

DEVELOPMENT OF SMALL, MICRO ENTERPRISES BASED (SMES) ON INNOVATION AND ENVIRONMENTAL SUSTAINABLE DEVELOPMENT IN WEST SUMATERA

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ABSTRACT

This research aims to know the development of innovation can affect environmental sustainability in the performance of sustainable Micro Small Enterprises. In addition to knowing the influence of innovation, this study will also answer how much direct result of innovation on environmental sustainability in developing sustainable Micro Small Business performance. Because this study using intervening variables will answer how much influence the intervening variable mediates between variables. This study used the Structural Equation Modeling analysis method using Amos 2.2 software on a sample of 190 respondents. The analysis results resulted in product innovation, process, and marketing having a significant positive effect on the development of sustainable SME performance. The magnitude of each hypothesis's value indicates that the CR and P-value values are already at the specified limit. The influence of Environmental Sustainability as a mediation variable can mediate between process and product innovations on SMEs' performance by 100% (full mediation) and 70% (partial mediation) between marketing innovations to the implementation of SMEs. Product innovation, process, and marketing are not necessarily for-profit purposes but must pay more attention to the environment in determining the innovation strategy implemented so that the development of SMEs in West Sumatra can be developed and sustainable.

Keywords: Innovation, Products, Processes, Marketing, Sustainable Environment, SMEs

INTRODUCTION

Tiny, Micro Enterprises (SMEs) have an essential role in Indonesia's economic development and economic driving motors. The number of SMEs reached 99.99% (64.1 million) of Indonesia's total companies, consisting of micro-enterprises at 98.68%, small businesses at 1.22%, and medium enterprises at 0.09% in 2018. Statistical data shows the contribution of MSMEs to Domestic Product Growth (GDP) of 57.30% in 2017 and 57.24% in 2018. This is on top of the gift of large companies to GDP. Besides, the SMEs sector can absorb approximately 116.4 million workers (96.82%) in 2017 and 116.9 million workers (97%) in 2018. Judging from the data of micro-enterprises, the percentage of small exports, the contribution to large GDP, and labour use are also significant compared to small and medium enterprises.

The company, as the core of any economic system, has a significant impact on sustainable development. In this case, Small and medium enterprises (SMEs) are socially and economically important for the national economy (Ciemleja & Lace, 2011) and serve as a social

key because they can reduce unemployment (Woźniak et al., 2019). Maintaining the sustainability of environmental functions is in human beings' interests, thus demanding responsibility and its role to maintain and improve the environment's carrying capacity and capacity. Sustainability of development must combine the environment, including natural resources, human resources, and artificial resource development, and be a means to achieve sustainability of growth and a guarantee for current and future generations' well-being and quality of life. This is the process for achieving sustainability goals (Baumgartner & Ebner, 2010) where economic growth, social cohesion, and environmental protection called the "triple bottom line" (Elkington, 1997) are treated equally and supportively.

The role of SMEs in sustainability can be seen in five main aspects: innovation development, social contribution, environmental contribution, good management and leadership practices, contribution to local network incentives, and NGOs (Dobрева & Ilieva-Koleva, 2015). Innovation Opportunities will enable the development of technologies centred on sustainable development efforts. It challenges the workforce to engage in business innovation training and develop innovation programs that align with improving business sustainability (Cooper, 2014). The challenges posed by society, the environment, and the economy have forced organizations to innovate, manage change, and adopt new sustainability activities (Martens & Carvalho, 2017). Innovation and sustainability have been studied separately, but the scope still exists in research related to the integration of innovation with sustainability.

SMEs in developing countries, the situation is exacerbated by communication gaps in the supply chain, low savings rates, and poor infrastructure, which also act as a significant obstacle for companies willing to move towards a sustainable way of doing business (Ciliberti et al., 2008). The World Commission for Environment and Development (WCED) report states that sustainable development requires companies to simultaneously develop long-term economic, social, and environmental principles (Galpin et al., 2015). Scepticism is found in many circles that argue that ecological integrity and social justice are at odds with economic prosperity (Galpin et al., 2015). Environmental, economic, and social sustainability has been identified as an essential driver for sustainable manufacturing. This study uses a systematic approach to sustainable manufacturing system analysis, taking into account integrated sustainable practices (Vinodh & Joy, 2012), the subsequent negative and collective impact of SMEs on environmental degradation may be more significant than that of large companies (Abdul-Rashid et al., 2017; Eze et al., 2013).

Sumatra is the second-largest island after Java in this regard; almost 18.61% of Indonesia's total business/company is located on the island of Sumatra. West Sumatra province is in fourth place as the province with the highest number of businesses, after North Sumatra, Lampung, and South Sumatra. The majority of companies are those engaged in large companies and retail or categorized as business fields with code G by BPS. This means that MSMEs have an essential role in the people's economy in West Sumatra, especially those engaged in the extensive trade and retail sector. The SME sector absorbs a lot of labour because large businesses in West Sumatra Province are also minimal. Therefore, SMEs' empowerment is a top priority for local governments to improve their communities' welfare.

The majority of businesses in West Sumatra Province are small micro-businesses that are expected to move up the class. So that if small micro-enterprises are developed optimally, it is expected to encourage the economic growth of the people of West Sumatra. From some previous research, the development of SMEs can be influenced by sustainable development (social, economic, and environmental) and innovation. Research conducted by (Chege & Wang, 2019)

innovation and ecological practices positively impact the performance of SMEs. Innovation is one of the critical factors affecting long-term companies in competitive markets (Naranjo-Valencia et al., 2016a).

Environmental, economic, and social sustainability has been identified as a sustainable manufacturing driver (Vinodh & Joy, 2012). Sustainable performance must be connected with sustainable development, which combines three dimensions: social, economic, and ecological (Ciemleja & Lace, 2011). The author will combine innovation and sustainable development in the development of Small Micro Enterprises from several previous studies.

According to Zindiye et al. (2012), sustainable development variables associated with coercive isomorphic pressures significantly impact all three sustainable development dimensions of an economic, environmental, and social nature. The implication is that governments, environmental pressure groups, and other stakeholders need to consider coercive pressures such as laws and regulations in pressuring small businesses to improve sustainability practices. For the business world, (Swanson & Zhang, 2012) argue that business depends on sustainable development and sustainable development depends on the industry. SMEs and large companies are considered essential for sustainable development, although SME activities have little effect (Jamil et al., 2015). SMEs have been valued as economic growth engines, poverty alleviation (Wang, 2016), rural development, innovation and technological development, and job creation. As such, their role in sustainable development should be essential and beneficial for research. In Masocha's research (2018), environmental sustainability relates positively and significantly to innovation, ecological and social actions of the company's performance. Previous studies have found a significant positive relationship between adoption and sustainable development practices and corporate performance among SMEs (Clemens, 2006). Wang and Sarkis alluded to the negative relationship between sustainability and the company's performance. Another study also found a partial positive relationship between sustainable development and corporate performance (Azevedo et al., 2011). Small business involvement in environmentally sound sustainable development practices is expected to significantly contribute to their overall business performance (Masocha, 2018).

Based on the above studies' results, the methodology of the research used by each researcher shows differences and similarities in variable-variables. The study will be researched where the difference with the above analysis is on the variable innovation. Therefore, the new research that needs to be examined is about innovations connected to sustainable development to analyze Small Micro Enterprises' development. This research focuses on Small Micro Enterprises because of the amount, contribution to GDP, and the absorption of a large workforce. The increase and change from Micro Business to Small Business is minimal, and its contribution to exports is tiny in West Sumatra. So that if Micro Small Business is developed optimally, it is expected to encourage economic growth of the people of West Sumatra.

The formulation of the problem that is expected to be answered in this study is to find out innovation can affect environmental sustainability in the development of sustainable Micro Small Business performance. In addition to knowing the influence of invention, this study will also answer how much direct and indirect effect of innovation on environmental sustainability in developing sustainable Micro Small Business performance. Because this study using intervening variables will answer how much power the intervening variable mediates between variables.

LITERATURE REVIEW

Product Innovation

Innovation is one of the most critical components of the dynamic development of small and medium enterprises, but to implement new ideas in operations, there must be close cooperation between companies, governments, education, and consumers (Chen et al., 2006; Dobрева & Ilieva-Koleva, 2015) indicated that there are several things that become indicators of product innovation, namely the company introduces product innovation with completely new attributes to the market, new products are very innovative in meeting customer needs, companies often adopt new ideas in the development of new products and companies introduce new products quickly to the market (Huo et al., 2019). According to (Naranjo-Valencia et al., 2016), innovation is an essential component of competitiveness, organizational structure, products, and services. Product innovation is a hallmark of value creation and building a variety of corporate resources. Integrating supplier resources is a common approach adopted by manufacturers to develop innovations (Song & Di Benedetto, 2008). Innovation is a key factor influencing its long-term success in the current competitive market (Naranjo-Valencia et al., 2016a).

Process Innovation

The role of regulation on innovation and competitiveness at the company level is positive (Boons et al., 2013). Process innovation can be defined as new techniques and processes introduced into operations that improve efficiency or effectiveness and lower production and shipping costs (Gunday et al., 2011a); (Un & Asakawa, 2015). Sepertinya (McWilliams & Siegel, 2000) also tends to show the leading role of innovation in the company's environmental sustainability practices (Erhemjamts et al., 2013).

Innovation refers to new applications of knowledge, ideas, methods, and skills that can harness the company's competitiveness (María, María, & Fuentes-fuentes, 2014). Process innovation can be defined as new techniques and processes introduced into operations that improve efficiency or effectiveness and lower production and shipping costs (Un & Asakawa, 2015; Gunday et al., 2011). There is empirical evidence that product and process innovation is positively linked to its performance and can bring the company a competitive advantage (Swink & Schoenherr, 2014). 12 Product and process innovations have different objective and competitive impacts (Un & Asakawa, 2015. Thurasamy (2017) uses process innovation indicators that learn a lot about the latest processes to competitors, follow the latest process developments, be the first to implement new strategies and often introduce functions that are very different from other industry methods.

Marketing Innovation

Market innovation focuses on how to serve best the target market (Shirokova et al., 2013). Marketing innovation should evaluate customer value perception and generate opportunities to meet customer needs with innovative products. Innovation is the most crucial factor that companies can use to repair all losses (O'Dwyer et al., 2009). Companies must follow market-based innovations to continue to develop their current products and services, better meet the needs of their customers and focus on market performance. Thus, the company uses

marketing innovation strategies to perform better. Gunday et al. (2011) use marketing innovation indicators that update product promotion techniques used for the promotion of current products and new products, update product pricing techniques used to determine the current product prices and new products, update contemporary and new product designs through changes such as appearance, packaging, shape, and volume without changing their basic technical and functional features and updating marketing management activities.

Environmental Sustainability

Responsible use of renewable and non-renewable resources, regulated pollution, and waste assimilation (Chow & Chen, 2012). Reduction of solid waste and water, environmental accidents and pollution emissions (González-Benito & González-Benito, 2006); (Zhu & Sarkis, 2004). Sustainable development has become a significant concept in business literature (N. Evans & Sawyer, 2010). According to Tilley & Fuller (2000), environmental sustainability is becoming increasingly crucial for the business sector. Scepticism is found in many circles that argue that ecological integrity and social justice are at odds with economic prosperity (Galpin et al., 2015).

Lack of capacity in terms of skills, awareness, knowledge, and financial ability, SMEs are bound to face the environment compared to large companies (Zindiye et al., 2012). Environmental sustainability contributes positively to the company's innovation, ecological and social performance. This study's findings significantly contribute to the practices and theories of small business and corporate performance by providing a more specific and lean perspective to approach the company's version (Masocha, 2018). Environmental Innovation reduces costs (e.g., energy management systems), minimizes risk (for example, through improved safety features), increases sales and profitability (for example, through the use of premium organic brands), enhances brand reputation and value, increases attractiveness as an employer and builds innovation capabilities (Klewitz et al., 2012).

Sustainable SME Performance

Performance is a success that has been achieved by people based on activities carried out in carrying out the work (Puspitasari & Darwin, 2021). According to Syafiqah et al. (2013), the company's performance results from a series of business processes with the sacrifice of various resources, such as human resources and finance. SME performance is the desired result of the organization's behaviour of the people in it. According to (Morgan & Berthon, 2008) states, new features, improvements, or benefits associated with new products can improve customer satisfaction, attract new customers, develop new market segments, improve sales and performance. According to Harash et al. (2014), business performance refers to business success that may vary and can be seen from the business's ability to obtain results and activities carried out. According to (Wheelen & Hunger 2006), performance measures the company's success in making decisions using resource use strategies effectively and efficiently.

Business Performance shifts from an economic-centered measure of performance to a sustainability standard (Elkington, 1998; Jovane et al., 2008; Spangenberg, 2004). The term 'sustainability is expressed by (Elkington, 1994) and is defined as an expansion of the corporate perspective that considers environmental, social and economic aspects. Today, more and more companies are pursuing sustainability goals by incorporating green initiatives into business practices (Maxwell et al., 2006; Teixeira et al., 2012). However, there is still a lack of studies

that consider the dimensions of the triple bottom line (i.e. environmental, economic and social aspects) simultaneously in assessing the impact of sustainable practices in the industry on sustainability performance. According to (Elkington, 1998), to drive the company towards sustainable performance, this requires a significant change from its focus on the triple bottom line dimension. A company's sustainability performance includes financial performance, social performance, and environmental performance. The company's financial performance reflects its profitability and may be influenced by various factors, such as concentration and growth or the size of the company (Beatriz et al., 2019).

Sustainability MSME performance is an opportunity for the development and growth of companies; instead of being as threatening as large companies, it will be more difficult for small and medium enterprises (SMEs) to achieve sustainable companies, due to lack of resources then, SMEs should effectively utilize their limited resources and prioritize performance factors (Hsu et al., 2017). Sustainable development requires companies to develop long-term economic, social, and environmental principles simultaneously. Thus, for companies to express sustainable development, they must incorporate the principles of economic prosperity, community welfare, and ecological promotion in products, policies, and business practices. The concept of sustainable development is becoming increasingly inevitable for the business world and continues to affect almost all business functions. The drivers for sustainability in SMEs, as identified by Hsu et al. (2017), are customers, governments, local communities, employees, insurance companies, banks, and large corporations.

METHODS

This study's analysis method is a quantitative analysis method using the Structural Equation Model (SEM) through AMOS software version 22. SEM is a combination of two different statistical methods of factor analysis developed in psychological and psychometric sciences and simultaneous equation models developed in econometrics (Ghozali, 2017). The data analysis approach using the Structural Equation Model (SEM) needs to be supported by several assumption tests that must be met, such as evaluating data normality, evaluating outliers, and residual testing (Hair et al., 2017). After everything has met the measurement criteria, the goodness of fit testing will be conducted to determine the data's suitability with the constructed path model.

RESULTS AND DISCUSSION

The normality test results in Amos data processing have resulted in the value of CR (Critical Ratio) kurtosis is in the range of ± 2.58 , and it can be concluded that the data has been distributed normally. The highest kurtosis CR number is 2,576 in the SUSTENV2 variable and is still below the specified value limit. Furthermore, in testing outliers, data has also met multivariate outliers determined based on the value of chi-square at the degree of freedom (degree of freedom) under the number of indicators at the significance of 0.001 (Ghozali, 2014). In this study, the value of Mahalanobis Distance was $X^2(0.001;18) = 42.3124$. Under the results of data processing Amos shows the value of Mahalanobis Distance is already below 42.3124. The highest score was found in respondent number 62 of 38,241. Residual testing has also produced residual values that are already between -2.58 and 2.58. Amos's output at standardized residuals produced the largest value of 1,740, far from experts' limit. It can be concluded that the residual value is also at the appropriate limit expected. Of all the tests that

have been done, it can be concluded that all tests are acceptable, and the data can be used to proceed on the next structural equation modelling overall test (Figure 1).

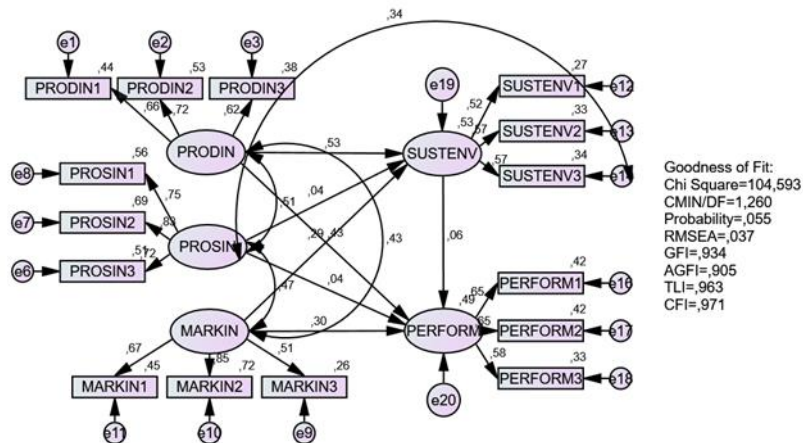


FIGURE 1
FULL STRUCTURAL MODEL

Since all SEM assumption tests have been met, the next step is to assess the fit model called Goodness of Fit under the cut-off value set by the experts. The structural model picture above has shown that Fit's Goodness already meets the criteria of Good Fit. The results of the research data resulted in all the indices on Goodness of Fit already Good Fit. This result was obtained after performing data processing techniques using model respecification techniques at the command of Modification Indices and standardized residual because it produces the Heywood case (Nurwulandari & Darwin, 2020).

The next step is to take measurements of each construct to assess its validity and reliability. The generally accepted reliability level is > 0.70, whereas the construction validity level is > 0.50 (Table 1).

Table 1 MEASUREMENT MODEL FIT							
Variable	Indicator	Loading Factor	Loading factor ²	Stand. Error	Construct Reliability	Variance Extracted	Discriminant Validity
Product Innovation	PRODIN1	0,66	0,44	0,17			
	PRODIN2	0,73	0,53	0,15			
	PRODIN3	0,62	0,38	0,19	0,80	0,89	0,94
	Σ	2,00	4,01	0,51			
Procces Innovation	PROSIN3	0,72	0,51	0,15			

	PROSIN2	0,83	0,69	0,11			
	PROSIN1	0,75	0,56	0,16	0,85	0,81	0,90
	Σ	2,30	1,76	0,42			
Marketing Innovation	MARKIN3	0,51	0,26	0,23			
	MARKIN2	0,85	0,72	0,10			
	MARKIN1	0,67	0,45	0,17	0,81	0,74	0,86
	Σ	2,03	1,43	0,49			
Environmental Sustainability	SUSTENV1	0,52	0,27	0,27			
	SUSTENV2	0,58	0,33	0,20			
	SUSTENV3	0,57	0,32	0,25	0,70	0,56	0,75
	Σ	1,67	0,93	0,72			
Sustainable SME Performance	PERFORM1	0,65	0,42	0,16			
	PERFORM2	0,65	0,42	0,17			
	PERFORM3	0,58	0,33	0,20	0,78	0,69	0,83
	Σ	1,87	1,17	0,53			

Variance Extracted values in each of the above variables result in a matter of > 0.50 . Then it can be concluded that each indicator can measure each variable with a valid evaluation. While the value in construct reliability also produces a value of > 0.70 . That is, all the high values produced by each indicator provide confidence consistent with its measurements (Table 2).

Hypothesis			Estimate	SE.	CR.	P	Evaluation
SUSTENV	<---	PRODIN	0,504	0,14	3,71	***	Accepted
SUSTENV	<---	PROSIN	0,058	0,01	4,11	***	Accepted
SUSTENV	<---	MARKIN	0,361	0,15	2,46	0,01	Accepted

PERFORM	<---	PRODIN	0,397	0,12	3,45	***	Accepted
PERFORM	<---	PROSIN	0,058	0,01	4,11	***	Accepted
PERFORM	<---	MARKIN	0,367	0,14	2,68	0,01	Accepted
PERFORM	<---	SUSTENV	0,058	0,01	4,11	***	Accepted
Sumber : Output Amos 22							

The first hypothesis proves that Product Innovation directly affects the sustainability of the environment in SME performance development produces significant positive value. The regression weights show a CR value of 3,713 > 1.96 and a P-value of 0.000 < 0.05. And the fourth hypothesis, Product Innovation, also directly affects sustainable SMEs' performance, resulting in significant positive values. Regression weights results show a CR value of 3,453 > 1.96 and P-value of 0.000 < 0.05. Then it can be concluded that the first and fourth hypotheses are acceptable. Innovation activities can create superior value and benefits, enabling SME companies to effectively use market innovation to sell different products and services in complex environments (Aksoy, 2017). This study's results are also similar to the opinion of (Vinodh & Joy, 2012), which produces a positive and significant value that explains environmental sustainability has been identified as an important driver for manufacturing sustainability. Product innovations that are carried out on target and under the market's wishes will influence the environment's sustainability. The Product Innovation measuring indicators used in this study have had a positive impact on environmental sustainability, such as using the most efficient resources available in the environment, recycling, reuse, reducing waste, use of renewable energy, using reduction or replacement of chemicals, and or hazardous materials.

The second hypothesis proves that Process Innovation directly affects the sustainability of the environment in SME performance development produces significant positive value. The regression weights show a CR value of 4,114 > 1.96 and a P-value of 0.000 < 0.05. And the fifth hypothesis, Process Innovation, also directly affects sustainable SMEs' performance, resulting in significant positive value. The regression weights result also shows the CR value, and the P-value returns the same value. Then it can be concluded that the second and fifth hypotheses are acceptable. Indicators used in measuring process innovation, resulting in a very high CR value of 4,114. This shows that the process innovation in this research is very influential on environmental sustainability in UMK performance. Evidenced by the measurement of process innovations used, such as innovating renewable processes that can maintain environmental sustainability, making process innovations is needed to develop UMK performance. In line with the research (Masocha, 2018) revealed that the environmental and social dimensions had been operationalized to a greater level than the economic dimension in the context of sustainable development in MSMEs. Companies to express sustainable development must incorporate one of the principles of environmental promotion in their products, policies, and practices.

The third hypothesis proves that Marketing Innovation directly affects the sustainability of the environment in SME performance development produces significant positive value. The regression weights show a CR value of 2,463 > 1.96 and a P-value of 0.014 < 0.05. And the sixth hypothesis, Marketing Innovation, also directly affects sustainable SMEs' performance, resulting in significant positive values. Regression weights results show a CR value of 2,677 > 1.96 and P-value of 0.007 < 0.05. Thus it can be concluded that the third and sixth hypotheses are

acceptable. Among the three innovation activities carried out, Marketing Innovation generates less influence than product and process innovation on environmental sustainability. This phenomenon is acceptable because smaller marketing innovations are directly related to environmental sustainability activities. In this study, marketing innovation in environmental sustainability-focused only on promotional engineering renewal, pricing, and product design renewal. So in this study, innovative actions towards marketing can improve the performance of sustainable SMEs.

The seventh hypothesis proves that Environmental Sustainability directly affects the development of sustainable SME performance, resulting in significant positive value. The regression weights show a CR value of $4,114 > 1.96$ and a P-value of $0.000 < 0.05$. Thus it can be concluded that the seventh hypothesis is acceptable. Sustainable innovation and competitiveness stem from early work on environmental regulation that regulation negatively affects the company's cost structure, making it less competitive, but the environment can also be a competitive resource for companies. The majority of empirical research has shown that the regulatory role in innovation and competitiveness at the corporate level is positive (Boons et al., 2013) (Table 3).

Indirect Effects				a	Sa	b	Sb	Std. Error	T- Statistik	P- Value	VAF	Evaluation	
PERFORM	<-	SUSTENV	<-	PRODIN	0,50	0,14	0,06	0,01	0,01	2,76	0,01	100%	Full Mediation
PERFORM	<-	SUSTENV	<-	PROSIN	0,06	0,01	0,06	0,01	0,00	2,93	0,00	100%	Full Mediation
PERFORM	<-	SUSTENV	<-	MARKIN	0,36	0,15	0,06	0,01	0,01	2,12	0,03	70%	Partial Mediation

Source: Sobel Test

According to Hair et al. (2017) (Cuevas-Vargas et al., 2019) explains that to know the magnitude of the influence of mediation variables between exogenous and endogenous variables is required VAF formula (Variance Accounted For). The table above produces the amount of environmental sustainability influence as a mediation variable between process innovation variables to SME performance by 100% and resulting in a complete mediation evaluation. The same is true between process innovation and sustainable SME performance, environmental sustainability as a mediation variable resulting in a 100% full mediation effect. However, ecological sustainability mediation between marketing innovation and sustainable SME performance resulted in a mediation influence of 70% with a partial mediation evaluation. It can be concluded that the sustainability of the environment can partially mediate the marketing innovations in this study in developing sustainable SME performance.

CONCLUSION

Structural Equation Model analysis results in a value that can confirm that product innovation, process, and marketing have a significant positive effect on sustainable SME performance. The magnitude of each hypothesis's value indicates that the CR and P values are

already at the specified limit. The influence of Environmental Sustainability as a mediation variable can mediate between process and product innovations on SMEs' performance by 100% (complete mediation) and 70% (partial mediation) between marketing innovations to the implementation of SMEs. So concerning the development of sustainable SME performance in West Sumatera, it is expected that businesses can make a suitable variety of innovations starting from products, processes, and marketing under the needs of sustainable environmental sustainability. Product innovation, process, and marketing are not necessarily for-profit purposes but must pay more attention to the environment in determining the innovation strategy carried out.

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