The Effect of Knowledge Sharing, Absorptive Capacity, and Individual Creativity on Innovation Performance in East Java Indonesia Manufacturing Companies

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Abstract: This study aims to determine the effect of knowledge sharing, absorptive capacity, and individual creativity on innovation performance in manufacturing companies in East Java. This writing is quantitative writing with the SEM (Structural Equation Modeling) data processing method using SPSS 23.0 software to test the validity and reliability at an early stage and using PLS 3.0 software to test the research model. This writing method was carried out by distributing online questionnaires to 150 respondents in East Java who carried out knowledge sharing, absorptive capacity, individual creativity, and innovation performance activities in manufacturing companies. The sample used in this paper is the owner, director, manager, or department head of an East Java manufacturing company. The results of this study will show several factors that have a significant positive effect on innovation performance.

Keywords: innovation performance, knowledge sharing, individual creativity, absorptive capacity, manufacturing company

A. INTRODUCTION

Innovation is the main source of a company's competitive advantage and a driving factor for its success for the company. Innovation has become a must for companies that want to stay in business competition. Companies must be able to improve innovation performance through knowledge-sharing activities among individuals involved in the hope of creating innovative products and services to meet consumer needs (Basset-Jones, 2005). Knowledge sharing among the individuals involved is able to create cooperation that gives and receives knowledge between workers so that it will encourage the ability of each individual to innovate. According to Zhao et al. (2020) knowledge-sharing consists of inbound knowledge-sharing and outbound knowledge-sharing. Absorptive capacity or the ability to absorb individuals in the organization is expected to determine the extent to which information will be processed and received to improve innovation performance. When the individual's absorptive capacity in the organization goes well, it will encourage individuals to create and develop new creative ideas. This is what helps individual creativity.

A manufacturing company is the sector that contributes the most to the Indonesian economy so the sector is one of the main engines of the Indonesian economy (Laksani et al., 2012). Therefore, innovation is needed to increase the company's popularity. East Java manufacturing companies have a growth rate, especially large and medium companies which have the second largest number in Indonesia. This position makes East Java manufacturing companies have the highest impact on the economic structure of East Java with a contribution of around 30% per year. This contribution makes manufacturing companies the sector with

the largest contribution in East Java. According to data from the Central Statistics Agency, the manufacturing sector of East Java has a major influence on the proportion of value added to Indonesia's Gross Domestic Product (GDP), when compared to other provinces. It's recorded for the last 3 years, namely in 2019 by 30.23%, in 2020 by 30.31%, and in 2022 by 30.25. %.

As a company with the first position in the market (first-to-the-market), it must be able to compete by innovating both process innovation and product innovation assisted by knowledge-sharing activities both from within and from outside the organization. Knowledge sharing between fellow workers within the company needs to be done to improve competence and skills so that the workforce in the company can produce competitive products so that the company's productivity also increases. Companies must be able to produce quality products in order to compete with competitors. In improving innovation performance, manufacturers must also apply elements of absorptive capacity and individual creativity. Through knowledge sharing, absorptive capacity and individual creativity are formed which help companies improve their innovation performance. The difference between this research and previous research is the scope of the research or the scope of the research, where this research only focuses on one area of the company, namely manufacturing.

A study conducted by Zhao et al. (2020) stated that knowledge inbound sharing has a positive insignificant effect on innovation performance. Meanwhile, research by Han, Y. and Chen, G. (2018) states that knowledge sharing has a significant positive effect on innovation performance. With this resulting gap, the purpose of this study is to examine the effect of knowledge sharing, absorptive capacity, and individual creativity on Innovation performance in East Java Manufacturing companies.

B. CONCEPTUAL FRAMEWORK AND RESEARCH METHODOLOGY

The model used in this study adopted the research model conducted by Zhao et al. (2020). The main focus of this research model in Figure 1 is to examine the effect of knowledge sharing, namely knowledge outbound sharing and knowledge inbound sharing on innovation performance by using 2 mediating variables, namely absorptive capacity, and individual creativity.

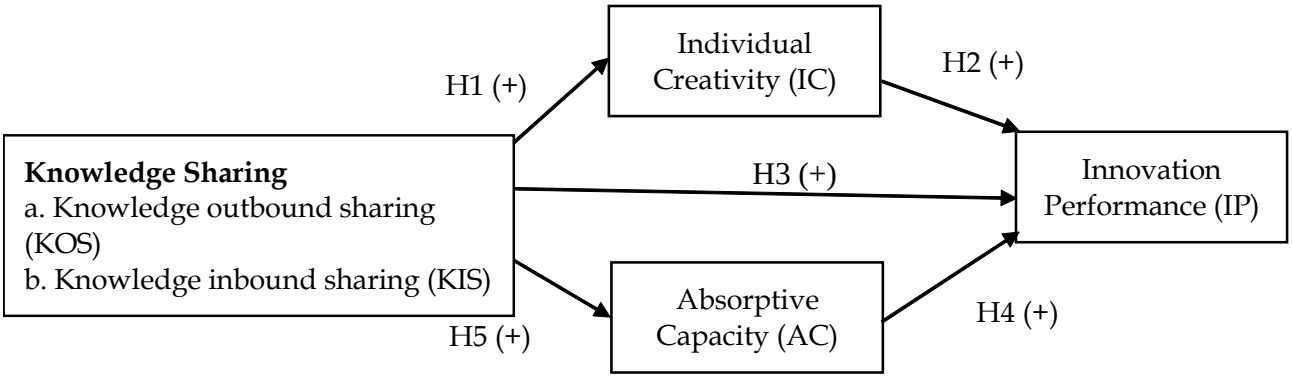

Figure 1 Research Framework
Source: Zhao et al. (2020)

Individual creativity in employees is an important part of organizational innovation. For this reason, the individual creativity of employees needs to be improved so that they can develop innovation performance. The company's ability to carry out knowledge-sharing activities can have a positive impact on absorptive capacity and will create dynamic capabilities for the company (Zhao et al., 2020). Organizations with a high level of absorptive capacity can respond quickly to customer needs resulting in an increase and having a significant positive effect on innovation performance (Kusumawardhany, 2018). Therefore, there are Hypotheses of the research.

H1a Knowledge outbound sharing (KOS) has a positive and significant effect on individual creativity in East Java manufacturing companies.

H1b Knowledge inbound sharing (KIS) has a positive and significant effect on individual creativity in East Java manufacturing companies.

H2 Individual creativity (IC) has a positive and significant effect on Innovation performance (IP) in East Java manufacturing companies.

H3a Knowledge outbound sharing has a positive and significant impact on innovation performance in East Java manufacturing companies.

H3b Knowledge inbound sharing has a positive and significant effect on Innovation performance in East Java manufacturing companies.

H4 Absorptive capacity (AC) has a positive and significant effect on Innovation performance in East Java manufacturing companies.

H5a Knowledge outbound sharing has a positive and significant effect on absorptive capacity in East Java manufacturing companies.

H5b Knowledge inbound sharing has a positive and significant effect on absorptive capacity in East Java manufacturing companies.

This research is included in the type of basic research because it focuses on finding the truth of previous research. In this study, 150 respondents were needed. The instrument test was carried out on 3 respondents with the help of the SPSS 23.0 software application and then the analysis technique used in this study was structural equation modeling with partial least square (SEM-PLS).

The sample used in this study is non-probability sampling with a purposive sampling type. Characteristics of respondents in this study are small, medium, and large manufacturing companies with job positions equivalent to middle - top management levels such as the owner, director, CEO, manager, or head of the department, both female and male; have a minimum of 3 years work experience; understand the strategies implemented within the company regarding the performance of innovations related to consumers; have a branch office or business partner; own factory.

This research was conducted by using the ordinal scale where the authors use statements agree and disagree in the measurement of variables. A five-point Likert scale is used in this study to measure variables starting from the numbers 1 to 5.

The test is carried out using 2 stages of measurement. The first stage is to test the measurement model (outer model) in testing the validity through convergent validity and discriminant validity. Then in the second stage, the structural model (inner model) test is carried out, which serves to test a hypothesis that is tested whether it is supported or not supported.

C. RESULT AND DISCUSSION

In this research, questionnaires were distributed to respondents using Google Forms with a total of 150 respondents. The characteristics of respondents in this study are companies that have a form of a corporate legal entity, company scale, company field, length of service, last education, number of employees led, job position, divisional position, and company age. The following are the details of the respondents in this study.

It can be seen from Table 1, in this study is dominated by respondents who work in food and beverage companies as many as 67 respondents with a percentage of 45%. Respondents with 5–19 employees were 82 people with a percentage of 55%. Respondents with 20–99 employees were 49 people with a percentage of 33%. Respondents with more than 100 employees were 19 people with a percentage of 12%.

Table 1 Company Profile

Sector	Responses	
	Qty.	%
Food & beverage	67	45%
Textile & fashion	12	8%
Wood	9	6%
Paper	2	1%
Leather	3	2%
Rubber & plastic	9	6%
Machine	9	6%
Furniture	12	8%
Vehicles	10	7%
Other processing	17	11%
Total	150	100%

Table 2 shows the positions of the respondents who filled out the questionnaire. Respondents with the position of head of the department in manufacturing companies are the most filling questionnaires. The age of the respondent's company is dominated by companies that have been established for more than 10 years.

Table 2 Respondent's Position and Company Age

Position	Qty.	Established	Qty.
Director	19	<3 years	2
CEO	9	3–5 years	8
Marketing manager	19	6–10 years	30
Operational manager	28	>10 years	110
Production manager	24		
HR manager	12		
Head of division	39		
Total	150		150

The validity test is done by looking at the AVE (average variance extracted) value. The AVE value is a description of the diversity of indicators contained by the latent variable. In this test, the AVE value requirement is 0.50. Based on Table 3, it can be seen that all variables have an AVE value of 0.50. So, it can be concluded that all variables in the tested model have no problems.

Table 3 Validity and Reliability Test

Variables	AVE	CR	CA
KOS	0.770	0.910	0.851
KIS	0.698	0.902	0.856
IC	0.583	0.846	0.769
AC	0.558	0.919	0.901
IP	0.500	0.795	0.711

The composite reliability test is used to measure the actual value of the reliability of a variable, while Cronbach's alpha test is used to measure the lowest reliability value of a variable. Each value of composite reliability and Cronbach's alpha must be 0.60 to be said to be reliable. Based on Table 3, it can be seen that the composite reliability test value on all variables has a value of 0.60. Therefore, it can be said that all variables in this study are reliable. Cronbach's Alpha test value on all variables has a value of 0.60. Therefore, it can be said that all variables in this study are reliable or have met the reliability test standards so that they can be continued for further

testing. After the data is said to be valid and reliable, then the calculation for the research model image has been completed.

The coefficient of determination or R-square test was conducted to measure how much influence the independent variable had on the independent variable. The measurement standard of the coefficient of determination test is that the value of 0.670 is considered strong, the value of 0.333 is considered moderate, and 0.190 or below is considered weak.

Table 4 Coefficient of Determination Test Results (R2)

Variables	R-Square
Absorptive capacity	0.339
Individual creativity	0.238
Innovation performance	0.161

Based on Table 4, it can be seen that the R-square value of absorptive capacity is 0.339, which means that the influence of knowledge outbound sharing and knowledge inbound sharing on absorptive capacity is 33.9%, which means it has a moderate effect. The R-square value of Individual Creativity is 0.238, which means that the influence of the variable knowledge outbound sharing and knowledge inbound sharing on individual creativity is 23.8%, which means it has a moderate effect. The R-Square value of Innovation Performance is 0.161, which means that the influence of the variables of knowledge outbound sharing, knowledge inbound sharing, absorptive capacity, and individual creativity on innovation performance is 16.1%, which means it has a weak influence.

A hypothesis is said to be significant or supported if it meets the specified requirements, namely having a T-statistics value > 1.65 and a P-Value < 0.1 and also by looking at the value of the path coefficient where the left shows a negative variable relationship and the right shows a positive variable relationship.

Based on Table 5, the results of the H1a test, namely the effect of knowledge outbound sharing on individual creativity in East Java manufacturing companies have a positive and significant effect. This is in line with previous research conducted by Zhao et al. (2020) which states that knowledge outbound sharing has a positive and significant effect on individual creativity. The results of the same study were also found by Aulia (2016) who stated that there was a positive and significant relationship between knowledge sharing and individual creativity.

Table 5 Hypotheses Test Result

Hypotheses	T-Stat	P-Value	Path Coeff	Result
H1a: KOS → IC	3.686	0.000	0.470	Supported
H1b: KIS → IC	0.179	0.858	0.023	Not supported
H2: IC → IP	0.977	0.329	0.100	Not supported
H3a: KOS → IP	0.116	0.908	0.016	Not supported
H3b: KIS → IP	1.794	0.073	0.253	Supported
H4: AC → IP	1.071	0.285	0.123	Not supported
H5a: KOS → AC	1.740	0.082	0.220	Supported
H5b: KIS → AC	3.593	0.000	0.397	Supported

The results of the H1b test are that the effect of knowledge inbound sharing on individual creativity in East Java manufacturing companies has a positive but not significant effect. This is in line with previous research conducted by Zhao et al. (2020) which states that knowledge inbound sharing has a positive and insignificant effect on individual creativity. In practice, knowledge sharing is still difficult for employees in the work environment. The main difficulty is caused by human factors because without the desire of individuals to share their knowledge, knowledge sharing will not occur.

The results of the H2 test, namely the effect of individual creativity on innovation performance in East Java manufacturing companies have a positive but not significant effect. This is not in

line with previous research conducted by Zhao et al. (2020) which states that individual creativity has a positive and significant influence on innovation performance. The results of the same study as this study were also found by Shubina, I., and Kulakli, A. (2020) who stated that there was no significant effect between creativity and innovation. The fewer knowledge individuals receive, the lower the level of creativity they have so which will inhibit innovation.

The results of the H3a test are that the effect of knowledge outbound sharing on innovation performance in East Java manufacturing companies has a positive but not significant effect. This is not in line with previous research conducted by Zhao et al. (2020) which states that knowledge outbound sharing has a positive and significant influence on innovation performance. This study supports research from Goyal et al. (2020) which says knowledge has no effect on employee innovation. It said that the formal education taken did not provide knowledge about the current work of employees. When individuals share knowledge externally, the company's stock of knowledge resources increases, and the knowledge application process must involve knowledge screening and selection. Strong knowledge reserves and discriminatory abilities are required to complete this step. Here it is clear that this cannot be fulfilled at the company level, which inevitably reduces the ability of knowledge sharing to improve organizational innovation performance.

The results of the H3b test, namely the effect of knowledge inbound sharing on innovation performance in East Java manufacturing companies have a positive and significant effect. This is not in line with previous research conducted by Zhao et al. (2020) which states that knowledge inbound sharing has a positive and insignificant effect on innovation performance. The results of this study are in line with the results of research by Han, Y., and Cohen, G. (2018) which say that the relationship between knowledge sharing and innovation performance is significantly positive. One of the most important advantages of innovation performance capability is to innovate by motivating companies to share ideas and facilitate market understanding. Knowledge sharing is an important capability for manufacturing companies to increase innovation (Tassabehji et al. 2020). Innovation can only be achieved with creative and knowledgeable or competent human resources, so that knowledge sharing can be the main driver of innovation.

The results of the H4 test, namely the effect of absorptive capacity on innovation performance in East Java manufacturing companies have a positive but not significant effect. This is not in line with previous research conducted by Zhao et al. (2020) which states that absorptive capacity has a positive and significant influence on innovation performance. The results of this study are in line with the results of research obtained by Ranto, D. W. (2015) which states that absorptive capacity has an insignificant effect on the innovation performance ability of SMEs. Those with greater absorptive capacity or have more relevant prior knowledge will have a better ability to learn, absorb and utilize the knowledge shared in the knowledge-sharing process. While individuals with smaller absorptive capacity or less initial knowledge, till being less able to learn, absorb and utilize the knowledge shared in the knowledge sharing process. The lower the individual's absorptive capacity in the world of work, the lower the individual's innovation performance in the company. Because the level of absorptive capacity received by each individual is different, the relationship between absorptive capacity and innovation performance is not significant.

The results of the H5a test, namely the effect of knowledge outbound sharing on absorptive capacity in East Java manufacturing companies has a positive and significant effect. This is in line with previous research conducted by Zhao et al. (2020) which states that knowledge outbound sharing has a positive and significant effect on absorptive capacity. The same study was also found by Raharso, S. (2021) who said that knowledge sharing had a positive and significant effect on absorptive capacity. This shows that individual knowledge sharing in manufacturing companies plays a role in building and increasing absorptive capacity. When the absorbency increases, it will be much easier for one to create extraordinary innovations based on the acquired knowledge.

The results of the H5b test, namely the effect of knowledge inbound sharing on absorptive capacity in East Java manufacturing companies have a positive and significant effect. This is in line with previous research conducted by Zhao et al. (2020) which states that inbound knowledge sharing has a positive and significant influence on absorptive capacity. Inbound knowledge sharing is a simple collection and storage of knowledge from outside and only the absorptive capacity of the organization can absorb and manage that knowledge properly.

D. CONCLUSION

Knowledge sharing and individual creativity are not enough to increase the innovation performance of East Java manufacturing companies. This happens because individuals in the company obtain knowledge sharing that is less than optimal and lack the awareness to increase their creativity and it affects the ideas generated to develop products, which results in the company's innovation performance being less than optimal. On the other hand, knowledge sharing also helps increase individual creativity, innovation performance, and individual absorptive capacity in East Java manufacturing companies. This happens because individuals can utilize the knowledge received through external training properly so that through their individual abilities, they can easily solve problems and find solutions to product development so that the innovation performance of East Java manufacturing companies is getting better.

Knowledge outbound sharing needs to be further enhanced by being active in seeking as much information or knowledge as possible from outside the company in order to come up with new, creative ideas for better and more competitive manufacturing companies. Companies are advised to improve and evaluate the knowledge and work experience of employees.

Knowledge inbound sharing can increase individual creativity or workforce if individuals have good communication with their colleagues in East Java manufacturing companies, related to internal knowledge so that they will support and build the development of the manufacturing company itself in dealing with competitors.

Creativity is very useful in improving and developing the innovation of an East Java manufacturing company, so the company needs to conduct a creativity competition between individuals so that they can find the best new ideas that might help increase the innovation of East Java manufacturing companies.

Absorptive capacity possessed by individuals can be trained by providing specific strategies to the workforce so that training programs can run more effectively in creating innovation. Training and development programs provided by East Java manufacturing companies can be

in the form of educational scholarship programs, especially for employees with low levels of education and experience, so that employees can improve their skills and knowledge.

For further researchers, this study covers the area of East Java, so it is hoped that further researchers can conduct research in other areas to be used as a comparison of better results. Other variables need to be added to a trigger of innovation performance in manufacturing companies.

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