



## THE EFFECT OF ORGANISATION STRUCTURE, COMPETENCY AND INNOVATION ON FIRM PERFORMANCE IN THE ERA OF INDUSTRY 4.0

Setyani Dwi Lestari<sup>1\*</sup>, Brantas Juwana<sup>2</sup>

<sup>1,2</sup>Budi Luhur University, Jakarta, Indonesia 12260

### Abstract

*The research aimed to determine the effect of organizational structure, competency, and innovation which are considered as key factors that affect firm performance in the era of industry 4.0. The research used purposive sampling survey to obtain primary data by distributing questionnaires directly to respondents or employees of Indosat Ooredoo's head office in Jakarta. The research had 135 respondents as samples. The method for data analysis was multiple regression analysis using SPSS version 25 software. The results show that the organizational structure has a positive influence of 58,6% on competency, the organizational structure has a positive influence of 44% on innovation, competency has a positive influence of 48,5% on innovation, competency has a positive effect of 72,7% on firm performance, innovation has a positive influence of 38,6% on company performance, and simultaneously both competency and innovation have a positive effect of 72,8% on firm performance. It is recommended that Indosat Ooredoo make improvements on the organizational structure to maximize employee competency and innovation to further enhance firm performance in the industry era 4.0.*

**Keywords:** organization structure; competency; innovation; firm performance.

### INTRODUCTION

In the era of the industrial revolution 4.0, the business world has experienced disruption of internet technology into the digital application process so that the service process is more effective, efficient, fast, and wider reach. This is marked by the use of Artificial Intelligent, the Internet of Things (IoT), nanotechnology, big data, to a system called cloud computing. The revolution currently experienced not only impacted on the manufacturing industry, but also almost all other business industries. This is because

Information & Technology (IT) is also developed for e-commerce and e-business applications. The advancement of IT has made telecommunications services, especially cellular technology, become a trend and widely needed by the public.

Indosat Ooredoo is an experienced telecommunications company and is one of the top three cellular companies in Indonesia. Indosat Ooredoo is now managed by foreign-company since it was taken over by Ooredoo, a Qatar-based company in 2008. However, the problem of network quality and the limitation of network coverage still cannot be resolved properly. The impact of this problem is that a number of Indosat Ooredoo customers have chosen to churn to its competitors. Therefore, the level of customer satisfaction/trust appears to continue to decline as the number of Indosat Ooredoo customers decreased to around 60

#### ARTICLE INFO

##### Article history:

Received: 20 January 2021

Accepted: 18 March 2021

##### Email Addresses:

[setyani.dwilestari@budiluhur.ac.id](mailto:setyani.dwilestari@budiluhur.ac.id) (Setyani Dwi Lestari)

\*Corresponding author

million in semester 3 of 2019 from more than 100 million customers in 2018. As a sequence, now Indosat Ooredoo ranks third after XL Axiata. As a result of this decline, Indosat Ooredoo's revenue in 2018 reduced significantly by Rp 2.4 trillion (from Rp 30 trillion in 2017 to Rp 27,6 trillion at the end of 2018). Indosat Ooredoo's problem does not stop there, the level of investors'/shareholders' confidence tends to be diminishing, thus the share price has gone down.

Based on the explanation above, the problem experienced by Indosat Ooredoo is that the firm performance continues to decline at the moment when telecommunications services are badly needed by the public in the era of industry 4.0. If this performance condition continues to be ignored, it will have a negative impact on the company because it will hamper to achieve its vision of becoming the leading digital telecommunications company in Indonesia.

Based on the results of previous studies, factors that affect firm performance include organizational structure, leadership, knowledge orientation, training, HR development, compensation, staffing, employee performance appraisal, job design, competency, and innovation. The research focuses on three factors that impact on firm performance, namely organizational structure, competency and innovation. The main factor that needs special attention to be addressed immediately is the organizational structure, as it becomes an important foundation for overcoming the obstacles of competency and innovation factors.

## **LITERATURE REVIEW**

### **Firm Performance**

According to Peterson et al in Taouab & Issor (2019), firm performance basically focuses on the ability of a company to efficiently utilize available resources to achieve achievements consistent with the goals set by the company and consider its relevance to its users. Firm performance is a special result obtained in management, economics, and marketing that gives the organization

competitiveness, efficiency and effectiveness characteristics and its structural and procedural components (Verboncu & Zalman in Taouab & Issor, 2019). The definition of performance must be achieved through things like trials, evaluations, efficiency, effectiveness, and quality (Bartoli & Blatrix in Taouab & Issor, 2019). It can be concluded that firm performance is a result of the company's business processes that show the value of the success of a business measured by financial and non-financial information.

### **Competency**

According to Boyatzis in Hawi, Alkhodary, & Hashem (2015), the term competency is a fundamental characteristic that the person has leads to achieving extraordinary performance. Competency is basically a combination of knowledge and skills needed for effective performance.

According to Martina et al. in Hawi et al. (2015), in general competency is a combination of the person's knowledge, skills, abilities, and how employees behave in the workplace; these aspects are the results that reflect the level of company performance.

Based on the various opinions of the experts mentioned above, it can be concluded that competency is a combination of knowledge, skills and attitudes that correlate with effective performance (can be measured and evaluated), and strength through training or development programs for employees.

### **Innovation**

According to Gunday et al. (2011), innovation is generally seen as an important component of competitiveness, which is embedded in the organizational structure, processes, products, and services in a company. Innovation is one of the fundamental instruments of a growth strategy to enter the new market, to increase existing market share and to make companies more competitive.

Amabile in Zainurossalamia et al (2016) argues that innovation is the successful implementation of employees' creative ideas in the company. Innovation is the company's

mechanism to adapt in a dynamic environment. Based on the opinions of the experts, it can be concluded that innovation is an idea or new idea that has never been done before, besides innovation is an effort to improve the systematic effort to make improvements and make improvements continuously so that the fruit of innovation it can be felt more benefits.

**Organization Structure**

According to Jones in Al-Qatawneh (2014), organizational structure is defined as a formal system of authority relationships and tasks that control and coordinate employees' actions and behavior to achieve goals in the organization. Organizational structure is a framework of roles, responsibilities, authority and communication of relationships that are intentionally designed to complete

organizational tasks and achieve their goals (Agbim, 2013).

According to Lestari et al. (2016), organizational structure is a tool to assist management in achieving its goals. Organizational structure can have a large influence on its members. The influence of organizational structure on employee satisfaction and performance leads to clear conclusions. The organizational structure describes how work will be divided, grouped and formally coordinated.

It can be concluded that the organizational structure is an arrangement of the relationship between functions, parts or positions and also shows the organizational hierarchy or structure as a forum for exercising authority, responsibilities and reporting systems towards superiors to achieve company goals.

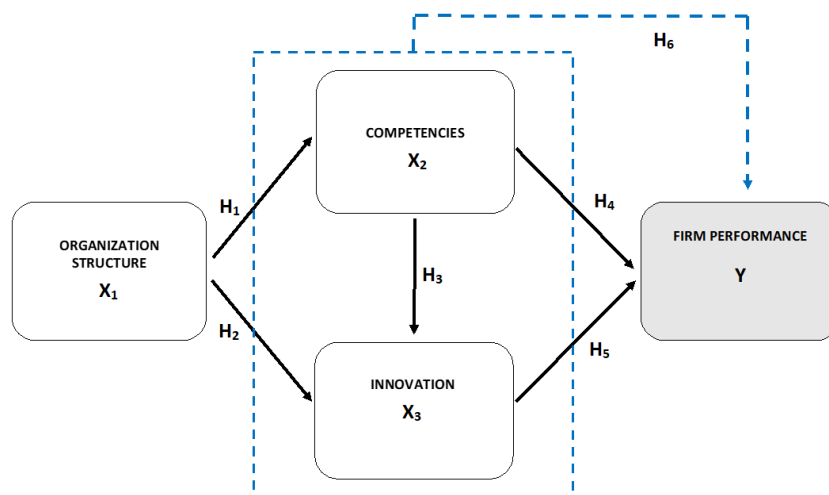


Figure 1. Framework

Based on the results of previous research studies and frameworks, the following are the hypotheses in the research:

H<sub>1</sub>: There is a significant influence partially between organizational structure on competency.

H<sub>2</sub>: There is a significant influence partially between organizational structure on the innovation.

H<sub>3</sub>: There is a significant influence partially between the competency variable on the innovation.

H<sub>4</sub>: There is a significant influence partially between competency on firm performance.

H<sub>5</sub>: There is a significant influence partially between the innovation on firm performance.

H<sub>6</sub>: There is a significant influence simultaneously between both innovation and competency on firm performance.

**MATERIALS AND METHODS**

The research uses a quantitative approach, a method for analyzing the effect of innovation, competency, and organizational structure on

company performance in the industrial era 4.0, the case study in Indosat Ooredoo. In this study, the researcher used a purposive sampling survey method to get primary data. Primary data is obtained by giving questionnaires directly to respondents or employees of Indosat Ooredoo from various groups through the Google form. The number of samples in this study as many as 135 respondents were employees of the head office of PT Indosat Ooredoo in Jakarta with a population of around 1625 employees. This study uses a rating method that is summed with a Likert scale 5 model. Data obtained from respondents were then processed with analytical tools such as descriptive analysis, simple linear regression analysis and multiple regression analysis using SPSS version 25 software.

## RESULTS AND DISCUSSIONS

### Validity Test Results

There are 38 question items for all variables which are 9 question items for Organization Structure, 15 items for Competency, 6 items for Innovation, and 8 items for Firm Performance. With the number of respondents as many as 135 people with a significance of 5%,  $r_{table}$  values can be obtained through  $df$  (degree of freedom) =  $n - k$ , so that  $135 - 2 = 133$ , then  $r_{table} = 0,1690$ . The value of  $r$ -count in each question item is greater than 0,1690, so it can be concluded that all questions in each variable are valid.

### Reliability Test Results

Reliability is a stability that is measured from the consistency of respondents in answering matters relating to the constructs of questions, which are dimensions of a variable and performed in a questionnaire form.

Reliability test can be done together with all questions. This instrument can be said to be reliable because the value of Cronbach's Alpha  $> 0,70$ . A construct or variable is said to be reliable if it gives a Cronbach Alpha value  $> 0,70$  (Nunnally, 1994).

The reliability test results from the data obtained shows that the reliability value of  $X_1$  is

0,895 (good reliability),  $X_2$  is 0,961 (good reliability),  $X_3$  is 0,935 (good reliability) and  $Y$  reliability value is 0,929 (good reliability). Thus, it can be concluded that all questions on the organizational structure variable ( $X_1$ ), competency ( $X_2$ ), innovation ( $X_3$ ), and firm performance ( $Y$ ) are reliable.

In general, almost all respondents had given good responses to the firm performance. This response shows that Indosat Ooredoo's performance is relatively good, which includes a flat hierarchy, matrix and the existence of a project team to support Indosat Ooredoo's business activities.

Table 1. Matrix of Research Results

No	Variable Description	R <sup>2</sup>	T <sub>count</sub>	T <sub>table</sub>
1	Organizational Structure on Competency ( $X_1 \rightarrow X_2$ )	0,586 (58,6%)	13,723	1,978
2	Organizational Structure on Innovation ( $X_1 \rightarrow X_3$ )	0,440 (44,0%)	10,233	1,978
3	The Impact of Competency on Innovation ( $X_2 \rightarrow X_3$ )	0,485 (48,5%)	11,187	1,978
4	The Impact of Competency on Firm Performance ( $X_2 \rightarrow Y$ )	0,727 (72,7%)	18,801	1,978
5	The Impact of Innovation on Firm Performance ( $X_3 \rightarrow Y$ )	0,386 (38,6%)	9,136	1,978
6	The Impact of Competency and Innovation on Firm Performance ( $X_1, X_2 \rightarrow Y$ )	0,728 (72,8%)	176,709 (F <sub>count</sub> )	3,06 (F <sub>table</sub> )

Source: SPSS Data Management Results

### Discussion

Hypothesis 1. Based on the results of the regression test shown in table 1, the coefficient of determination is 0,586 (or 58,6%) and the value of  $t_{count}$  at a significance level of 5% is 13,723 (greater than  $t_{table}$  of 1,978 or  $t_{count} > t_{table}$ ). Thus,  $H_a$  is accepted. The results of the analysis show that organizational structure has a positive influence on employee competency. This is in accordance with the opinion of Hawi et al (2015); Lestari, et al (2016); and Agbim

(2013) that organizational structure is important in improving employee competency. The main reason is the organizational structure created to place employee in accordance with their fields and expertise. Thus, the better the organizational structure and placement of employees are done, the better the competency of employees will become.

Hypothesis 2. Based on the results of the regression test shown in Table 1, the coefficient of determination is 0,440 (or 44,0%) and the value of tcount at a significance level of 5% is 10,233 (greater than ttable of 1,978 or tcount > ttable). Thus, Ha is accepted. The results of the analysis show that organizational structure has a positive influence on innovation. This is in line with the opinion of Shamim et al (2016); Kalay & Lynn (2016); and Agbim (2013) who stated that organizational structure has become one of the important things in enhancing employee innovation. Organizational structure can also increase employees' innovation if the placement is in accordance with their expertise and opportunities provided to employees. Therefore, the better the organizational structure, the better employee innovation will be developed.

Hypothesis 3. Based on the results of the regression test shown in table 1, the coefficient of determination is 0,485 (or 48,5%) and the value of tcount at a significance level of 5% level is 11,187 (greater than ttable of 1,978 or tcount > ttable). Thus, Ha is accepted. The results of the analysis show that the competency has a positive influence on innovation. The research results are in accordance with the opinions of Ubeda, Santos, & Nagano (2017); Umar, et al (2018) who stated that employee competency becomes one of the important things in enhancing innovation. The reason is that innovation tends to result from employees who have competency in their fields. So, if every employee has good competency, so will employee innovation will be better.

Hypothesis 4. Based on the results of the regression test shown in table 1, the coefficient of determination 0,727 (or 72,7%) with a value

of tcount at a significance level of 5% is 18,801 (greater than ttable of 1,978 or tcount > ttable). Thus, Ha is accepted. The results of the analysis show that the competency has a positive influence on firm performance. This is in accordance with the opinion of Hawi, et al (2015); Umar, et al (2018); and Zainurossalamia, et al (2016) that competency is important in enhancing the firm performance. Therefore, if the competency of employee is in accordance with what is needed, then the firm performance will be even better.

Hypothesis 5. Based on the results of the regression test shown in Table 1, the coefficient of determination is 0,386 (or 38,6%) and the value of tcount at a significance level of 5% is 9,136 (greater than ttable of 1,978 or tcount > ttable). Thus, Ha is accepted. Based on the results of research analysis show that employee innovation has a positive influence on firm performance. In the research, the effect of innovation on firm performance is relatively small, given the quite broad understanding of innovation. According to Zainurossalamia, et al (2016) technological innovation consists of product innovation, process innovation, paradigm innovation and sources innovation. In this regard, respondents are seen to have diverse perceptions of company performance. The results are in line with the opinions of Barbosa & Cintra (2012); Shouyu (2017); and Zainurossalamia, et al (2016), which states that innovation is one of the important things in improving company performance. So, it can be concluded that the better the employee innovation, the better the firm performance will be.

Hypothesis 6. Based on the results of the regression test shown in Table 1, the coefficient of determination is 0,728 (or 72,8%) and the value of fcount at a significance level of 5% is 176,709 (greater than ftable of 3,06 or fcount > ftable). Thus, Ha is accepted. The results of the analysis show that the competency and innovation simultaneously have positive effect on firm performance. The results of this study are in line with Barbosa & Cintra (2012), which states that both employee

competency and innovation simultaneously have impact on firm performance. This is due to the two independent variables, competency and innovation, can support the company to be more agile, adaptive and meet customer expectations in the era of the industry 4.0 and therefore, the company's performance in this case Indosat Ooredoo can be maintained.

## CONCLUSIONS

The organizational structure has a partial effect of 58,6% on employee competency. This means that improvements of organizational structure can have a positive influence on employee competency. Indicators of organizational structure that greatly affect employee competency are the level of employee's opportunity to participate in discussions and speed in making the right decisions (the indicator of flat hierarchy in the organizational structure).

The organizational structure has a partial effect of 44% on employee innovation. This means, improvements in organizational structure can produce a positive influence on employee innovation. The indicator of organizational structure that greatly affects employee innovation is the level of opportunity for employees to become facilitators of knowledge sources in the development of technological innovation (the indicator of the project team in the organizational structure).

Competency has a partial effect of 48,5% on employee innovation. This means that increasing employee competency can have a positive influence on employee innovation. The competency indicator that greatly influences employee innovation is the level of leadership ability to realize the vision, mission, and goals of the organization, especially in the business competition environment in the industrial era 4.0 (the indicator of strategic skills competency).

Competency has a partial effect of 72,7% on company performance. This means that increasing employee competency can have a positive influence on company performance. The employee competency indicator that greatly influences the company's performance

is the leadership's ability to identify internal and external factors that are beneficial for achieving organizational goals (the indicator of strategic skills competency).

Employee innovation has a partial effect of 38,6% on company performance. This means that increased innovation can produce a positive influence on company performance. Indicators of employee innovation that greatly affect the company's performance is the level of ability of employees to see the potential of services or products with new digital technology that can be developed for new markets (the indicator of radical innovation).

Both employee competency and innovation have simultaneous effect of 72,8% on firm performance. This means that enhancing the employee competency and innovation simultaneously can have a positive impact on company performance in the era of industry 4.0. Indicators that need to be maintained to improve company performance are indicators of strategic skills competency and radical innovation.

## Recommendation

The most important thing to do is the transformation of human resources (HR), which results in more competent and innovative human resources. Therefore, the organization structure needs to be adjusted to accommodate the development of the era of industry 4.0. Without strong and qualified human resources, the company's performance is still considered vulnerable, due to various external conditions, especially the demands of customers for more innovative services and increasingly fierce competition conditions in the era of industry 4.0.

It is deemed necessary to conduct further research with other factors that affect the performance of Indosat Ooredoo in the era of industry 4.0, such as leadership, knowledge orientation, and job design.

## REFERENCES

Agbim, K. C. (2013). The impact of organizational structure and leadership styles on innovation. *IOSR Journal of*

- Business and Management*, 6(6), 56-63.  
<https://doi.org/10.9790/487x-0665663>
- Al-Qatawneh, M. I. (2014). The impact of organizational structure on organizational commitment: A comparison between public and private sector firms in Jordan. *European Journal of Business and Management*, 6(12), 30-37.
- Barbosa, A. C. Q. & Cintra, L. P. (2012). Innovation, competency and organizational performance – Articulating constructs and their operational capability. *Future Studies Research Journal*, 4(1), 30-59.  
<https://pdfs.semanticscholar.org/bde5/50b8f79458a355c7749563f569269a1bd308.pdf?ga=2.105582019.1901606956.1624969844-2076005272.1620194581>
- Gunday, G., Ulusoy, G., Kilic, K., & Alpkan, L. (2011). Effects of innovation types on firm performance. *International Journal of Production Economics*, 133(2), 662-676.  
<https://doi.org/10.1016/j.ijpe.2011.05.014>
- Hawi, R. O., Alkhodary, D., & Hashem, T. (2015). Managerial competency and organizations performance. *International Journal of Management Sciences*, 5(11), 723-735.  
<https://EconPapers.repec.org/RePEc:rss:jnljms:v5i11p2>
- Kalay, F. (2016). The impact of organizational structure on management innovation: An empirical research in Turkey. *Pressacademia*, 5(1), 125-125.  
<https://doi.org/10.17261/pressacademia.2016116656>
- Lestari, S. D., Sugiarto, D., Simamora, B. H., & Richter, U. H. (2016). The effect of the structure of an organization on project premier contractor's performance, with rewards, training, and leadership as intervening variables. *International Journal of Economics and Management*, 10(S1), 109 – 122.
- Shamim, S., Cang, S., Yu, H., & Li, Y. (2016). Management approaches for Industry 4.0: A human resource management perspective. 2016 IEEE Congress on Evolutionary Computation (CEC).  
<https://doi.org/10.1109/cec.2016.7748365>
- Shouyu, C. (2017). The relationship between innovation and firm performance: A literature review. Proceedings of the 2017 7<sup>th</sup> International Conference on Social Network, Communication and Education (SNCE 2017).  
<https://doi.org/10.2991/sncc-17.2017.132>
- Taouab, O. & Issor, Z. (2020). Firm performance: Definition and measurement models. *European Scientific Journal*, 15(1), 93-106.  
<http://dx.doi.org/10.19044/esj.2019.v15n1p93>
- Ubeda, C., Santos, F., & Nagano, M. (2017). Analysis of the individual competencies contributions to innovation management based on methodological triangulation. *Gestão & Produção*, 24(3), 595-609.  
<https://doi.org/10.1590/0104-530x1481-16>
- Umar, A., Che Omar, C., Hamzah, M., & Hashim, A. (2018). The mediating effect of innovation on entrepreneurial competencies and business success in Malaysian SMEs. *International Business Research*, 11(8), 142.  
<https://doi.org/10.5539/ibr.v11n8p142>
- Zainurossalamia, S., Setyadi, D., Hidayah, S., & Rusmilawati. (2016). The effect of innovation on firm performance and competitive advantage. *European Journal of Business and Management*, 8(29), 113-120.  
<https://iiste.org/Journals/index.php/EJBM/article/view/33399/34339>

