The Effect of Innovation on Performance in Micro, Small, and Medium Enterprises

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Abstract— **This paper aims to know much influence innovation has on the performance of Micro, Small, and Medium Enterprises in Bandung Regency. This research used descriptive method with the aim of collecting detailed data so that it can describe how much influence innovation has on the performance in detail. The research instrument was in the form of questionnaire for Micro, Small, and Medium Enterprises in Bandung Regency. Innovation has a significant influence on improving the performance of micro and small businesses. The conclusion of this study is that innovation has an influence on performance in Micro, Small, and Medium Enterprises. It is expected that every micro, small, and medium scale businesses will increase their innovation both in products and in the production process.**

Keywords— Micro, Small, and Medium Enterprises, performance, innovation, descriptive method

I. Introduction

Innovation is an idea, practice, or object that is considered new by individuals or other adoption units [1]. Innovation can be understood as the transformation of ideas into a new product process or even as the use of new resources in organizational practices, adding value to stakeholders [2]. The ability of product and process innovation is also an important supporter of the performance of new products [3].

In 2013 M. Mohd Rosli and Syamsuriana Sidek conducted a study entitled *The Impact of Innovation on the Performance of Small and Medium Manufacturing Companies: Evidence from Malaysia*. The results of this study confirm the hypothesis that product innovation and process innovation significantly affect company performance [4]. Christos Tsinopoulos et al in 2019 also conducted a study with the title *Leaving Innovation and Performance Activities: The Role of Moderation from Openness*. The results of the study were the fact thst if the extent of formal collaboration relationships of a company is high, the relationship between leaving innovation activities and innovation performance also weakens [5]. Gonzalez Fernández et al in 2015 also conducted research under the title *Innovation and Company Performance in The Spanish Financial Crisis*. The results of the study show that Return on Equity (RoE) and, in particular, sales revenue are positively influenced by company innovation. In addition, this positive relationship is strongest in younger companies and large companies [6]. Zhao T et al also conducted a study entitled *The Effect of Innovation Capacity, Production Capacity, and Vertical Specialization on Innovation Performance in Chinese Electronics Manufacturing: Analysis of Supply and Demand Sides*. The results of the study were that after assessing the influence of determinants on performance innovation, we observe that on the supply side, innovation capacity has a positive effect on innovation performance, production capacity in coastal areas increases and domestic demand for domestic products is increasingly important [7]. Heurich M and Vignali C in 2015 also conducted research with the title innovation and its impact on the performance of acute care hospitals in Germany - an investigation containing empirical research and software development. The results of the study are some significant correlations between innovation and financial performance and quality, it is not possible to give a clear statement about the impact of innovation on the performance of acute care hospitals so far [8]. Compared to previous studies, this study used a Quantitative method by conducting a descriptive test, a Kolmogorov-Smirnov One-Sample normality test, a hypothesis test with a Lisrel path analysis, this study used 2 assistance applications namely IBM SPSS and Lisrel Student in order to be able to measure more accurately about the magnitude the effect of innovation on performance. But in previous studies using Microsoft Excel and SPSS program.

This study aims to determine the effect of innovation on the performance of micro, small and medium businesses in Bandun. This research used quantitative research methods by doing descriptive and comparative tests. The results of this study look at the extent to which innovation can affect the performance generated by entrepreneurs in Micro, Small, and Medium Enterprises in Bandung Regency. Every innovation made will have an impact on performance, so that it can spur the entrepreneurs of Micro, Small, and Medium Enterprise to increase creativity and innovation, their turnover, and be able to compete with competitors.

II. Methods

This study used quantitative research methods by carrying out descriptive tests, Kolmogorov-Smirnov One-Sample normality test, hypothesis testing by analyzing the lisrel path.

2.1. Validity Test

Validity tests are conducted to test the accuracy of each item in measuring the instrument. This Validity Test is done by linking the scores of statement items with their total scores. The validity test method that will be used is by calculating the correlation coefficient value. The validity test in this study uses the Pearson formula Product Moment coefficient or correlation.

$$r_{xy} = \frac{N\Sigma_{xy} - (\Sigma_x)(\Sigma_y)}{\sqrt{\{N\Sigma x^2 - (\Sigma x^2)\}\{N\Sigma y^2 - (\Sigma y^2)\}}}$$

information:

rxy = Correlation coefficient

N = Number of subjects or number of sample members

y = Total score

xy = Question scores multiplied by the number of respondents studied

x = Question score

2.2. Reliability Test

This reliability test must show consistent results, meaning there is no difference if further testing is done. To test the reliability of the method used (split half), items are divided into two groups, namely groups of odd items and groups of even items, then each group assesses each item that is summed to produce a total.

$$r_b = \frac{n(\sum AB) - (\sum A)(\sum B)}{\sqrt{\left((n\sum A^2 - (\sum A)^2)(n\sum B^2 - (\sum B)^2)\right)}}$$

information:

r = Product moment correlation coefficient.

A = Odd number variable.

B = Even number variable.

ΣA = The total number of hemisphere scores is odd.

ΣB = Even total number of hemispheres.

$\Sigma A2$ = The number of quadrants of the total hemisphere score is odd.

$\Sigma B2$ = The total number of quadrants is even number of halves.

ΣAB = Number of multiplication of answers to odd and even halves

The correlation coefficient is included in the formula as follows :

$$r_i = \frac{2 \cdot r_b}{1 + r_b}$$

Information :

r = Reliability value

rb = Pearson product moment correlation between the first (odd) hemisphere and the second (even) hemisphere.

2.3. Descriptive Test

Descriptive research method is a method of research conducted to determine the value of an independent variable or more (independent) without making comparisons or combining one variable with another. This descriptive analysis is the transformation of raw data in a form that is easily understood.

2.4. Normality Test One-Sample Kolmogorov-Smirnov

Normality Test of One Sample Sample Kolmogorov-Smirnov is a normal test that is widely used by researchers, especially in statistical data programs that have been widely used.

Basic decision making:

1) If the significance value is > 0.05, the data distribution is normal.

2) If the significance value is < 0.05, the data distribution is not normal.

> $p < 0,05$ data distribution is not normal
>
> $p \geqslant 0,05$ normal data distribution

2.5. Lisrel Path Analysis

This multiple regression model is actually an analytical technique that uses more than one independent exogenous variable, namely X1 with one endogenous variable Y. Where in this study uses exogenous variables, namely X1 with one endogenous variable. In this path analysis, each indicator of each variable will be examined.

III. RESULTS AND DISCUSSION

3.1. Descriptive Innovation Statistics

In Table I below, we describe the description of innovation variables where the respondent's data is normally distributed.

TABLE I. DESCRIPTIVE PERFORMANCE STATISTICS

Category	Count
Number of respondents	94
Minimum	17.00
Maximum	22.00
Sum	1832.00
Mean	19.4894
Std. Deviation	1.75820
Skewness	0.249

In Table I, variables can be seen that the minimum value given by respondents is 17, the maximum value given is 22 so that if there are 94 respondents, the value obtained is 1832. The average value of each respondent is 19 , 5. Then the standard deviation is 1.76, meaning that there is no large deviation in the respondent's data. Furthermore, for slope, the value of 0.067 is smaller than the standard error of 0.249, which means that the respondent's data is normally distributed.

3.2. Descriptive Performance Statistics

In Table II below illustrates a picture of performance variables that are normally distributed.

TABLE II. DESCRIPTIVE PERFORMANCE STATISTICS

Category	Count
Number of respondents	94
Minimum	18.00
Maximum	27.00
Sum	2157.00
Mean	22.9468
Std. Deviation	3.05282
Skewness	-1.599

According to Table II descriptive statistics regarding performance, the variable can be seen that the minimum value given by the respondent is 18, the maximum value given is 27 so that if there are 94 respondents, the value obtained is 2.157. The average value of each respondent is 22, 94. Then the standard deviation is 3.05, which means that there is no large deviation from the respondent's data. Furthermore, the slope here gets a value of 0.159 smaller than the standard error of 0.249, which means that the respondent's data is normally distributed.

3.3. Variable Categorical Test

Table III will discuss the criteria for each variable. Each variable uses indicators that have been reviewed to be more relevant to the place of research.

TABLE III. CATEGORICAL INNOVATION TEST

Indicator	Actual Score	Ideal Score	Percentage	Criteria
Relative superiority	351	500	70	Good
Communication skills	376	500	75	Good
Cost	381	500	76	Good
Risk and uncertainty	373	500	75	Good
Public agreement	351	500	70	Good

Source: Research Data

Innovation variable used 5 indicators as shown above. The indicator of relative excellence in Micro, Small, and Medium Enterprises in Bandung Regency is included in the good category with a percentage of 70%. On the indicator of the ability to communicate Micro, Small, and Medium Enterprises in Bandung Regency included in the good category with a percentage of 75%. In the indicator of the cost of small and medium businesses in Bandung Regency included in the good category with a percentage of 76%. In the indicator of the cost of small and medium businesses in Bandung Regency included in the good category with a percentage of 75%. In the indicator of the cost of small and medium businesses in Bandung Regency included in the good category with a percentage of 70%.

Next, Table IV will discuss the category tests on performance variables.

TABLE IV. PERFORMANCE CATEGORICAL TEST

Indicator	Actual Score	Ideal Score	Percentage	Criteria
Revenue growth	357	500	71	
Amount of new customers	365	500	73	Good
the Amount of former customers	376	500	75	Good
Customer satisfaction level	365	500	73	Good
On time production	342	500	68	Good
Employee productivity level	352	500	70	Good

Source: Research Data

Performance variables used 6 criteria as seen above. The indicator of income growth in Micro, Small, and Medium Enterprises in Bandung Regency is included in the good category with a percentage of 71%. On the indicator of the number of new customers in Micro, Small, and Medium Enterprises in Bandung Regency included in the good category with a percentage of 73%. On the indicator of the number of former customers in Micro, Small, and Medium Enterprises in Bandung Regency is included in the good category with a percentage of 75%. On customer satisfaction indicators on Micro, Small, and Medium Enterprises in Bandung Regency included in both categories with a percentage of 73%. On the indicator of the timeliness of production in Micro, Small, and Medium Enterprises in Bandung Regency included in the category of enough with a percentage of 68%. The indicator of the level of employee productivity in Micro, Small, and Medium Enterprises in Bandung Regency is included in the good category with a percentage of 70%.

3.4. One-Sample Kolmogorov-Smirnov Test Normality Test

Table V explains the Kolmogorov normality test on respondents to determine the distribution of data.

TABLE V. ONE-SAMPLE KOLMOGOROV-SMIRNOV TEST

		Unstandardized Residual
N		94
Normal Parameters[a,b]	Mean	.0000000
	Std. Deviation	1.99713040
Most Extreme Differences	Absolute	.104
	Positive	.104
	Negative	-.065
Test Statistic		.104
Asymp. Sig. (2-tailed)		.014[c]
a. Test distribution is Normal.		
b. Calculated from data.		
c. Lilliefors Significance Correction.		

According to Table V, the One-Sample Kolmogorov-Smirnov Test obtained a significant value of 0.104> 0.05 so it can be concluded that the residual value is normally distributed.

3.5. Test the Path Hypothesis

Table VI describes the hypothesis test for innovation impact on performance.

TABLE VI. TEST THE PATH HYPOTHESIS

Path Coeficient	0,91
T count	6,45
T table 1%	2,36
Ho	Reject
H1	Accept

Source: Research Data

According to Table VI, the conclusions on this hypothesis test is T arithmetic > T table. The innovation variable gets the calculated T value of 6.45> 2.36 T table. We can conclude that hypothesis one in this study was accepted with the results of innovation significantly affecting performance at the level of 1%. At Path Coefficient, it is found that a large effect on innovation on performance by 91%. It can be interpreted that any increase and decrease in innovation will have an effect of 91% on the performance of Micro, Small, and Medium Enterprises in Bandung Regency.

The results of this study state that innovation affects the performance of Micro, Small, and Medium Enterprises in Bandung Regency. In the test, the innovation variable category have 5 indicators which are relative superiority, communication skills, costs, risks and uncertainties, public approval is included in both categories. So that it can be described that the innovation in Micro, Small, and Medium Enterprises in Bandung Regency is good. For the performance variable with 6 indicators of revenue growth, the number of new customers, the number of customers who become noncustomers, the level of customer satisfaction, the timeliness of production, the level of employee productivity is in the good category. It can be described that the performance of Micro, Small, and Medium Enterprises in Bandung Regency is good.

The innovations that have been made by entrepreneurs in Micro, Small, and Medium Enterprises in Bandung Regency are good and can improve performance, so that the resulting turnover also increases. The results of this study are the same as those of M. Mohd Rosli and Syamsuriana Sidek Rosli [4], Heurich et al [8] Rajapathirana et al [9], Karabulut et al [10] who state that innovation has a positive impact on performance. Innovation can increase competitiveness creativity if done well and pay attention to important indicators such as product excellence, cost and public approval.

IV. CONCLUSION

Innovation affects the performance improvement of micro small and medium enterprises with a significant value of 6.45 at 1%. All variables both innovation and performance in Micro, Small, and Medium Enterprises in Bandung Regency are in the good category.

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