

## Innovation, Current And Future Firms Performance (Study On Manufacturing Firms Listed On Indonesia Stock Exchange 2016-2018)

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**ABSTRACT** Globalization in the industrial economy and the current global competitive nature are some of the main forces that need to be faced by firms to survive. Based on this statement, firms should have good strategies to gain a competitive advantage over their competitors to compete on a global scale. One of the strategies is an innovation strategy consisting of product innovation and organizational innovation. Therefore, this study aims to determine the effect of product innovation and organizational innovation on firm performance. The data used in this study are the financial statements of manufacturing firms listed on the Indonesia Stock Exchange (IDX) year 2016 to 2018. The data were collected using a purposive sampling method. Then, the data were analyzed using multiple linear regression analysis. The findings showed that product innovation and organizational innovation have a positive and significant effect on firm performance.

**Keywords:** product innovation, organizational innovation, firm performance.

### 1. INTRODUCTION

Globalization in the economic field has brought changes in the business environment that provide opportunities for every firm to enter into a wider business environment. Firms must face global competition if they want to survive, and they must have a competitive advantage to compete in the global market [1]. Various firms' strategic policies are carried out to survive and maintain their business continuity. The innovation strategy is a strategic policy that is widely used by firms to face business competition.

The innovation strategy is a strategy that is directed at the process of discovering, developing, and implementing new ideas related to process, technology, and product development [2]. Sustainable innovation can provide an alternative for firms in determining their competitive strategy priorities, not only prioritizing cost leadership, but

also on quality leadership delivery, and responsiveness [3].

According to the OECD Oslo Manual [4], innovation is divided into four types, namely product innovation, process innovation, marketing innovation, and organizational innovation. Porter [1] added that the innovation strategy will help firms operate at a competitive level to improve long-term firm performance.

Good innovation will produce quality products or services at low costs. Good management of innovation will eventually affect firm performance. A new product created from product innovation can increase the profitability of the firms and generally increase people's curiosity that affects the sales thus increasing the market share. The existence of a high market share accompanied by high price determination for new products will increase the firm profits [5]. Therefore, the creation of a good

product, process, and organizational innovation will determine the firm's future performance [6].

Research conducted by Atalay et al. [7] provided empirical evidence that product innovation has a positive effect on firm performance. This is contrary to research conducted by Saraswati and Atmini [8] which provided empirical evidence that product innovation does not directly benefit the firm.

The creation of new products must be accompanied by effective and efficient use and utilization of technology. Process innovation directs how firm management can take advantage of knowledge and technology that they have as an effort to reduce costs incurred in the production process which will result in improving firm performance.

With the development of new products accompanied by effective and efficient use of technology, organizational innovation must be carried out to improve firm performance by reducing administrative costs and transaction costs, as well as increasing job satisfaction to increase labor productivity or reduce inventory costs.

Research conducted by Lin and Chien [9] provided empirical evidence that organizational innovation has a positive effect on firm performance but contradicts research conducted by Gunday et al. (2011) which provided empirical evidence that firms who carried out organizational innovation do not effect firm performance. With the existence of a research gap or inconsistency of results in previous research, it is important to re-examine the effect of product innovation and organizational innovation on firm performance.

## 2. THEORETICAL REVIEW

### 2.1. Competitive Advantage Theory

The concept of competitive advantage according to Hoffman [10] is a form of strategy to assist the firm in maintaining its survival. Competitive advantage comes from the many different activities that have been done by the firm to design, produce, deliver, and support their products. Therefore, a firm has a good position in competitive advantage due to the comparative advantage of its resources to produce superior value at lower costs [11].

Competitive advantage according to Day and Wensley (1988) in Bagas [12] is defined as different competition in terms of excellence in expertise and resources. In their research, they proved that the firm's competitive advantage is influenced by firm performance. This broadly indicates that a firm that wants to gain competitive advantage must have better expertise than its competitors.

This theoretical framework explains that a firm must be able to make optimal use of its resources in facing

competition. The firm should be able to develop innovation by developing or creating a product that is different from its competitors. The innovation developed by the firm is expected not only to make a different product but also to create cost efficiency from the innovation that has been made. The innovation implemented by the firm aims to support the firm's performance to increase the firm competitive advantage. This opinion is supported by Ferdinand which stated that in a competitive market, the firm's ability to produce performance, especially financial performance, is highly dependent on the degree of its competitive advantage. To maintain its existence, the firm competitive advantage must also be sustainable since the firm wants a going concern.

### 2.2. Innovation

Innovation is the implementation of a new or significantly improved product (good or service), process, new marketing method, or new organizational method in business practice, workplace organization, or external relations [4]. These innovation activities include all scientific, technological, organizational, financial, and commercial measures intended for the implementation of innovation.

Datta, et al., [13] stated that the strategy is important for the firm when the firm can implement innovation efficiently. Innovation is also often described as the source of life of an organization that determines the results of a firm. Innovation in strategy implementation plays a role in achieving a sustainable competitive advantage in global competition [14].

According to the OECD (Organisation for Economic Co-operation and Development) Oslo Manual, there are 4 (four) types of innovation, namely product innovation, process innovation, organizational innovation, and marketing innovation[4].

#### 2.2.1. Product Innovation

In the OECD Oslo Manual [4] a product innovation is defined as the introduction of new goods or services or significantly improving a product. This includes significant improvements in technical specifications, components, and materials, software mix, or other functional characteristics. Product innovation can take advantage of new knowledge or technology, or it can be based on new uses or a combination of existing knowledge or technology.

Damanpour[15] defined product innovation as a new good or service that is introduced to the market to meet market needs. The result of this process is the introduction of a new good or service that can be used as a tool to gain profits for the firm [16]. In this

case, the goods or services must be completely updated to strengthen its position in the market [16]. Product innovation can result in new products in the form of goods or services that differ significantly in characteristics or different uses from product that have been previously produced by the firm. Some examples of product innovation include using new technologies, developing applications for products with minor changes to technical specifications, significant improvements to existing products through changes in materials, components, and other characteristics that improve performance, significant improvements to services (for example in terms of efficiency or speed), the addition of new functionality or characteristics to existing services, or the introduction of completely new services.

### 2.2.2. Organizational Innovation

OECD Oslo Manual [4] described organizational innovation as the implementation of new organizational methods in firm business practices, workplace organizations, or external relations that are used for the first time by the firms. The feature that distinguishes organizational innovation from other organizational changes within a firm the implementation of organizational methods (in business practice, workplace organization, or external relations) that have never been used before in the firm that results in strategic decisions taken by management. Organizational innovation in business practice involves the application of new methods to organize routines and procedures for the implementation of work, including the implementation of new practices to enhance learning and knowledge sharing within the firms.

The success of innovation depends on the use of innovation by all members of the organization, not just individuals [17]. Next, Klein and Sorra [17] said that the implementation of innovation, if effective, will improve organizational performance. The description above shows that to carry out its innovative activities, an organization should be supported by process innovation in its production process and how employees can implement these innovations in improving organizational performance.

### 2.3. Sales Growth

Sales play an important role in determining the profit earned by the firm. The firm hopes that the sales value will always increase from year to year because the greater the sales value of the firm, the greater the profit the firm will get. The growth ratio can measure how well a firm maintains its economic position in the industry [18]. The ratio used in this research is the sales growth ratio.

### 2.4. Firm Performance

Performance is a description of the firm's ability to manage and allocate the firm's resources so that work becomes an important thing that must be achieved by the firm. The main purpose of performance appraisal is to motivate employees to achieve organizational goals and to comply with predetermined standards of behavior, to produce the expected actions and results [5]. The firm as a form of organization has certain objectives to be achieved to fulfill the interests of its stakeholders. Success in achieving firm goals is management achievement. Performance appraisal or performance of a firm is measured because it can be used as a basis for decision making, both external and internal.

Financial performance measurement according to Hongren [19] has the goal of measuring business and management performance against firm goals. Performance measurement is done by analyzing financial ratios to assess and analyze the firm's operating performance or firm performance. Financial ratios are designed to evaluate financial statements that contain data about the firm's position at a point and the firm's past operations [20].

## 3. HYPOTHESIS DEVELOPMENT

The main premise of this study is that the firm's innovation can affect firm performance. Creativity in developing a product is an obligation that firms must do in an increasingly competitive business environment. Creative product development is carried out on based on market demand pressures or developments in production technology. To face competition and answer market challenges, every firm is required to make product innovations. Fagerberg et al. [21] emphasized that the introduction of new products is generally self-explanatory, and has a positive effect on revenue growth due to its cutting-edge nature of production. Based on the competitive advantage theory concept, each firm must be able to optimize all its resources in facing competition. The resources owned must be able to produce a unique and quality product, so that it is different from its competitors. Product innovation is an effort made by a firm to optimize all its resources by understanding all the needs of customers for the product to be created.

Research conducted by Faria and Lima, Atalay et al [7], Kalay and Lynn [22], Karlsson and Tavassoli [23], and Mohamad and Sidek [24] provided empirical evidence that product innovation has a positive and proven to have a significant effect on firm performance. The greater the product innovation produced by a firm, the greater the firm

performance. Based on the description above, the hypothesis built in this study is:

H1: Product innovation has a positive effect on firm performance.

Based on the concept of competitive advantage, firms must be able to produce product innovation to help firms create cost efficiency from the innovations that the firm makes. Organizational structuring that leads to structural renewal and improvement of facilities is one manifestation of organizational innovation. With the rearrangement of the coordination mechanism to increase technological innovation within the firm, it is hoped that it can improve firm performance. The success of innovation depends on the use of innovation by all members of the organization, not just individuals so that if organizational innovation can be applied effectively, it can improve organizational performance.

Research conducted by Faria and Lima provided empirical evidence that organizational innovation has a positive and significant effect on firm performance. The greater the organizational innovation a firm produces, the greater the firm performance. Based on the description above, the hypothesis built in this study is:

H2: Organizational innovation has a positive effect on firm performance.

## 4. RESEARCH METHODOLOGY

### 4.1. Population and Sample

The data used in this study are the annual reports of manufacturing firms listed on the Indonesian Stock Exchange (IDX) during the 2016-2018 period. Sampling in this study was carried out using the purposive sampling method, which is a sampling technique with certain considerations.

Operational Definition and Variable Measurement Independent Variables.

### 4.2. Product Innovation

The greater the firm's innovation in improving existing products, and the greater the firm's ability to produce new products, the more the firm will be able to face competition. Measurement of product innovation in this study used a dummy variable with a value of 1 if the firm has a new product during the research year and a value of 0 for the opposite.

### 4.3. Organizational Innovation

The more effective the application of organizational innovation to the firm, the better the organizational

performance will be to reduce costs. Organizational innovation in this study used TSORG ratio measurement (Kraft and Czarnitzki, 2002). TSORG ratio was measured using the formula:

$$TSORG = \frac{R_t \& D_t - R_{t-1} \& D_{t-1}}{R \& D}$$

$$\frac{Sales_t - Sales_{t-1}}{Sales_t}$$

*Dependent Variables.* In this study, the measure of firm performance is seen from the financial performance produced by the firm. According to Hongren (2007), measuring financial performance aims to measure business and management performance compared to firm goals. In this study, financial performance was measured using the return on asset (ROA) ratio. ROA ratio was measured using the formula:

*Laba bersih*

$$ROA = \frac{Laba\ Bersih_t}{Total\ Aktiva_t}$$

*Control Variable.* The growth ratio can measure how well a firm maintains its economic position in the industry (Weston and Copeland, 1992). The ratio used in this study was the sales growth ratio. This ratio compared the sales difference between the current period and the previous period with the sales value of the previous period, as formulated below:

$$Sales_t - Sales_{t-1}$$

$$Sales\ Growth\ Ratio = \frac{Sales_t - Sales_{t-1}}{Sales_{t-1}}$$

The analysis technique used in this study was the multiple linear regression analysis. Multiple linear regression test was used to measure the strength of the influence between two or more independent variables on one dependent variable and was useful for predicting the dependent variable with the independent variable. This multiple linear regression test was carried out using the SPSS 24.0 program. The regression model used to test the hypothesis formulated as below:

$$Y = a + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + e \quad (1)$$

Notes:

Y : Financial Performance

a : Constant

$\beta_1$  :  $\beta_n$  : Regression Coefficient

X1 : Product Innovation

X2 : Organizational Innovation X3 : Sales Growth

e : Residual Error

## 5. RESULTS AND DISCUSSION

### 5.1. Data Analysis and Discussion

#### Descriptive Analysis

Descriptive analysis was used to provide information and an overview of the data variables

used in the study namely: product innovation (IP), organizational innovation (IO), and sales growth (SG) variables. The descriptive analysis of the variables used is presented in the following table:

	N	Minimum	Maximum	Mean	Std. Deviation
ROA <sub>t</sub>	216	-0.18	0.38	0.0482	0.08353
ROA <sub>t+1</sub>	216	-0.16	0.47	0.0495	0.0787
X1	216	0.00	1.00	0.3194	0.46734
X2	216	0.00	2761497000	40732354.31	303398242.20
X3	216	-1.00	18.18	0.1846	1.29815
Valid N (listwise)	216				

Source: Research data, processed 2020 Based on the table above:

Current firm performance (ROA<sub>t</sub>) shows a minimum value of -0,18 and the highest value of 0,38. The lowest value of current firm performance is owned by PT. Anugerah Kagum Karya Utama, Tbk. (AKKU) in 2016, and the firm with the highest value is owned by PT. Unilever Indonesia, Tbk. (UNVR) in 2016. For all firms sampled, the average firm performance today is equal to 0,0482 with a standard deviation of 0,08353. The rate of distribution of sales growth data for all firms has a value of 173,299%. This showed that current firm performance for all sample firms used has a relatively different data distribution, which indicated that the firms sampled in this study have current performance ratios that tend to be different. Future firm performance (ROA<sub>t+1</sub>) shows a minimum value of -0,16 and the highest value of 0,47. The lowest value of future firm performance is owned by PT. Sierad Produce, Tbk (SIPD) in 2016 and the firm with the highest value is owned by PT. Unilever Indonesia, Tbk. (UNVR) in 2017. For all firms sampled, the average future firm performance is equal to 0,0495 with a standard deviation of 0,07871. The distribution level of future firm performance data for all firms has a value of 159,01%. This showed that future firm performance for all sample firms used has a relatively different data distribution indicating that the firms sampled in this study have different future performance ratios. Product Innovation (IP) has a minimum value of 0,000 and the highest value of 1,00. The lowest score for product innovation was owned by 38 firms in 2016, 45 firms in 2017, and 42 firms in 2018, and the firms with the highest scores were owned by 27 firms in 2016, 20 firms in 2017, and 23 firms in 2018. For all firms sampled, the average product innovation is 0,3113 with a standard deviation of 0,46413. The distribution level of sales management

data for all firms has a value of 149,094%. This showed that product innovation for all sample firms used has a relatively different data distribution. This showed that sample firms have a different tendency to make product innovations.

Organizational Innovation (IG) has a minimum value of 0,00 and the highest value of 2.761.497.000. The lowest score of organizational innovation is owned by some firms in 2016, 2017, and 2018 and the firm with the highest value is owned PT. Unilever Indonesia, Tbk. (UNVR) in 2016. The average value of firm size is 40.732.354 with a standard deviation of 303.398.242. The distribution level of firm size data for all firms has a value of 744,85%. This showed that sample firms have a different tendency to carry out organizational innovation.

Sales growth (SG) has the minimum value of -1,00 and the highest value of 18,18. The lowest score of sales growth is owned by PT. Indofood CBP Sukses Makmur (ICBP) in 2017 and the highest score is owned by PT. Anugerah Kagum Karya Utama, Tbk. (AKKU) in 2016. For all firms sampled, the average sales growth is equal to 0,1846 with a standard deviation of 1,2982. The distribution level of sales growth data for all firms has a value of 703,25%. This showed that sales growth for all sample firms used has a relatively different data distribution, where the data tends to fluctuate between the sample data used.

### 5.2. Estimation of Multiple Linear Regression Results

Multiple linear regression analysis model 2 was conducted to test the effect of independent variables, namely product innovation and organizational innovation on the dependent variable of future firm

performance in manufacturing firms listed on the Indonesia Stock Exchange during 2016-2018. Table 4.8 below is the result of multiple linear regression.

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	0.035	0.006		5.930	0.000
X1	0.032	0.010	0.177	3.037	0.003
X2	1.263E-010	0.000	0.459	7.909	0.000
X3	-0.011	0.004	-0.170	-2.942	0.004

Hypothesis 1 (one) stated that product innovation has a positive and significant effect on future firm performance. This can be seen based on the product innovation regression coefficient value of 0,032 and the calculated significance value of product innovation of 0,003 which means the calculated significance level < from the level of trust of 0,05. The results showed that the greater the product innovation made by the firm, the greater the firm performance.

Hypothesis 2 (two) stated that organizational innovation has a positive and significant effect on future firm performance. This can be seen based on the calculated significance value of the organizational value of 0,000 which means the calculated significance level < from the level of trust of 0,05. The results showed that organizational innovation carried out within the firm was able to have a significant effect on driving firm performance.

### 5.3. Discussion and Conclusions

Hypothesis 1 stated that product innovation has a positive and significant effect on firm performance. The results showed that the existence of product innovation carried out by the firm was proven to improve firm performance, both present and predictive of future performance. Besides, the existence of product innovation carried out by the firm also showed how the firm's ability to innovate and maintain the market, and increase the sustainability of the firm's products. This study is in line with the previous research conducted by Becheikh, Landry, & Amara (2006); Sudaryati & Amelia (2015) which stated that innovative firms tend to be more flexible and more adaptable to the

- [1] M. E. Porter, *Competitive Advantage: Creating and Sustaining superior performance*. New York: FreePress, 1985.
- [2] S. F. Slater and E. M. Olson, "Marketing's Contribution to the Implementation of Business strategy: An empirical Analysis,"

business environment, thus increasing opportunities better than competitors to improve firm performance.

Hypothesis 2 stated that organizational innovation has a positive and significant effect on current firm performance and as a prediction of future firm performance. The results showed that organizational innovation carried out by the firm was able to have a significant effect on driving firm performance. These results indicated that organizational innovation carried out to support firm operations can have a significant effect on improving firm performance because the never-ending changes in the business environment encourage firms to further develop innovative strategies within the organization to meet customer demands. This is in line with research conducted by Hult et al. (2004) which stated that firms that adopt greater innovation can improve firm performance.

## 6. CONCLUSIONS

This study aims to determine the effect of product innovation and organizational innovation on current firm performance and as a prediction of future firm performance. The results of this study proved that product innovation has a positive and significant effect on current firm performance and as a prediction of future firm performance. This indicated that product innovation as measured by the presence of new products launched by the firm will show how the firm's ability to innovate.

The data results and analysis proved that organizational innovation has a positive and significant effect on firm performance. Innovation is based on how to create a quality product by optimizing the available resources so that the firm can improve efficiency. Therefore, innovation is an important effort that must be made by every firm in the modern era to win the competition, maintain sustainability, and improve firm performance. Innovation provides an advantage for firms to expand their market without placing a large burden on the firm's operations. This will make it easier for management to improve firm performance.

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