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The Influence of Penta Helix Model on Organizational Innovativeness and Product Innovation Performance at Creative Economy Supporting Jember District Tourism Destination

Sri Sundari*
Department of Agribusiness Management
Politeknik Negeri Jember
Jember, Indonesia
sri_sundari@polije.ac.id

Cholyubi Yusuf
Department of Agribusiness Management
Politeknik Negeri Jember
Jember, Indonesia
sri_sundari@polije.ac.id

A Ahsin Kusuma
Department of Accounting, Faculty of Economics and Business
University of Jember
Jember, Indonesia
sri_sundari@polije.ac.id

Muksin
Department of Agribusiness Management
Politeknik Negeri Jember
Jember, Indonesia
sri_sundari@polije.ac.id

***Abstract*—Technology-based MSMEs creative economy startups that support Jember tourism destinations are important to be developed. Regarding the creative economy, Penta Helix which includes: 1) Academics, 2) Business, 3) Government, 4) Media and 5) Community, plays an important role in ensuring industrial creativity and value creation. It is hoped that the five elements of Penta Helix can work together and build cooperation to encourage startups to produce competitive products, possess creativity and innovation. This study aims to: examine the condition of Penta Helix, Organizational Innovation and Product Innovation Performance; examines the influence of the Penta Helix on Organizational Innovation; examining the influence of Penta Helix on Product Innovation Performance both directly and through Organizational Innovation; examine the influence of Organizational Innovation on Product Innovation Performance. The research method uses the Mixed Method Research sequential exploratory model. A total of 104 respondents participated in this study. Purposive and convenience sampling were used to select samples. Data were collected by distributing questionnaires. The tools used to analyze the data were Partial Least Square (PLS) -Structural Equation Model (SEM). The results of the study describe the condition of Penta Helix in growing startups showing that the support of academics and stakeholders is in quite good condition, but the downstream dimension of research results and business support is in a rather bad category, while media helix is in a rather bad category. The startups' Organizational Innovativeness is categorized as quite good, but the Product Innovation Performance is poor. Verification test results show that Penta Helix has a positive influence both on the startups' Organizational Innovativeness and Product Innovation Performance; Penta Helix has a positive influence on the startups' Product Innovation Performance through Organizational Innovativeness; Organizational Innovativeness has a positive influence on Product Innovation Performance of startups supporting the Jember tourist destination.**

Keywords—penta helix, startup MSMEs, organizational innovation, product innovation performance, tourist destinations introduction

I. INTRODUCTION

Technology-based startup companies need to be developed, because startups are expected to become engines of new economic growth, reduce unemployment, become research, technology and innovation-based business peoples, create added value and become part of a knowledge-based economy [1]. The phenomenon of previous research regarding startup survival data revealed that 1 of 3 startups went bankrupt in the first 3 years, 20% went bankrupt in the first year and the remaining 10% failed in the next 2 years [2]. Regarding the creative industry, [3] stated that Penta Helix plays an important role in ensuring industry creativity and values. Penta Helix includes: 1) Academics, 2) Business, 3) Government, 4) Media and 5) Community. It is hoped that the five elements of Penta Helix can work together and build cooperation to encourage startups to produce competitive products, have creativity and innovation.

Problems related to the survival of creative economy entrepreneurs startups supporting Jember tourism destinations are more concentrated at the following: (a) the ability to innovate (innovativeness), indicated have difficulties in developing innovative products, (b) the performance of the innovative products they develop, (c) ease of licensing, tax alignments which are the government's domain, product development support which can be obtained from Research Institutions and Universities, Media support for business promotion and Investor (Business) support to encourage them

to survive and develop. The above is a sign of the problem of support from Penta Helix stakeholders to startup creative economy entrepreneurs.

This study aims to: (1) examine the conditions of Penta Helix, Organizational Innovativeness and Product Innovation Performance of creative economy entrepreneurs who support Jember tourism destinations. (2) examine the influence of Penta Helix on the Organizational Innovativeness of creative economy entrepreneurs who support Jember tourism destinations. (3) examine the influence of Penta Helix on Product Innovation Performance of creative economy entrepreneurs who support Jember tourism destinations, either directly or through Organizational Innovativeness. (4) examine the influence of Organizational Innovativeness on Product Innovation Performance of creative economy entrepreneurs who support Jember tourism destinations.

II. Conceptual Framework

A. *Penta Helix's Relationship to Organizational Innovation*

Reference [4] examines the Triple Helix relationship and the dynamics of innovation, have an opinion that there is a triple helix relationship between academics, government and business people, which can increase the dynamics of innovation in the form of the creation of new science, innovation-based new products and innovation-based economies. The existence of new products from new startups encouraged the support of the two helixes of government and media. The Triple Helix relationship between academics, government and business people will be more effective if the relationship is entered into the National Innovation System, so that the impact on national or regional economic development can be seen [5] and [6].

In the context of research in Germany, research by [7] describes a theoretical model regarding the importance of the role of the Triple Helix in a model called the Mittlestand Triple Helix, which describes the mediation of the roles of academics, corporations and government in increasing the capacity of SMEs.

Empirically, from the results of the FGD, it is known that startups get business ideas, products and market input (voice of customers), one of which is from the media. Startups also get information about the free incubation program and incentives from the government regarding business incubation through mass media, especially online media. Theoretically, Helix Media does play a role in conveying information on the existence of the Startup coaching incentive program organized by the government, the private sector and the community, and is also expected to be able to support the business development of startups through its publicity [8] and [3].

Based on the above study, a research construct was formed for this that Helix consisting of: 1) Academics, 2) Business, 3) Government, 4) Community and 5) Media, supports Organizational Innovativeness in the following hypothesis:

H1: There is the influence of Penta Helix on Organizational Innovativeness.

B. *Penta Helix Relationship with Product Innovation Performance*

Reference [9], conducted research to find patterns of success in an innovative product or Product Innovation Performance. In this study, it was examined that there are many factors that influence (antecedents) to Product Innovation Performance which are grouped into (1) Organization-related, (2) Project-related, (3) Process-related, (4) Product-related and (5) Market-related. In this study [9], measured the dimensions of Product Innovation Performance with (1) Profit Performance and (2) Sales Performance of the product.

Furthermore, [10] examined the influence of Corporate Entrepreneurship on Product Innovation Performance through intervening variables which is IT capabilities. In this study, the dimensions of Product Innovation Performance used by Chen are: (1) Market share performance, (2) Sales Performance, (3) Return on assets performance, (4) RoI performance and (5) Profitability. This research was repeated by [11] using the same dimensions. In their research, what is measured is the respondent's perception of the performance of the achievement of the five dimensions against the targets set.

Empirically from the results of the FGD, it was also found that startups gathered in communities. They share business, look for information, opportunities, exchange views on solutions to the business obstacles they face and even seek sources of labor from relevant communities around them. From a theoretical standpoint, the interaction of business people with the community will be able to improve their innovative skills [3]. Community is a source of innovative product development ideas [12]. And is also a vehicle for brainstorming and developing open innovation [13].

The Relationship Ending Capability with partners or suppliers, especially in relationships that are not profitable or do not achieve good performance or already ended, has a significant influence on Product Innovation Performance, and Product Innovation Performance has a significant influence on the overall company performance. In this study, [14] used the following dimensions: (1) financial performance and (2) sales performance to measure the success of this product innovation.

Based on the study above, a research construct was formed for this that Helix consists of: 1) Academics, 2) Business, 3) Government, 4) Community and 5) Media, supports Organizational Innovativeness and Product Innovation Performance, in the following hypothesis:

H2: There is an influence of Penta Helix on Product Innovation Performance both directly and through Organizational Innovativeness.

C. *Relationship between Organizational Innovativeness and Product Innovation Performance*

Organizational Innovativeness in this case is the characteristic of the organization that encourages the organization's ability to create innovation. It is hoped that with adequate organizational innovativeness, startups will be able to create and implement innovations well which in the end are able to produce products that have good performance.

Reference [15] conducted research on an industrial area and found that companies that have a creative work atmosphere are able to produce a greater number of innovative products and also produce new products that are more successful in the market. However, there are studies that state the opposite where innovativeness actually has a negative

correlation with the survival of startups, where innovation performance is one of the important factors of startup survival. A creative work atmosphere is part of the indicator of Organizational Innovativeness and new products that are successful in the market are also one of the measurement dimensions of Product Innovation Performance. Based on the study above, the premise of the relationship between Organizational Innovativeness and Product Innovation Performance can be described [15].

H3: There is an influence of Organizational Innovativeness on Product Innovation Performance.

III. Research Methods

This research uses Mixed Method Research with sequential exploratory. Descriptive survey method is used to obtain phenomena from existing symptoms and look for factual descriptions that describe each research variable. Verification or explanatory methods are used to test the relationship between observed variables.

The population in this study is the creative economy startups of SMEs that support the Jember tourism destination. A total of 104 respondents were obtained using purposive and convenience sampling.

Hypothesis testing 1 to 3 is carried out using Partial Least Square (PLS) - Structural Equation Modeling (SEM) using the SmartPLS application. All indicators have been developed into question items and measured using a Likert scale with a scale of 1 representing strongly disagree to 5 representing strongly agree.

IV. Analysis And Discussion

A. Descriptive Analysis

For descriptive analysis using the mean test or descriptive statistics, where each variable is categorized into 4 (four) categories, namely bad, rather bad, good enough and good. The results of the study describe the condition of Penta Helix at a score of 3.19 and in the Good Enough category in growing startups with the support of an academic score of 3.39 and a stakeholder score of 3.24 in Good Enough condition, but the downstream dimensions of research results and business support are in a Rather Bad category, while the media helix score is 2.79 is categorized Rather Bad. The Organizational Innovativeness of the startups scored 3.76 in a Good Enough category, but the Product Innovation Performance score was 2.88 in a Rather Bad condition.

B. Results of Data Analysis

Indicators measuring Penta Helix, Organizational Innovativeness and Product Innovation Performance have a discriminant reliability value or Average Variance Extracted (AVE) greater than 0.5. It is interpreted that all items are reliable in measuring latent variables. The composite reliability value measuring all variables is greater than 0.7. Thus it can be concluded that all items can be relied upon in measuring the latent variables. Cronbachs alpha values also show values greater than 0.6. Therefore, based on the Cronbach alpha value, the item can be relied on in measuring its latent variable.

TABLE I. The Result 0f Ave, Composite Reliability, and Cronbachs Alpha Calculation

Variables	Indicators	AVE	Composite Reliability	Cronbachs Alpha
Penta Helix (X1)	Community	0,845	0,942	0,908
	Media	0,647	0,846	0,730
	Government	0,774	0,910	0,847
	Business	0,965	0,988	0,982
	Academics	0,749	0,898	0,823
Organizational Innovativeness (X2)	Process Innovativeness	0,708	0,879	0,791
	Strategic Innovativeness	0,706	0,878	0,790
	Product Innovativeness	0,767	0,908	0,847
	Behavior Innovativeness	0,664	0,971	0,967
	Marketing Innovativeness	0,665	0,885	0,822
Product Innovation Performance (Y)	Sales Performance	0,548	0,782	0,606
	Buyer Appreciation	0,791	0,918	0,861
	Profit Performance	0,588	0,810	0,656

Source: Primary data processed, 2020

C. Inner model measurement

The Goodness of fit model in the PLS analysis is carried out using the predictive relevance of Q-Square (Q2). Q2 is based on the determinant coefficient of all dependent variables. The magnitude of Q2 has a range of 0 <Q2 <1, it means that the closer the value of Q2 to 1, the better the model. The goodness of fit model is summarized in the following table:

TABLE II. Goodness of Fit Test

Variables	R^2
Organizational Innovativeness	0,427
Product Innovation Performance	0,919
$Q^2 = 1 – (1-R_1^2)(1-R_2^2) \rightarrow Q^2 = 1- (1-0,427)(1-0,919) =$ **0.962**	

Source: Primary data processed, 2020.

The predictive relevance value of Q-Square (Q2) was 0.962 or 96.2%. This can indicate that the variability of the Product Innovation Performance variable is 96.2%, while the remaining 5.8% is the contribution of other variables not discussed in this study.

D. Hypothesis Test

In testing the hypothesis, the authors use the t-test for each path of direct influence and indirect influence through the mediating variables. Therefore, hypothesis test is chosen into two parts, which is direct test and indirect test.

E. Direct Influence Test

Direct influence test is conducted to testing the hypotheses 1, 2, and 3. When the t-value is greater than 1.96 (α = 5%), it indicates a significant influence of the exogenous variables on the endogenous variables in each hypothesis examined. The coefficients and t-values of each direct influence are shown in Table 2 below.

TABLE III. RESULT OF DIRECT INFLUENCE TEST

Structure	Path	Coefficient	t-value
1	Penta Helix → Organizational Innovativeness	0.393	4.010
	Penta Helix → Product Innovation Performance	0.719	9.930
	Organizational Innovativeness → Product Innovation Performance	0.465	4.850

Source : PLS output, 2020

As shown in Table 3 above, there is a positive and significant influence of Penta Helix on Organizational Innovativeness. This is interpreted from a t-value (4,010) that is greater than 1.96 as a positive value. From these statistical results, the first hypothesis is supported: a better Penta Helix leads to higher Organizational Innovativeness. The second hypothesis is also accepted. This is evidenced by the t-value (9,930) which is greater than 1.96 with a positive value, it means that a better Penta Helix can foster the creation of Product Innovation Performance. The same applies to the influence of Organizational Innovativeness and Product Innovation Performance which shows a positive and significant influence because the t-value (4,850) is greater than 1.96 so that the third hypothesis is supported.

F. Indirect Influence Test

The indirect influence test was conducted to test the third hypothesis. To determine the indirect influence, the authors used a single test. If the t-value is greater than 1.96, the indirect influence is significant. Based on the path coefficient, the magnitude of the influence of Penta Helix through Organizational Innovativeness on Product Innovation Performance as shown in Table 2 is 0.427 and 0.919, so the calculation is = (0.427 x 0.465) = 0.198 or 19.8%. The results of this calculation mean that the magnitude of the influence of Penta Helix on Product Innovation Performance through Organizational Innovativeness is 19.8%. The resulting t-value was 4.091 and this value was greater than 1.96. This means that the influence of Penta Helix on Product Innovation Performance through Organizational Innovativeness is significant.

G. Discussion

According to the analysis in the previous explanation, Penta Helix has a positive and significant impact on Organizational Innovativeness. The Penta Helix indicator that has the highest score based on the results of the questionnaire is the community and government, while the lowest is the media. This means that the innovation of the creative economy startup organizations of MSMEs has made continuous improvements with high motivation and confidence through encouraging the synergy of the Penta Helix elements. They are also optimistic about their business development and attentive. MSMEs creative economy startups that support Jember tourism destinations, especially culinary traders around the coast, are dominated by village residences who are known to be friendly people. Their behavior makes customers feel good about consuming the food there and influences their judgment about their culinary endeavors. These findings support research from [5] and [6] who found that Penta Helix has a positive and significant influence on Organizational Innovativeness.

Penta Helix affects Product Innovation Performance positively and significantly. When customers rate the Product Innovation Performance that is positively impressed on them based on the buyer's appreciation and sales performance, which customers have never experienced before, they feel that the atmosphere of managing the business and the product is unique and cannot be imitated by its competitors. This finding is consistent with research from [7] who found that the Penta Helix can be a tool to achieve sustainable Product Innovation Performance.

This study also found that Organizational Innovativeness affects Product Innovation Performance positively and significantly. The mediating role of Organizational Innovativeness on the influence of Penta Helix on Product Innovation Performance is significant although the effect is small. This supports research from [9]; who argue that the Organizational Innovativeness strategy can be one of the keys to achieving Product Innovation Performance because 'customer oriented' thinking is becoming a trend and Organizational Innovativeness has been considered as a new source of Product Innovation Performance in a company.

H. Novelty

Based on the results of the study and tracing of previous research results, the findings that can be expressed as a result of this research are that Product Innovation Performance can be built through good Penta Helix supported by the Organizational Innovativeness of the MSMEs creative economy startup that is firmly embedded. In summary, these findings can be described as a conceptual model produced in this study, namely "Conceptualization and Improvement of Penta Helix-based Entrepreneur Product Innovation Performance and Organizational Innovativeness of MSMEs creative economy startup" is novelty because it has a novelty with the category of development (Innovation).

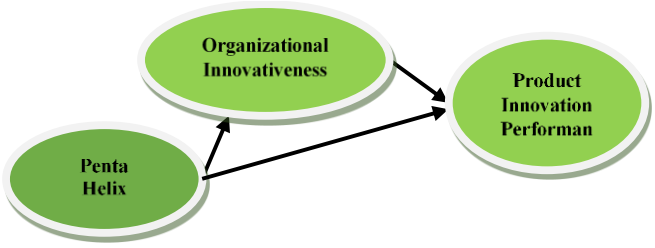

Fig. 1. Research Novelty "Conceptualization and Improvement of Penta Helix-based Entrepreneur Product Innovation Performance and Organizational Innovativeness of MSME creative economy startup"

V. CONCLUSION

Penta Helix and Organizational Innovativeness of MSMEs creative economy startup have a positive and significant impact on Product Innovation Performance. The statistical results also show that Organizational Innovativeness can mediate the influence of Penta Helix on Product Innovation Performance. From a practical perspective, these findings can benefit creative economy startup players who support Jember tourism destinations by better understanding the quality elements of the Organizational Innovativeness of MSMEs creative economy startup to improve Product Innovation Performance.

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