
The Influence of Entrepreneurial Characteristics and Business Capital on Performance in SMEs Based on Seafood Products Mediated by Product Innovation in Tanjung Jabung Barat Regency

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ABSTRACT

This study analyzes and explains the influence of entrepreneurial characteristics and business capital on SME performance, with product innovation as a mediating variable, among seafood-based SMEs in Tanjung Jabung Barat Regency. This study uses a quantitative descriptive analysis method with primary data and a saturated sampling technique, involving 166 business actors. The analysis tool used is the SEM (Structural Equation Modeling) method, using Smart PLS Ver 3, using stages, namely outer model analysis, inner model, and indirect effect. The results show that entrepreneurship characteristics, business capital, and product innovation directly affect the performance of SMEs based on processed food products in Tanjung Jabung Barat Regency. Business capital directly affects product innovation for seafood-based SMEs in West Tanjung Jabung Regency. Business capital affects the performance of seafood-based SMEs in West Tanjung Jabung Regency, with product innovation as a mediating variable. Entrepreneurial characteristics do not affect product innovation in processed-food SMEs in West Tanjung Jabung Regency. Entrepreneurial characteristics do not affect SME performance in West Tanjung Jabung Regency SMEs based on processed food products, with product innovation as a mediating variable.

Keywords: *Characteristics of Entrepreneurship, Business Capital, Product Innovation, SME Performance*

How to Cite:

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1. INTRODUCTION

SMEs based on processed seafood products can also enter the scope of the creative economy because they have their own characteristics. Because the culinary sector is also included in one aspect of the scope of the creative economy, namely the culinary industry involving restaurants, packaged food, and culinary experiences, it is also part of the creative economy (Siswanto, Ari, et al., 2023). In line with the Ministry of Tourism and Creative Economy (Kemenparekraf), the creative economy is defined as a sector that depends on welfare and job creation through individual creativity, skills, and talents (Kemenparekraf, 2020).

The seafood sector, especially in coastal areas such as Tanjung Jabung Barat Regency, Jambi Province. Taking advantage of the great potential of existing marine resources. Fisheries play a significant role in coastal communities' economies and contribute to regional food security. In addition, fisheries depend on natural resources and contribute to economic development (Anna, 2019), and they can be further developed into value-added products that can penetrate domestic and international markets. By fully utilizing marine potential, SMEs in this sector can play a strategic role in strengthening the local economy, opening wider markets, and improving competitiveness (Oum & Wang, 2020).

Based on the existing issues, SMEs play an important role in addition to contributing to the creation of the Gross Domestic Product (GDP), MSMEs also play a key role socially by reducing unemployment (Woźniak et al., 2019). MSMEs are key pillars of the industry and help build a strong commercial sector, spurring innovation and creativity that support and accelerate industrialization (Haryati et al., 2021). Thus, it is important to re-examine how entrepreneurial characteristics and business capital affect MSME performance, with product innovation as a mediating variable, especially in the processed food sector. Some studies measure SME performance using two alternative indicators: increased production capacity and improved product or service quality (Exposito & Sanchis-Llopis, 2018). Innovation strategy is the most crucial factor for small and medium-sized industries, especially in improving operational reliability. (Hewitt & van Rensburg, 2020). Product innovation is one of the most important competitive factors for success, given the rapidly changing business environment. Therefore, innovation is expected to help SMEs overcome the obstacles they face (Malerba & McKelvey, 2020).

Several perspectives describe the characteristics of entrepreneurship; for example, Doern et al. (2019) state that entrepreneurship is the process of using creativity and innovation to solve problems and find opportunities to improve quality of life. An entrepreneur can identify and evaluate business opportunities, understand the resources needed to seize them, and take the right steps to achieve success. Thus, entrepreneurship is a behavior that directs resources toward achieving future goals using tricks and strategies in business operations (Saraswati, 2020). There are four dimensions in entrepreneurial behavior, namely (1) individuals, (2) organization, (3) process, and (4) the environment. The soul of the individual will always be involved in business, including confidence, confidence in abilities in the business world, and the courage to face risks that are the hallmark of every entrepreneur (Adomako et al., 2018).

Artaya et al. (2018) describe the characteristics of entrepreneurship as including (1) self-confidence; (2) focus on tasks and results; (3) Ability to take risks; (4) Leadership skills; (5) Creativity; and (6) Vision for the future. Meanwhile, according to (Adomako et al., 2018), it describes several characteristics of entrepreneurship, including (1) the drive to achieve excellence; (2) personal liability; (3) moderate risk-taking tendencies; (4) the ability to predict outcomes; (5) motivation through feedback; (6) energetic activities; (7) orientation to the future; (8) skills in organizing organizations; and (9) a cautious attitude towards financial management. In the same context, Malerba and McKelvey (2020) note 13 entrepreneurial characteristics similar to those above, including motivation to return capital immediately and motivation to excel compared to others. Based on experts' opinions, the most important entrepreneurial characteristic is the ability to organize resources through a process to achieve the goal of making the environment a business habitat.

One crucial resource in running a business is business capital. Business capital comes from the production process and is reused for further production activities (Era, 2020). In contrast, Shvets et al. (2019) explain capital more specifically as cash, credit, the right to produce and sell a product or patent, and owned machinery and buildings. Capital can also include total ownership rights over the investment amount, surplus, and undivided profits. This relates more to the company's wealth and liabilities listed on the balance sheet, which indicates that capital is a long-term fund for the company: all items on the right side of the company's balance sheet, except current liabilities (Fatica, 2018). Thus, business capital includes individuals' wealth and liabilities used to gain or increase wealth. In terms of the source, business capital can come from internal or external sources (Andjarwati et al., 2021).

Several previous studies have found that entrepreneurial characteristics positively and significantly affect business performance (Saraswati, 2020). However, some studies also show that entrepreneurial characteristics have a negative and

significant impact on business performance (Aisyah et al., 2017; Hyuk et al., 2019; Jin et al., 2017) examined the dimensions of entrepreneurial behavior related to business performance and found that entrepreneurial traits such as confidence, courage to take risks, and leadership have a positive influence on business success.

In addition, business capital also plays an important role in achieving optimal business performance. (Fatica, 2018) said that the business capital factor has a positive and significant influence on business growth, which is in line with the results of research (Shvets et al., 2019), which shows that Business Capital partially has a positive effect on business performance. Based on this background, this research is worthwhile for several reasons. First, West Tanjung Jabung Regency has great potential for the seafood industry. Second, the model of SME operational performance related to entrepreneurial characteristics, business capital, and product innovation still needs review, as previous studies have reported mixed findings.

2. LITERATURE REVIEW

2.1. Grand Theory Knowledge-Based View

Based on the Knowledge-Based View (KBV), knowledge is the most important aspect of business management; therefore, to succeed in business, human resources must possess it. Company performance can be viewed in various ways, such as leadership, meeting customer needs, producing quality products, generating income, and, most importantly, having a high level of knowledge (Ermawati & Arumsari, 2021).

2.2. Entrepreneurship

Entrepreneurship is the process of identifying, developing, and bringing a vision to life. The vision can be in the form of innovative ideas, opportunities, or a better way to run things. This process results in creating new businesses under conditions of risk or uncertainty. In line with developments and challenges such as the economic crisis, the understanding of entrepreneurship, both through formal education and training at all levels of entrepreneurial society, is developing. People who carry out entrepreneurial activities are called entrepreneurs. The question arises as to why an entrepreneur has a different way of thinking from humans in general. They are motivated by soul-calling, perceptions, and emotions closely related to values, attitudes, and behaviors as superior human beings (Wicaksana & Rachman, 2018).

2.3. SME Performance

Performance is the success a person achieves based on the activities carried out in their work (Puspitasari & Darwin, 2021). Business performance results from an individual's efforts completed through their tasks in the company within a certain period. These results reflect the value or standards of the company for which the individual works. These measures include long-term profitability, increased sales, liquid resources, investment capacity, and customer loyalty. (Latifah et al., 2021). Meanwhile, Fatica (2018) states that Business performance is a company's level of achievement in a given period. Optimal business performance is characterized by good sales growth, continuously increasing profits, and continuous capital increases. According to Anifowose & Ghasemi (2022), SME business performance is measured using several indicators, namely. 1. SME customer satisfaction, 2. SME quality development, 3. SME cost management, 4. SME Responsiveness, 5. SME Productivity.

2.4. Characteristics of Entrepreneurs

Entrepreneurship is the ability to create new and unique things (Locke, 2000). Meanwhile, Doern et al. (2019) explain that entrepreneurship is the process of applying creativity and innovation to solve problems and find opportunities to improve quality of life. Saraswati (2020) states that an entrepreneur is an individual who can identify and evaluate business opportunities, assess the resources needed to take advantage of them, and take the right steps to ensure success. Therefore, entrepreneurship is a behavior that uses resources to achieve future goals through tricks and strategies in a process that makes the environment a business habitat. According to (Malerba & McKelvey, 2020), measuring the characteristics of an entrepreneur using several indicators, namely: 1. Motivation to return capital immediately, 2. Motivation to be the best, 3. Confidence, 4. Ability to manage assets, connections, and workforce, 5. Ability to manage risk

2.5. Business Capital

One important resource in running a business is business capital. Business capital is the product of production that is used again for further production activities (Era, 2020). However, Shvets et al. (2019) explain in more detail that capital can take

the form of cash, credit, the right to produce and sell goods, patents, machinery, buildings, and ownership rights over investment amounts, surpluses, and undivided profits. Capital is often interpreted as a company's wealth and liabilities listed on the balance sheet, meaning it represents the company's long-term funds, except for short-term liabilities (Fatica, 2018). According to Shvets et al. (2019), measuring the characteristics variables of entrepreneurship uses several indicators, namely: 1. Availability of Human Resources, 2. Access to Financing, 3. Infrastructure, 4. Community Involvement, 5. Government Policies.

2.6. Product Innovation

Product innovation is the process of developing and launching new goods or services that offer superior features, benefits, or quality to products already on the market. Product innovation includes not only creating new goods but also significantly improving existing products, such as through design, function, or the application of new technologies to improve performance and appeal to consumers. Product innovation aims to meet changing market needs, improve customer satisfaction, and create a competitive advantage (Tryon, 2016). According to Antunes et al. (2021), measuring product innovation variables uses several indicators, namely: 1. Different and innovative new products/services. 2. New and innovative technology. 3. Innovative products/services in the past two years. 4. Product/service innovation to increase market share and yield.

3. METHODOLOGY

Data analysis was carried out using the Partial Least Squares (PLS) method. PLS is a multivariate statistical technique that performs comparisons between multiple dependent variables and multiple independent variables. PLS is a variant-based SEM statistical method designed to solve multiple regressions when specific problems occur in the data, such as small research sample sizes, missing data, and multicollinearity (Ghozali, 2016). The PLS method was selected because this study includes three latent variables formed with formative indicators that have a moderating effect. The formative model assumes that a latent construct or variable influences the indicator, with causality flowing from the construct to the indicator or manifest variable (Ghozali, 2016). Ghozali (2016) also states that the formative model assumes indicators affect the construct, with causality running from the indicator to the construct. PLS shifts from measurement analysis to model parameter estimation and, ultimately, prediction. So the focus shifts from estimating and interpreting parameter significance to the validity and accuracy of predictions.

3.1. Partial Least Squares (PLS) Method Measurement

The estimation of parameters in PLS includes 3 things, namely (Ghozali, 2016): 1) The weight estimate is used to create a latent variable score. 2) Path estimation that connects latent variables and load estimation between latent variables and indicators. 3) Means and location parameters (regression constant values, intercepts) for indicators and latent variables. To obtain these three estimates, PLS uses a three-stage literacy process, and each iteration stage produces an estimate. The first stage estimates weights, the second stage estimates the inner and outer models, and the third stage estimates means and location (constant). In the first two stages, the iteration process uses a deviation approach (deviation) from the mean value (average). In the third stage, the estimation can be based on the original data matrix and/or the results of estimating the path weights and coefficients in the second stage. The purpose is to calculate and locate the parameters (Ghozali, 2016).

3.2. Partial Least Squares (PLS) Steps

Here are the steps in the analysis with PLS (Ghozali, 2016): 1) Step One: designing a structural model (inner model). At this stage, the researcher formulates a model of the relationship between constructs. 2) Step Two: Designing a Measurement Model (outer model). At this stage, the researcher defines and specifies the relationship between the latent construct and its indicators, whether reflective or formative. 3) Step Three: Constructing a path chart. The main function of building a path chart is to visualize the relationships between indicators and their constructs, as well as between constructs, making it easier for the researcher to see the model as a whole. The relationships between variables in the flowchart describe the causal relationships between constructs in the theoretical model built in the first stage. A flowchart depicts relationships between constructs with straight arrows, showing the direct causal relationship from one construct to another. Exogenous constructs are independent variables not predicted by other variables. An exogenous construct is a construct that is addressed by a line with one arrow tip (Ghozali, 2016). Measurement model equation:

$$X = \Lambda X \epsilon + \vartheta \Lambda X \epsilon + \vartheta$$

$$X = \Lambda y \eta + \epsilon \Lambda y \eta + \epsilon$$

The mathematical equation in this study, which has been explained in the path diagram, is the structural model equation (inner model) (Ghozali, 2016):

$$\begin{aligned} \eta_2 &= \gamma \xi + \beta_1 \xi_1 + \beta_2 \xi_2 + \epsilon \\ \eta_1 &= \gamma \xi + \beta_1 \xi_1 + \beta_2 \xi_2 + \eta_2 + \epsilon \end{aligned}$$

Information:

ξ_1	= Entrepreneurial Characteristics (X1)
ξ_2	= Working Capital (X2)
η_1	= SME Performance (Y)
η_2	= Product Innovation (Z)
λ	= Weight of Variable Latent Factor with Its Indicator
δ	= Measurement Error of Exogenous Latent Variable Indicator
ϵ	= Measurement Error of Endogenous Latent Variable Indicator
γ	= Direct Influence Coefficient between Exogenous Latent Variables and Endogenous Latent Variable
β	= Coefficient of Direct Influence between Endogenous Variable and Endogenous Latent Variable

3.3. Analytical Techniques

In this study, the analysis technique used is Partial Least Squares (PLS). PLS is a variance-based Structural Equation Modeling (SEM) approach. According to Ghozali (2016), PLS is an alternative approach that changes from a covariance-based SEM approach to a variance-based approach. PLS is a powerful analytical method that relies on fewer assumptions. This Partial Least Squares approach does not assume specific data types. Data can be nominal, categorical, ordinal, interval, or ratio. This analysis uses Smart PLS software, which employs a bootstrapping (random duplication) method. This PLS technique is divided into two stages, namely: 1). Measurement model test, to test the validity and reliability of the design of each indicator. 2). Structural model test, to find out if there is an influence between variables between constructs.

4. FINDINGS AND DISCUSSION

The PLS measurement model design matters because it determines whether indicators are reflective or formative. The reflective model mathematically treats indicators as sub-variables influenced by latent variables, meaning the same factors (the latent variables) influence them. This study uses a reflective model. This study used SmartPLS software version 3.00 to input data and calculate each indicator. In this study, all latent variables had reflective indicators.

4.1. Convergent Validity Testing

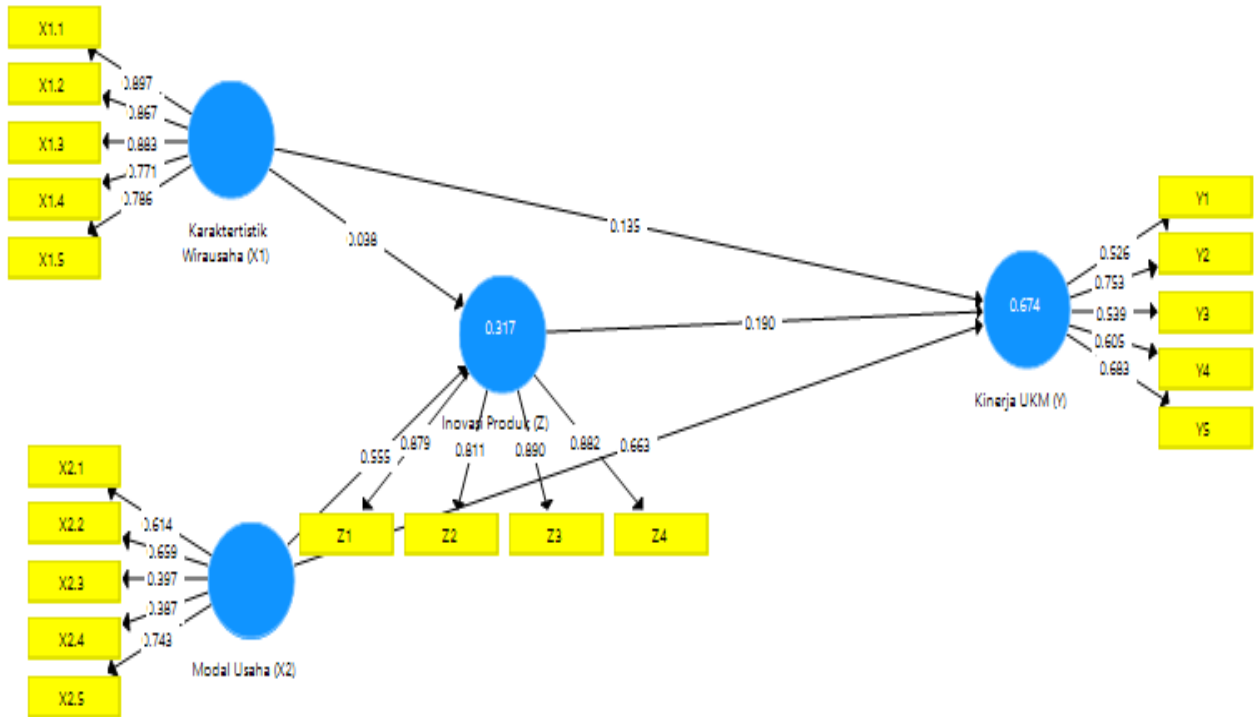
Convergent validity assesses the validity of each relationship between an indicator and its latent construct or variable. PLS-SEM has two types of validity: convergent validity and discriminant validity. Convergent validity means that a set of indicators represents a single latent variable and that the latent variable underlies them.

4.2. Loading Factor

Outer loading testing is carried out to prove that an indicator in a construct has the largest loading factor in the construct it forms than the loading factor with other constructs. The results of the initial model calculation of the research can be seen in the following figure:

Figure 1

Results of the Initial Research Model Calculation



Information:

Entrepreneurial Characteristics (X1)

Working Capital (X2)

SME Performance (Y)

Product Innovation (Z)

Source: Smart PLS 3 Processed Data (2025)

The image above is the first step to answer research objectives 1 to 7. The figure above shows that there are several indicators of the external loading value below 0.70, called the loading factor value, namely in the Business Capital (X2) variable indicators numbers 1, 2, 3, and 4, then for the SME Performance variable (Y) it is in numbers 1, 3, 4, and 5. For more details, please see the following table:

Table 1
Outer Loading

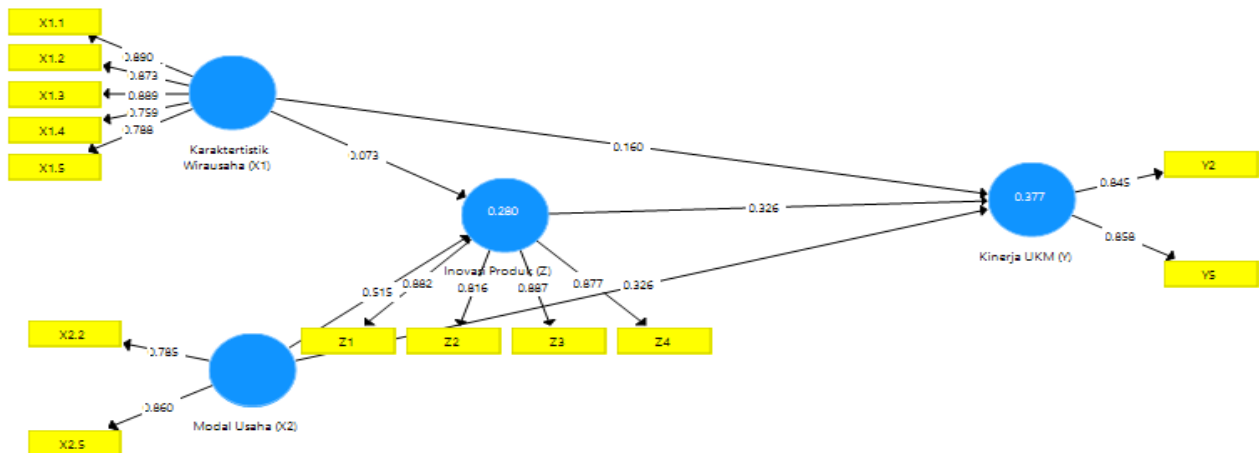
	Entrepreneurial Characteristics (X1)	Working Capital (X2)	SME Performance (Y)	Product Innovation (Z)
X1.1	0,897			
X1.2	0,867			
X1.3	0,883			
X1.4	0,771			
X1.5	0,786			
X2.1		0,614		
X2.2		0,659		
X2.3		0,397		
X2.4		0,387		
X2.5		0,743		
Y.1			0,526	

	Entrepreneurial Characteristics (X1)	Working Capital (X2)	SME Performance (Y)	Product Innovation (Z)
Y.2			0.753	
Y.3			0.539	
Y.4			0.605	
Y.5			0.683	
Z.1				0.879
Z.2				0.811
Z.3				0.890
Z.4				0.882

Source: Smart PLS 3 Processed Data (2025)

Figure 1 and Table 1 show that some loading factors are below 0.70. The results of the third model are considered unreliable because several loading factors are below 0.70, according to the set criteria (Ghozali, 2016). In the loading factor test, indicators with a loading factor below 0.70 are eliminated. The results of the model calculation after the elimination of some of these indicators are seen in the following image:

Figure 2
Calculation Results of the Initial Model with Deleted Indicators



Information:
Entrepreneurial Characteristics (X1)
Working Capital (X2)
SME Performance (Y)
Product Innovation (Z)

Source: Smart PLS 3 Processed Data (2025)

After the removal is carried out, the outer loading table For more details, you can see Table 2:

Table 2
Outer Loading

	Entrepreneurial Characteristics (X1)	Working Capital (X2)	SME Performance (Y)	Product Innovation (Z)
X1.1	0,890			
X1.2	0,873			
X1.3	0,889			
X1.4	0,759			
X1.5	0,788			
X2.2		0,785		
X2.5		0,860		
Y.2			0.845	
Y.5			0.858	
Z.1				0.882
Z.2				0.816
Z.3				0.887
Z.4				0.877

Source: Smart PLS 3 Processed Data (2025)

Figure 2 and Table 2 show the results after removing indicators that do not meet the loading-factor requirement, indicating that all indicators for each variable have outer loadings above 0.70; therefore, the variables are in a realistic condition.

4.3. Average Variance Extracted (AVE)

Next, we move on to another measure to determine convergent validity at the construct level: average variance extracted (AVE). The outer measurement model states that AVE meets convergent validity if the AVE value exceeds the average variance extracted, with a threshold of 0.50. AVE value results are as follows:

Table 3
Average Variance Extracted Value

Variable	AVE Value	Information
Entrepreneurial Characteristics (X1)	0.750	Valid
Working Capital (X2)	0.708	Valid
SME Performance (Y)	0.725	Valid
Product Innovation (Z)	0.678	Valid

Source: Smart PLS 3 Processed Data (2025)

Table 3 shows that all of the AVE values above show a value of >0.50, where the AVE value of each construct or indicator on the variables characteristics of entrepreneurship (0.750), business capital (0.708), SME performance (0.725), and Product Innovation (0.678) can be declared valid. Accordingly, the construct meets the validity test at the convergence stage. The next stage is to conduct a discriminant validity test. In PLS, the discriminant validity test uses cross-loadings. Cross-loadings are an early approach to assessing discriminant validity and are complemented by Cronbach's Alpha. The discriminant validity test uses cross-loading values and is carried out to ensure that each concept of a latent variable differs from other variables. An indicator meets discriminant validity if its cross-loading value is greater than 0.70. The results of the discriminant validity test are as follows:

Table 4
Cross Loading

	Entrepreneurial Characteristics (X1)	Working Capital (X2)	SME Performance (Y)	Product Innovation (Z)
X1.1	0,890	0.139	0.230	0.132
X1.2	0,873	0.065	0.201	0.098
X1.3	0,889	0.162	0.269	0.183
X1.4	0,759	0.053	0.127	-0.022
X1.5	0,788	-0.019	0.055	0.053
X2.2	0.195	0,785	0.386	0.384
X2.5	0.030	0,860	0.461	0.474
Y.2	0.188	0.452	0.845	0.421
Y.5	0.230	0.429	0.858	0.462
Z.1	0.185	0.439	0.508	0.882
Z.2	0.053	0.506	0.380	0.816
Z.3	0.117	0.426	0.442	0.887
Z.4	0.119	0.448	0.463	0.877

Source: Smart PLS 3 Processed Data (2025)

Based on Table 4, all indicators in the research variables have cross-loading values greater than 0.70. Based on the results, the indicators used in this study have good discriminant validity in compiling the variables because all indicators have a cross-loading value greater than 0.70. Based on the results, the indicators used in this study have good discriminant validity in compiling their respective variables.

4.4. Reliability Testing

The composite reliability test is carried out to determine the extent to which a measuring instrument can be trusted. (Ghozali, 2016) All variables are declared reliable if the loading factor value is above 0.70. The composite reliability and Cronbach's alpha values of each variable can be seen in Table 5 as follows:

Table 5
Composite Reliability

Variable	Composite Reliability	Cronbach Alpha	Information
Entrepreneurial Characteristics (X1)	0,924	0,904	Reliable
Working Capital (X2)	0,807	0,528	Reliable
SME Performance (Y)	0,841	0,621	Reliable
Product Innovation (Z)	0,923	0,888	Reliable

Source: Smart PLS 3 Processed Data (2025)

Based on Table 5 of the composite reliability test results and Cronbach's alpha, all variables are reliable because they have composite reliability values greater than 0.70. This means the variables Entrepreneurial Characteristics (0.924), Business Capital (0.807), SME Performance (0.841), and Product Innovation (0.923) are reliable in the research data and can be used to produce the best research.

4.5. Inner Model Evaluation

The inner model was tested by comparing the p-value of each path coefficient with the significance level of $\alpha = 0.05$. The test can be said to be very significant if the p-value is less than or equal to 0.05 ($p\text{-value} \leq 0.05$) or uses a table t-value of 1.96 with the criteria of rejecting and accepting the hypothesis, i.e., if the t-statistic $> t$ calculated, the hypothesis is rejected, and if the t-statistic $< t$ calculated, then the hypothesis is accepted. Structural model testing in SEM-PLS analysis uses SmartPLS.3, i.e., the determination coefficient (R^2), to measure how well the model explains the variance of bound variables. Ghozali (2016) noted that the determination coefficient measures the combined ability of exogenous latent

variables to predict endogenous variable constructs; that is, it represents the sum of variance in endogenous constructs explained by all associated exogenous constructs. The R^2 value ranges from 0 to 1, with higher levels indicating a higher level of prediction accuracy. As with multiple regression, the adjusted determination coefficient (Adjusted R^2) is used to avoid bias toward complex models. This criterion is modified according to the number of exogenous variable constructs (Ghozali, 2016).

4.6. R Square

When assessing the model with PLS, it starts by examining the R-Square for each dependent latent variable (Ghozali, 2016). Table 4.16 is the result of R-square estimation using SmartPLS 3 in:

Table 6
R-Square Value

Variable	R-Square	Adjusted R Square
SME Performance (Y)	0.377	0.366
Product Innovation (Z)	0.280	0.271

Source: Smart PLS 3 Processed Data (2025)

Table 6 shows the R-square values for SME performance (0.377) and product innovation (0.280). This indicates that entrepreneurial characteristics and business capital explain 37.70 percent of the variation in SME performance in West Tanjung Jabung Regency seafood-based SMEs, which is categorized as quite strong.

Next, entrepreneurial characteristics and business capital influence product innovation for seafood products in West Tanjung Jabung Regency by 28.00 percent, which falls into the quite strong category. The internal evaluation of the model was carried out using a bootstrapping test, which produced the R-squared and Q-squared determination coefficients and hypothesis testing. The results of the internal model evaluation are described as follows.

4.7. Q Square

The Q2 test value is assessed by examining Q^2 (predictive relevance). Q^2 measures how well the model and its parameter estimates reproduce the observations. A Q^2 value greater than zero indicates that the model is good, and a Q^2 value greater than 0 indicates that the model does not have predictive relevance.

Table 7
Construct Cross-validated Redundancy

Variable	SSO	SSE	$Q^2 (=1-SSE/SSO)$
Entrepreneurial Characteristics (X1)	830.000	830.000	
Working Capital (X2)	332.000	332.000	
SME Performance (Y)	332.000	245.859	0.259
Product Innovation (Z)	664.000	530.667	0.201

Source: Smart PLS 3 Processed Data (2025)

Based on Table 7, Q^2 is the endogenous variable for SME performance ($0.259 > 0$), and product innovation is also positive ($0.201 > 0$), so the predictions are considered correct.

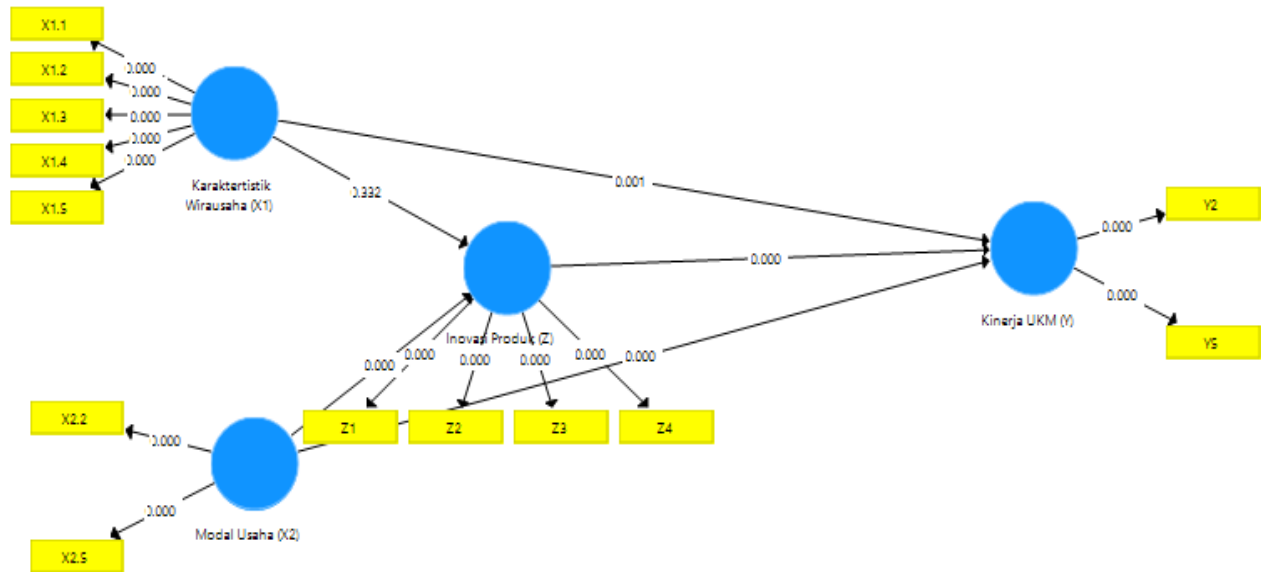
4.8. Model Structural Testing

In the analysis of PLS SEM, the value of the structural model in this study can be seen from the value of direct effects or the term is also called the path coefficient. Furthermore, path coefficients between constructs are estimated to assess the significance and strength of the relationship and to test the hypothesis.

The path coefficient is the estimated value of the path relationship in the structural model obtained using the bootstrapping method. This test aims to minimize problems with the research data. If the P-values are smaller than the predetermined

significance level ($P < 0.05$), the relationship between the variables can be considered significant. The test results using the bootstrap method from the PLS SEM analysis are:

Figure 3
Bootstrapping



Source: Smart PLS 3 Processed Data (2025)

To find out the structural model in this study, you can see the following table:

Table 8
Path Coefficient

	Path Coefficient	P Values
Entrepreneurial Characteristics (X1) -> SME Performance (Y)	0,160	0.001
Entrepreneurial Characteristics (X1) -> Product Innovation (Z)	0,073	0.332
Working Capital (X2) -> SME Performance (Y)	0,326	0.000
Working Capital (X2) -> Product Innovation (Z)	0,515	0.000
Inovasi Produk (Z) -> SME Performance (Y)	0,326	0.000
Entrepreneurial Characteristics (X1) -> Product Innovation (Z) -> SME Performance (Y)	0,024	0.353
Working Capital (X2) -> Product Innovation (Z) -> SME Performance (Y)	0,168	0.000

Source: Smart PLS 3 Processed Data (2025)

Based on the results of the patch coefficient analysis in table 8 above, it can be concluded as follows: The direct influence of entrepreneurial characteristics has a significant effect on the performance of SMEs based on seafood products in West Tanjung Jabung Regency because the p value is $0.001 < 0.05$ and has a coefficient value of 0.160 which means that if the characteristics of entrepreneurs increase by one percent, the performance of SMEs based on seafood products in West Tanjung Jabung Regency can be increased by 16.0%. This influence is positive.

The direct influence of entrepreneurial characteristics does not have a significant effect on product innovation based on seafood products in West Tanjung Jabung Regency because the p-value is $0.332 > 0.05$ and has a coefficient value of 0.073, which means that if entrepreneurial characteristics increase by one percent, the innovation of products based on seafood products in West Tanjung Jabung Regency can increase by 7.3%. This influence is positive.

The direct influence of business capital has a significant effect on the performance of SMEs based on seafood products in West Tanjung Jabung Regency because the p-value is $0.000 < 0.05$ and has a coefficient value of 0.326, which means that if business capital increases by one percent, the performance of SMEs based on seafood products in West Tanjung Jabung Regency can increase by 32.6%. This influence is positive.

The direct influence of business capital has a significant effect on the innovation of products based on seafood products in West Tanjung Jabung Regency because the p-value is $0.000 < 0.05$ and has a coefficient value of 0.515, which means that if the business capital increases by one percent, the innovation of products based on seafood products in West Tanjung Jabung Regency can increase by 51.5%. This influence is positive.

The direct influence of product innovation has a significant effect on the performance of SMEs based on seafood products in West Tanjung Jabung Regency because the p-value is $0.000 < 0.05$ and has a coefficient value of 0.326, which means that if product innovation increases by one percent, the performance of SMEs based on seafood products in West Tanjung Jabung Regency can increase by 32.6%. This influence is positive.

The indirect influence of entrepreneurial characteristics does not have a significant effect on the performance of SMEs based on seafood products in West Tanjung Jabung Regency through product innovation because the p value is $0.353 > 0.05$ and has a coefficient value of 0.024 which means that if the characteristics of entrepreneurs increase by one percent, the performance of SMEs based on seafood products in West Tanjung Jabung Regency can increase indirectly through product innovation by 2.4%. This influence is positive.

The indirect influence of business capital has a significant effect on the performance of SMEs based on seafood products in Tanjung Jabung Barat Regency through product innovation because the p value is $0.000 < 0.05$ and has a coefficient value of 0.168 which means that if the business capital increases by one percent, the performance of SMEs based on seafood products in Tanjung Jabung Barat Regency can increase indirectly through product innovation by 16.8%. This influence is positive.

4.9. Hypothesis Testing

The significance of the estimated parameters provides very useful information about the relationship between the study variables. The hypothesis test is based on the inner weight value in the output. Table 9 provides the estimated output for the structural model test.

Table 9
Direct Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Entrepreneurial Characteristics (X1) -> SME Performance (Y)	0,160	0,171	0,048	3,321	0,001
Entrepreneurial Characteristics (X1) -> Product Innovation (Z)	0,073	0,085	0,075	0,970	0,332
Working Capital (X2) -> SME Performance (Y)	0,326	0,326	0,085	3,832	0,000
Working Capital (X2) -> Product Innovation (Z)	0,515	0,513	0,071	7,250	0,000
Inovasi Produk (Z) -> SME Performance (Y)	0,326	0,318	0,076	4,272	0,000

Source: Smart PLS 3 Processed Data (2025)

Based on Table 9 in the PLS testing, each hypothesized relationship is statistically tested using simulations. In this case, the Bootstrapping method is applied to the sample. Bootstrapping also helps minimize the impact of abnormalities in research data. The results of the test with bootstrapping from the PLS analysis are as follows:

4.9.1. Hypothesis Test of the Influence of Entrepreneurial Characteristics on SME Performance

The hypothesis test results showed that the relationship between entrepreneurial characteristics and SME performance in processed food products in Tanjung Jabung Barat Regency had a path coefficient of 0.160. The t-value of the statistic is $3.321 > 1.96$, and the P value is 0.001, less than 0.05, so the H1 hypothesis is accepted. These results indicate that entrepreneurial characteristics have a positive and significant effect on SME performance. This means that if entrepreneurial characteristics increase, they will affect the performance of SMEs based on processed food products in Tanjung Jabung Barat Regency.

4.9.2. Hypothesis Test of the Influence of Entrepreneurial Characteristics on Product Innovation

The hypothesis test results showed that the relationship between entrepreneurial characteristics and product innovation for seafood products in Tanjung Jabung Barat Regency had a path coefficient of 0.073. The t-value is $0.970 < 1.96$, and the P value is 0.332, which is greater than 0.05, so H2 is rejected. These results indicate that the variable characteristics of entrepreneurship do not positively affect product innovation. This means that if entrepreneurs' characteristics improve, product innovation in seafood products in Tanjung Jabung Barat Regency will increase.

4.9.3. Hypothesis Test of the Influence of Business Capital on SME Performance

The hypothesis test results showed that the relationship between business capital variables and SME performance in Tanjung Jabung Barat Regency had a path coefficient of 0.326. The t-value is $3.832 > 1.96$, and the P-value is 0.000, which is smaller than 0.05, so H3 is accepted. These results indicate that business capital has a positive and significant effect on SME performance. This means that if business capital improves, the performance of SMEs based on processed food products in Tanjung Jabung Barat Regency will increase.

4.9.4. Test of the Hypothesis of the Influence of Business Capital on Product Innovation

The hypothesis test results showed that the relationship between business capital variables and product innovation based on seafood products in Tanjung Jabung Barat Regency had a path coefficient of 0.515. The t-value of $7.250 > 1.96$ and the P value of $0.000 < 0.05$, so H4 is accepted. These results indicate that business capital has a positive and significant effect on product innovation. This means that as business capital improves, product innovation in seafood products in Tanjung Jabung Barat Regency will increase.

4.9.5. Hypothesis Test of the Influence of Product Innovation on SME Performance

The hypothesis test results showed that the relationship between product innovation variables and SME performance based on seafood products in West Tanjung Jabung Regency had a path coefficient of 0.326. The t-value is $4.272 > 1.96$, and the P value is $0.000 < 0.05$, so H5 is accepted. These results indicate that product innovation variables have a positive and significant effect on SME performance. This means that if product innovation increases, the performance of SMEs based on processed food products in Tanjung Jabung Barat Regency will increase.

In looking at the indirect effect, it can be explained in the results of indirect effects described in the following table:

Table 10
Indirect Effects

	Original Sample (O)	Sample Mean (M)	Standard Deviation (STDEV)	T Statistics (O/STDEV)	P Values
Entrepreneurial Characteristics (X1) -> Product Innovation (Z) -> SME Performance (Y)	0,024	0,027	0,026	2,930	0,353
Working Capital (X2) -> Product Innovation (Z) -> SME Performance (Y)	0,168	0,163	0,044	3,793	0,000

Source: Smart PLS 3 Processed Data (2025)

4.9.6. Hypothesis Test of the Influence of Entrepreneurial Characteristics on SME Performance through Product Innovation

The results of the hypothesis test showed that the relationship of entrepreneurial characteristics variables to the performance of SMEs based on seafood products in West Tanjung Jabung Regency through product innovation as a mediation variable showed a path coefficient of 0.024 with a t-statistical value of $2.930 < 1.96$ and a P value of 0.353 greater than 0.05 so that the H6 hypothesis was rejected. These results indicate that entrepreneurial characteristics have a positive and significant effect on SME performance through product innovation. This means that, through product innovation, entrepreneurial characteristics do not indirectly affect SME performance based on processed food products in West Tanjung Jabung Regency.

4.9.7. Test of the Hypothesis of the Influence of Business Capital on SME Performance through Product Innovation

The results of the hypothesis test showed that the relationship of business capital variables to the performance of SMEs based on seafood products in West Tanjung Jabung Regency through product innovation as a mediation variable showed a path coefficient of 0.168 with a statistical t-value of $3.793 > 1.96$ and the P value of 0.000 was less than 0.05, so the H7 hypothesis was accepted. These results indicate that business capital has a positive and significant effect on SME performance through product innovation. This means that, through product innovation, business capital can indirectly affect the performance of SMEs based on processed food products in West Tanjung Jabung Regency.

5. CONCLUSION

The results directly show that entrepreneurial characteristics affect the performance of SMEs based on processed food products in West Tanjung Jabung Regency. Entrepreneurial characteristics do not affect product innovation for SMEs based on processed food products in West Tanjung Jabung Regency. Business capital affects the performance of seafood-based SMEs in West Tanjung Jabung Regency. Business capital affects product innovation for seafood-based products in West Tanjung Jabung Regency. Product innovation directly affects the performance of SMEs based on processed food products in West Tanjung Jabung Regency. The results indirectly show that product innovation does not moderate the influence of entrepreneurial characteristics on the performance of SMEs based on processed food products in West Tanjung Jabung Regency. Meanwhile, product innovation moderates the influence of business capital on the performance of SMEs based on seafood products in Tanjung Jabung Barat Regency.

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