain the variance of changes in competitive advantage (CA) of 32,3 percent and the influence of Innovation and competitive advantage (CA) to Firm Performance (FP) about 42.8%.

Table 4. The Value of Regression Weight Relationships Between Constructs, The Value of Statistical Significance (T-Statistic) and R-Square

Causalities Variable	Inner Model R-Square (R^2)	Coefficient	T-Statistic
Ino →CA	0.323	0.328**)	3.083
Ino →FP	0.428	0.104**)	2.548
CA →FP	0.428	0.285	0.486
Annotation: ***) Significance on 0.01 **) Significance on 0.05 *) Significance on 0.10 Ino = Innovation CA = Competitive Advantage EP = Firm Performance			

Source: Analysis Output SmartPLS

6. Discussions and Findings

The first hypothesis states that innovation has a positive effect on competitive advantage (CA) can be supported. It means that an innovation strategy can improve the bargaining position of more companies to compete in the market segment of SMEs in Indonesia. The results of the statistical test showed a regression coefficient of 0.328 with t-statistic 3.083, the PLS thresholds t-statistic is 1.960 (Ghozali, 2006). The results of this research is in line with the research of Amabile (1997), which argued that innovation as the successful implementation of creative ideas within the company. Innovation is a corporate mechanism to adapt in a dynamic environment. Therefore the company is able to create a demand for appraisal and new ideas and offer innovative products. Innovation has positive and significant effect on firm performance.

Good product is a high quality product and always keeps pacing with the changing of consumer tastes. It means that if we want to have the products with high quality, it must innovate. Morgan *et al.* (2004) measured product competency in terms of higher product quality, packaging, design and style. Similar research illustrated that there is a significant association of services based advantage on the organizational consequences. Companies gained benefits from services as competitive edge contrast to their rivals. For example more product elasticity, convenience, delivery speed, consistency and technological support have verified to achieve relatively better performance.

The second hypothesis states that innovation has a positive effect on firm performance (FP) can also be supported. It means that good practice innovation strategy of product innovation and process innovation SMEs improve our performance in creative ways. The results of the statistical test showed a regression coefficient of 0.104 with t-statistic value of 2.548. This study proves that innovation strategy that is owned by SMEs in Indonesia lies in the ability to make better products, the production process by using advances in technology, develop and maintain its technology. This study proves that SMEs already have a tendency to increase the performance of company with a good way to invest as a whole means preusan by building a factory representative, as well as technology investment and investment in human resources. SMEs are already aware of the shortcomings of Indonesia of SMEs neighboring countries, thus slowly fixing ability in all areas.

The third hypothesis which states that competitive advantage (CA) has a positive effect on firm performance (FP) can also be supported. These results contradict the research results of Rose *et al.* (2010). They inspected that the organizational edge from the resource based view is as vital as it can be. It is used as conceptual guideline for business organization for enhancing their differential advantage position. The performance via appliance and manipulation of known internal resources of companies are also increased by using competencies. They put in the body of knowledge by using experimental approach and Resource Based View. The firm's excellence can be enhanced by using these qualities.

Competitive advantage by Day and Wensley (1988) interpreted different competitions in the excellence of expertise and resources. Wide study showed that positional advantage in the market is based on the existence of a superior customer value or achievement of lower relative costs and generation of market share and profitable performance.

7. Conclusion and Limitations

The results show that innovation has a positive effect on competitive advantage (CA). An innovation strategy can improve the bargaining position of more companies competing in the market segment of SMEs in Indonesia. This study proves that innovation strategy that is owned by SMEs in Indonesia lies in the ability to make better products, and the production process by using advances in technology, as well as technology development and maintainance. SMEs have different competitions in the excellence of expertise and resources.

SMEs already have a tendency to increase the performance of company with a good way to invest as a whole means by building a factory representative, as well as technology investment and investment in human resources. Wide study showed that positional advantage in the market is based on the existence of a superior customer value or achievement of lower relative costs and the generation of market share and superior performance.

The limitation of this study is the sampling only used the SMEs, which is a low level of generalizations. In terms of sampling, it is still very small to consider 164 samples of SMEs, compared to the numbers of SMEs in Indonesia.

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