

INFLUENCE OF KNOWLEDGE SHARING AND INFORMATION TECHNOLOGY INNOVATION ON EMPLOYEES PERFORMANCE AT BATAMINDO INDUSTRIAL PARK

Saut Pin Tubipar Saragih

Master of Information Technology,
Binus Graduate Programs, Bina Nusantara University
Jakarta 11480, Indonesia
Email: sautpin.upb@gmail.com

Harisno

Master of Information Technology,
Binus Graduate Programs, Bina Nusantara University
Jakarta 11480, Indonesia
Email: harisno@binus.edu

Abstract—This study aims to measure the effects of knowledge sharing behavior and the level of information technology innovation on employee performance on electronic manufacturing company located in Batamindo Industrial Park. In this article, the authors use research design methods that are associative through survey by distributing questionnaires to the respondents at random. Then, a mathematical model is established through multivariate regression where the interaction of the independent variables and dependent variable is established. As the results, the study concludes that knowledge sharing behavior partially has no significant effects on employee performance but has significant effect on the level of information technology innovation to performance and simultaneously both variables have a significance effect to employee performance.

Keywords: knowledge sharing behavior; innovation; information technology; performance; regressions

I. INTRODUCTION

Companies capabilities to deploy employees individually and in groups (team work) on the knowledge sharing will be able to produce a much better performance and gain ability to improve the performance of the company on sustainable basis. Therefore, individual employees must be willing to share the knowledge and experience they have to other individuals [1]. Electronics manufacturing company located in Batam is the largest area of industrial in the province of Riau Islands although other manufacturing companies also spread over several areas. The development of

information technology at present is very fast and increasingly sophisticated with various advantages. Innovation offered by the current technology is able to change the working process by the machine and people as the operator or users of the technology itself.

The effect of the level of innovation of the company on personal and company performance is still widely discussed although there is no doubt that it is found in some other studies. Reference [1] revealed that the sharing of knowledge and experience leads to a more innovative and produces better performance. Thus, there is a significant relationship between knowledge sharing behavior with the performance of individual employee.

Knowledge is the translation of information process and the past experiences of meaningful relationships that are understood and applied by individuals. To manage the knowledge, the leaders are trying to maximize by creating a knowledge management. Knowledge management (KM) is a process or activity to recognize or identify, capture, organize and disseminate important intellectual assets to the organization for a long term. KM can be categorized into two based on the application, namely, explicit knowledge and implicit knowledge [2].

Knowledge sharing is an action that basically makes the knowledge available to others within the organization or company [3]. Knowledge sharing is also described as very important KM activities to the company or organization. Knowledge sharing behavior expressed is a behavior of a person who has a desire to share their knowledge with others [4]. Sharing of knowledge

is important because it provides a media between individuals and organizations with the knowledge that is moving with the individual to the organizational level, where it is converted into economic and competitive value for the organization. Voluntary action by individual knowledge sharing contributes to the distribution of knowledge, and the process can lead to the acquisition of knowledge sharing with others in the organization [3]. The ability to share knowledge between organizational units and departments, contributes greatly to the performance of the organization [5].

Innovation is the process of turning creative ideas or methods into useful products. Therefore, an innovative organization is characterized by the ability to provide their creativity into useful results. When managers talk about organizational changes to be more creative, this usually means that the manager wants to encourage and nurture innovation. Improved production processes that lead to the use of information technology affects the performance of the company. There is a positive relationship between the utilization of information technology with the performance [6]. In the case of critical use of information technology by employers, it appears to follow the innovation process that interferes with or disrupts the business [7].

Rate of change or innovation of a company is higher and it is kind of radical (revolutionary innovation) and incremental innovation (evolutionary innovation). Radical innovation (revolutionary innovation) is a new way of thinking in doing the job. It can be said that there is a major change in work processes and tools used. While incremental innovation (evolutionary innovation) is a way of thinking that adds a new idea to the previous idea and focuses on problem solving and consumer demand [8].

The level of changes and information technology innovation of product creativity development, working processes or methods of any other aspect of information in technology support the activities in the company. Changes in information technology innovation can be categorized into two types and they are radical innovation and incremental innovation.

In doing this research, the problem will be formulated whether knowledge sharing behaviors and information technology innovations affect employee performance or not and whether the level of knowledge sharing behavior and information technology innovations simultaneously affect employee performance or not.

This research objective is to determine the effect of knowledge sharing behavior and information technology innovations on employee performance.

II. METHODS

The research framework of the current study is depicted in Fig. 1 where two independent variables of interest are Knowledge Sharing Behavior (X_1) and the Level of Information Technology Innovation (X_2). The dependent variable is Employee Performance (Y_1). The framework also shows the relevant sub-variables for each variables. This study is descriptive and quantitative where regression analysis is used to evaluate relationship between dependent and independent variables [9, 10].

The relevant data are collected through questionnaire where Likert scale is being used. The data are collected from some selected companies in the area of interest [11].

Specifically, this work intends to evaluate the following hypotheses. The first is the relation between Knowledge Sharing Behavior and Employee Performance where the hypotheses are stated as:

- H0: There is no significant effect of Knowledge Sharing Behavior on Employee Performance.
- H1: There is a significant effect of Knowledge Sharing Behavior on Employee Performance.

The second is the relation between the Level of Technological Innovation and Employee Performance where the hypotheses are:

- H0: There is no significant effect on the Level of Technological Innovation of Information on Employee Performance.
- H1: There is a significant effect of the Level of Technological Innovation of Information on Employee Performance.

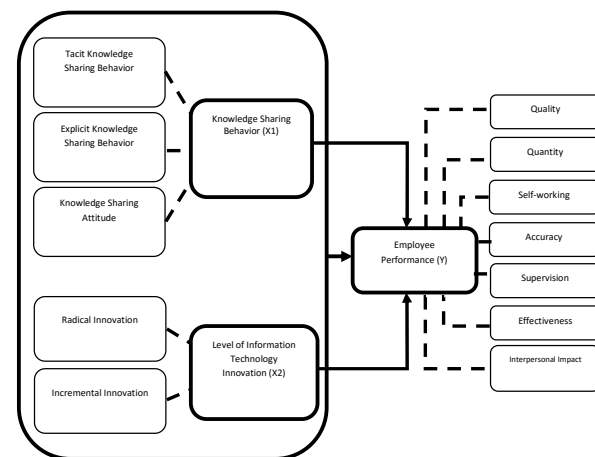


Fig. 1. The framework of the current work where the independent variables are Knowledge Sharing Behavior (X_1) and the Level of Information Technology Innovation (X_2) and the dependent variable is Employee Performance (Y).

The last is the relation between both Knowledge Sharing Behavior and Level of Technological Innovation and Employee Performance where the hypotheses are:

- H0: There is no significant effect of both Knowledge Sharing Behavior and the Level of Technological Innovation of Information on Employee Performance.
- H1: There is a significant effect of Knowledge Sharing Behavior and the Level of Technological Innovation of Information on Employee Performance.

III. RESULTS AND DISCUSSION

The respondents in this study are employees who represent parts of the company's operations. Three respondents are taken from each company of 47 companies in the sample; thus, the number of respondents is 141 respondents. Only 118 questionnaires are returned. The research data are analyzed using SPSS version 21 [12].

A. Validity, Reliability, and Normality

Pearson correlation values that is considered as a valid instrument must be filled by a condition which $r\text{-count} > r\text{-table}$ (0.361, for $N = 30$). Variable level of Information Technology Innovation with entire value of correlation $r\text{-count} > r\text{-table}$ (0.361, $N = 30$) is declared invalid. Test results show the validity of the questionnaire of employee performance throughout its Pearson value is valid where the entire value of $r\text{-count} > r\text{-table}$ (0.361, $N = 30$).

Reliability of the alpha value variables for the questionnaire obtained with knowledge sharing behavior variables is 0.857, it shows the value of Cronbach's $\alpha > 0.7$. Therefore, the variable is reliable. For the variable of the level of information technology innovation, α -value is 0.905, it means the value is greater than 0.7. Therefore, the questionnaire has been reliable. The Cronbach's α -value of Employee Performance variable is 0.886, it is also greater than 0.7.

Normality of data, from the results of the Kolmogorov-Smirnov test shows the significance of 0.189, so that the data are normally distributed and tested by a significance of Kolmogorov-Smirnov > 0.05 . P-P plot image can be used as an overview of the normal data distribution (See Fig. 2).

B. Hypothesis Test

The result of t -test for Knowledge Sharing Behavior variable on Employee Performance variable has p -value of 0.062, t -statistic of 1.888 (see Table I). Thus, the p -value is bigger than the significance level

$\alpha = 0.05$ and the t -statistic is smaller than the critical t -value of 2.364. Thus, we accept the null hypothesis that: there is no significant effect of knowledge sharing behavior on employee performance.

The result of t -test for Level of Information Technology Innovations variable on Employee Performance variable has p -value of 0.019, t -statistic of 2.380 (see Table I). Thus, the p -value is smaller than the significance level $\alpha = 0.05$ and the t -statistic is bigger than the critical t -value of 2.364. Thus, we accept the alternative hypothesis that: there is a significant effect of the Level of Information Technological Innovations variable on Employee Performance variable.

Finally, Table II shows that we accept the hypothesis that there is a significant effect of Knowledge Sharing Behavior variable and the Level of Information Technology Innovations variable on Employee Performance variable.

Finally, the empirically justified model is shown in Fig. 3.

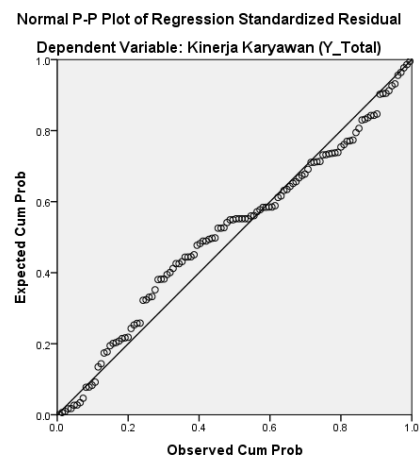


Fig. 2. P-P plot to show the normality of the residual.

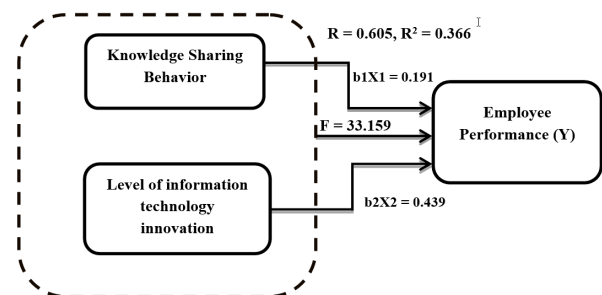


Fig. 3. The established research framework and the results from the regression analysis.

TABLE I
THE RESULTS OF A REGRESSION ANALYSIS WHERE THE INDEPENDENT VARIABLES ARE KNOWLEDGE SHARING BEHAVIOR AND THE LEVEL OF INFORMATION TECHNOLOGY INNOVATIONS.

Model	Unstandarized Coefficients		Standarized Coefficients Beta	T	Sig.
	B	Standard Error			
(Constant)	21.055	4.452			
Knowledge Sharing Behavior	0.191	0.101	0.277	1.888	0.062
Level of IT Innovations	0.439	0.184	0.349	2.38	0.019

TABLE II
THE RESULTS OF ANOVA SHOW THE INDEPENDENT VARIABLES ARE SIMULTANEOUSLY SIGNIFICANT.

Model	Sum of Squares	df	Mean Square	F	Sig.
Regression	1372.568	2	686.284	33.153	.000
Residual	2380.585	115	20.701		
Total	3753.153	117			

IV. CONCLUSIONS

This study concludes that there is no significant effect of knowledge sharing behavior on employee performance and there is an effect on the level of innovation of information technology on employee performance. There is simultaneously a significant effect on knowledge sharing behavior and the level of technological innovation of information on employee performance.

With regard to the analysis and discussion, the suggestions that can be used as input to the electronics manufacturing companies in Batamindo Industrial Park are that the company should be more open to new experiences owned by employees and the employee also can take advantage of free time to share their knowledge and experience they have. The company should be more active to supply and increase the innovation in information technology because they affect the performance of employees and increase company performance. The company begins to implement the behavior of knowledge and experience sharing among the employees and employers with less subordinate to the higher absorption of science that lead to a better dissemination of information.

REFERENCES

- [1] F. Akram and R. Bokhari, "The role of knowledge sharing on individual performance, considering the factor of motivation-the conceptual framework," *International Journal of Multidisciplinary Sciences and Engineering*, vol. 2, no. 9, pp. 44–48, 2011.
- [2] S. Debowski, *Knowledge Management*. John Wiley & Sons, 2006.
- [3] R. Ngah and A. R. Ibrahim, "The effect of knowledge sharing on organizational performance in small and medium enterprises," *Journal of Management*, vol. 1, no. 1, pp. 467–482, 2010.
- [4] W. M. Olatokun and E. I. Nneamaka, "Analysing lawyers' attitude towards knowledge sharing: original research," *South African Journal of Information Management*, vol. 14, no. 1, 2013.
- [5] G. C. Moore and I. Benbasat, "Development of an instrument to measure the perceptions of adopting an information technology innovation," *Information systems research*, vol. 2, no. 3, pp. 192–222, 1991.
- [6] A. Suhaili, "Analisis faktor-faktor yang mempengaruhi pemanfaatan teknologi informasi dan pengaruhnya terhadap kinerja manajerial pada perusahaan manufaktur di kalimantan selatan," Master's thesis, Program Studi Magister Sains Akuntansi, Universitas Diponegoro, 2004.
- [7] S. Qureshi, "Information technology innovations for development," *Information Technology for Development*, vol. 13, no. 4, pp. 311–313, 2007.
- [8] C. Q. Garcia and C. A. Velasco, "Assessing technological knowledge through r&d alliances: Consequences for radical and incremental innovation," *JEL*, vol. 32, pp. 1–38, 2010.
- [9] A. Sanusi, *Metodologi Penelitian Bisnis*. Jakarta: Penerbit Salemba Empat, 2012.
- [10] P. D. Sugiyono, *Metode Penelitian Kuantitatif Kualitatif dan R&D*. Bandung: Alfabeta, 2012.

Cite this article as: S. P. T. Saragih and Harisno, "Influence of Knowledge Sharing and Information Technology Innovation on Employees Performance at Batamindo Industrial Park", *CommIT (Communication & Information Technology) Journal* 9(2), 45–49, 2015.

- [11] Rita, "Pengaruh strategi inovasi terhadap kinerja operasional perusahaan manufaktur," *Binus Business Review*, vol. 1, no. 2, pp. 474–487, 2010.
- [12] D. Priyanto, *Paham Analisa Statistik Data Dengan SPSS*. Yogyakarta: Mediakom, 2010.