Uncovering The Connection Between Product Innovation And Business Performance: Perspectives From Akar Wangi (Vetiver) Handicraft Industry In Garut

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Abstract

The vetiver handicraft industry is one of the leading potentials of Garut Regency, which has high economic value. This study aims to analyze the effect of product innovation on business performance in the vetiver handicraft industry in Garut Regency. Using a quantitative approach and non-experimental or survey research type and explanation research design, this study involved 66 vetiver business actors as respondents. The analysis employed the Structural Equation Modeling method based on Partial Least Squares (SEM-PLS) to examine the relationship between product innovation and business performance. The findings of this study indicate that product innovation exerts a significant influence on business performance, underscoring its critical role in the development of the vetiver handicraft industry in Garut Regency. The study further demonstrates that product innovation, in its entirety, contributes positively and significantly to the enhancement of business performance. The findings of this study underscore the pivotal role of continuous innovation, particularly in enhancing product quality and ensuring the continued competitiveness and business sustainability of the vetiver handicraft industry in Garut Regency.

Keywords: Product Innovation; Business Performance; Vetiver Handicraft Industry.

Introduction

One of the challenges faced by business units in the era of globalization is competition. units Business will face opportunities and threats in an ever-changing business environment. To survive in this environment, companies must understand the needs of todays 'market. consumers and adapt them to the Consumers are very important to the success of the company in developing products or services. [1]

One of the factors to measure how influential business strategies are in the is face of competitors business performance. To improve results and be able to compete, companies must show products that have innovation and market . Indonesia orientationhas great potential potential to become the ASEAN region'. smarket for investment and free trade due to its natural abundant resources and vast populationFree trade can provide Indonesian businesses with both and opportunities dangers. Indonesian businesses will be eliminated in the competition if they cannot cope with the increasingly strong competition .[2], [3]

The performance of the vetiver craft industry in Indonesia is a significant case study in the broader context of depth and sustainability in the craft sector. The of unique

propertiesvetiver grasses, especially those used in handicrafts, create a niche market that has high economic and cultural value. industry The thrives on the expertise of local artisans and plays an important role in the preservation of cultural heritage and empowerment of local communities, as well as enhancing socio-economic resilience.

The vetiver industry in Indonesia has significant potential, but is currently hampered by several challenges that impact its performance, namely market , competitionquality inconsistencies, environmental constraints, and operational inefficiencies, which collectively hinder the industry's ability to effectively utilize its abundant resources.

The growing international demand for vetiver oils and crafts underscores the potential of the industry but also highlights the competition it faces, particularly from mass-produced alternatives and technologically advanced production methods. There is research that addresses the threat that mass production poses to traditional vetiver craft products, suggesting that such a culture can overshadow local artisans[4] . This is challenge further compounded by the substandard quality of vetiver oil, which is caused by inconsistencies in production methods and geographical conditions. Variations in soil types and climatic conditions result in significant differences in chemical composition, which adversely affects the quality of the final product[5] . As a result, the inconsistent quality of vetiver oil hinders the achievement of competitive prices in the global market.

Garut produces 50 to 75 tons of vetiver essential oil per year, which is 90 percent of Indonesia's . Only entire productionsix districts in Garut Regency can be used to grow vetiver, including Samarang, Cilawu, Leles, , Tarogong KalerPasirwangi and Bayongbong. plants Vetiver not only have essential oils, but can be also processed into high value-added crafts. More than a hundred artworks have been purchased in marketsdomestic and international . From 2012 to 2017, the production of fresh in vetiver Garut Regency decreased.

Farmers have switched to cultivating horticultural crops as their main business, leading to a decline in production. The majority of farmers in Garut Regency only cultivate vetiver as a side job, as vetiver can be harvested only once a year. To fulfill their living needs, farmers cultivate other horticultural commodities. Demand for vetiver oil is up to 300 tons per year, while the national production of vetiver is around 50 tons per year. Opportunities to meet global market demand arise from this situation. The entire essential oil market is distributed to export companies located in Bogor and Jakarta. companies These work closely with the essential oil processing industry.

The following is data on the area and number of vetiver-producing tonations in Garut Regency.

Table 1. Fragrant Root Producers of Garut Regency

No.	District	Ha	Tons
1.	Samarang	750,00	22,50
2.	Leles	750,00	22,50
3.	Pasirwangi	450,00	13,50
4.	Cilawu	240,00	7,20
5.	Bayongbong	210,00	6,30
	Total	2.400,00	72,00

Source: *garutkab.go.id*

Although Garut Regency is a world , producer of vetiverproduction is still limited by capital and technology.

Table 2: Total production of vetiver

No.	Production/Kg	Selling Value	Year
1.	29.100	US$ 1,175,920.00.	2016
2.	23.520	US$ 1,516,208.00.	2017

Source: garutkab.go.id

Sales of akarwangi oil production in the last year reached 23,520 kg with a value of US$ 1,516,208.00, up from 1,175,920.00, but production capacity fell from 29,100 kg in the previous year. 28 farmer groups groupspread across Samarang and Pasirwangi sub-districts 18 farmer farmer farmer groups, Leles 5 groups, Cilawu 4 groups and Bayongbong 1 farmer . The number of managers or distilleries is 33 units spread across Samarang and Pasirwangi sub-districts 21 units, Leles 9 units, Bayongbong 1 unit and Cilawu 2 units.

In the context of the Fragrant Root handicraft handicraftsindustry, several challenges and opportunities arise with to respect innovation and the development of derivative products Fragrant Root plants, known for their rootsfibrous , offer distinct advantages in a variety of applications, including , however, the sector faces systemic barriers that hinder innovation and competitiveness in this artisan domain.

The that the assertion vetiver craft industry is conducive to innovation is supported by the substantial benefits derived from its natural fibers, which are recognized to be biodegradable and have mechanical properties similar to those of synthetic materials, , thereby increasing opportunities for their utilization in a variety of productsincluding those from regional crafts[6], [7] . However, despite the inherent potential of the raw material, considerable knowledge gaps still exist regarding processing techniques and market , accesshindering the capacity of artisans to effectively innovate and diversify their product lines[8] . An important challenge in driving innovation in the vetiver craft industry is the historical reliance on conventional methods, which hinders integration with contemporary marketing and design practices. Therefore, understanding consumer preferences and product attributes is critical to overcoming some of these challenges. Research on consumer behavior has highlighted how product - such as attributes design, uniqueness and sustainability - significantly influence purchasing decisions in the market . handicraft [9]

Research on the impact of product innovation on business performance has produced inconsistent findings, reflecting the complex interaction of various factors that influence this relationship. The concept of product innovation, which encompasses the introduction of new or significantly improved goods and services , is widely recognized as a potential driver for improving business performance[10], [11] . However, the empirical evidence supporting this claim varies, with some studies showing a strong positive correlation and others reporting negligible or conflicting results.

Literature Review

Product innovation is critical to the sustainability and competitiveness of small and medium-sized enterprises (SMEs). Such innovation enables SMEs to adapt to evolving market demands and technological advancements, which is critical for success in a competitive landscape[12], [13] . However, many barriers hinder SMEs' capacity to innovate, including resource limitations, lack of institutional support, and inadequate infrastructure .[14], [15], [16]

Moreover, the emphasis on different types of innovation varies across sectors; for example, marketing innovation is prioritized over product and process in innovation certain industries such as hospitality[17] . Better market orientation and strategies adaptable are essential for SMEs to effectively utilize available information and improve their innovation practices, which can mediate performance outcomes[13] . In addition, fostering a culture of creativity, , supported by effective leadershipis key in overcoming innovation barriers and improving organizational adaptability .[18]

In summary, the relationship between product innovation and firm performance is supported by a wide array of theories and empirical findings that explain their interconnectedness. Companies that strategically integrate innovation into their core operations, engage with stakeholders, prioritize sustainable practices, embrace digital , and technologiesfoster a supportive culture are well-positioned to improve performance. The landscape innovation is dynamic and constantly evolving, requiring organizations to remain vigilant and adaptable to maintain a competitive advantage in a marketplacechanging .

Research Method

Qualitative research is a research approach used in revealing the effect of product innovation on business performance in the vetiver craft industry. type of The research is non-experimental or survey research and the research design uses explanatory research. This research involved 66 vetiver craftsmen in Garut district. Sampling in this study was carried out with a type of Non Probability Sampling. data The research was processed using SEM-PLS. This study involves several variables being tested, these variables include:

Table 1. Research Variables

Variables	Indicators
Product Innovation (X)	Quality (X1)
	Modification (X2)
	Market Need (X3)
Business Performance (Y)	Financial (Y1)
	Growth of sales (Y2)
	Domestic market (Y3)
	Expansion of business operations (Y4)

As for the research model used in this study as follows:

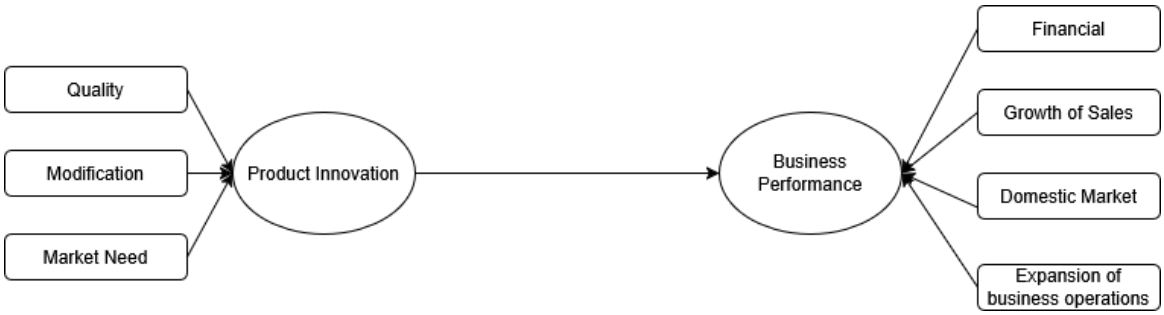

Figure 2. Research Model

Results and Discussion

To analyze the effect of product innovation on business performance in the vetiver handicraft industry in Garut Regency, the data collected was processed using SmartPLS software. process The testing was conducted through two main stages: first, the assessment of the measurement model (Outer Model) which aims to evaluate the validity and reliability of the indicators used; second, the assessment of the structural model (Inner Model) which focuses on the relationships between variables in the model. In this analysis, the bootstrapping method is applied, which allows random doubling of data to overcome the problem of normality

assumptions. By using this technique, the analysis results become more robust and reliable. SmartPLS provides comprehensive output, including path coefficient values and significance levels, which helps in understanding the extent to which product innovation can affect business performance. The following are the modeling results obtained from the analysis, which provide important insights for the development of business strategies in this sector.

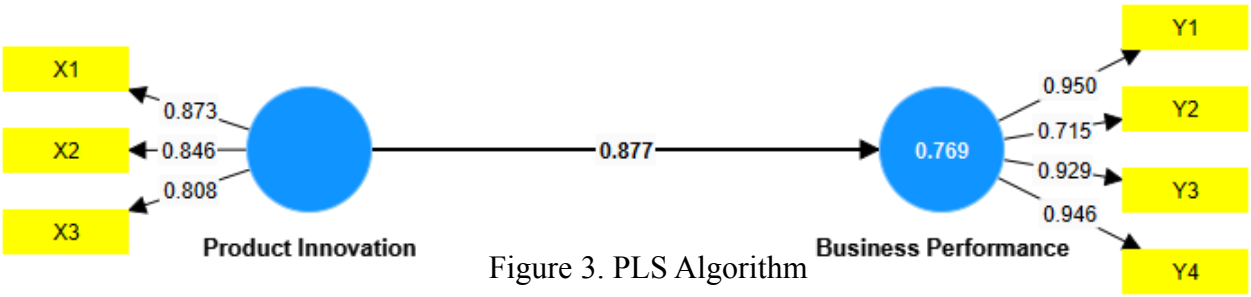

Figure 3. PLS Algorithm

The results of the PLS algorithm displayed in Figure 3 show calculations that illustrate the convergent validity of the measurement model and the indicators used. An indicator can be considered reliable if its loading value exceeds 0.70. By paying attention to the output that shows the correlation between indicators and constructs, this information can be seen in Table 2.

Table 2. Outer Loading

	Business Performance	Product Innovation
X1		0,873
X2		0,846
X3		0,808
Y1	0,950	
Y2	0,715	
Y3	0,929	
Y4	0,946	

To evaluate the cross loading value between indicators and their constructs, the analysis can be done by checking Discriminant Validity in SmartPLS. The following are the results obtained:

Table 3. Construct Reliability and Validity

	Cronbach 's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
Business Performance	0,908	0,913	0,938	0,793

Product Innovation	0,810	0,847	0,880	0,710

Based on Table 3, there are calculation results that include Cronbach's alpha, Composite Reliability (rho_a and rho_c), and Average Variance Extracted (AVE) values for the two main constructs: Business Performance and Product Innovation. The Cronbach's alpha value Innovation for Business Performance is 0.908 and for Product is 0.810, which indicates good internal consistency. Composite Reliability also showed satisfactory results, with Business Performance having a had rho_a value of 0.913 and rho_c of 0.938, while Product Innovation a rho_a value of 0.847 and rho_c of 0.880. additionIn, the AVE value for Business Performance is 0.793 and for Product Innovation is 0.710, both above the 0.5 , which thresholdindicates good construct validity. results These provide confidence that the measurement instruments used in this study are reliable and valid for analyzing the relationship between product innovation and business performance.

Table 4. R-Square Value

	R-square	**Adjusted R-square**
Business Performance	0,769	0,765

After analyzing Construct Reliability and Validity, the next step in this research is testing the structural model (inner model) using the R-Square , which valueserves as an indicator of Goodness-of-Fit model. In the table presented, the R-Square value for Business Performance is 0.769, while the adjusted R-Square value is 0.765. R-Square value This indicates that about the 76.9% of variation in business performance can be explained by product innovation and the other factors modeled in this study. R-Square value This high indicates that the model built has a good fit and is able to explain the relationship between product innovation and business performance significantly. Thus, these results provide strong empirical support to the research hypothesis, suggesting that product innovation contributes positively to improving business performance in the vetiver handicraft industry in Garut Regency.

To assess the significance of the effect of Product Innovation on Business Performance in the Industry Fragrant Root Handicraft in Garut Regency, parameter and coefficient values t-statistic significance values can be used. Before that, the PLS model must go through a bootstrapping process to produce a suitable model.

Table 5. Path coefficients

	Original sample (O)	**Sample mean (M)**	**Standard deviation (STDEV)**	**T statistics (|O/STDEV|)**	**P values**
Product Innovation -> Business Performance	0,877	0,884	0,015	60,139	0,000

Based on the results in table 5, it provides important information regarding the effect of Product Innovation on Business Performance in this study. value The path coefficient (Original Sample) for the effect is 0.877, indicating a strong positive relationship, where an

increase in product innovation is expected to improve business performance. mean of the consistency of the The . path coefficient (Sample Mean) is 0.884, which indicates the results across the sampleThe of standard deviation 0.015 indicates the stability of the coefficient values, with low variation between samples. The value t-statisticof 60.139, which is significantly greater than 1.96, indicates strong statistical significance, while the very p-value low of 0.000 provides strong evidence to reject the null . hypothesisOverall, these results support the hypothesis that product innovation has a significant and positive influence on business performance in the vetiver handicraft industry in Garut Regency.

The relationship between product innovation and business performance in the vetiver craft industry in Garut can be understood through various dimensions of innovation and business performance. Product innovation especially in terms of quality, modification, and responsiveness to market , needsplays an important role in improving business performance indicators such as financial metrics, sales growth, domestic market reach, and operational expansion.

It is imperative to recognize the critical role of innovation in improving the quality and aesthetic appeal of craft goods, given its impact profoundon sales and profitability. As previous research has emphasized, innovation is a catalyst for sales growth in small creative enterprises, indicating that handicraft producers who adopt innovative practices tend to experience better financial results and better market positions in sectors such as crafts and handicrafts[19] . In a veinsimilar , innovation themes such as the integration of modern , designsustainability and technology utilization have been shown to increase the economic value of traditional handicrafts, thereby improving their market competitiveness[20] . This assertion is corroborated by another study, which observed that a proactive orientation towards market demand drives innovation in handicrafts, thereby improving business performance .[21]

In addition, the capacity for product modification and innovation appears to be closely linked to operational expansion. Companies that strategically adopt innovative practices often experience increased market and share geographic reach. A study corroborates that a strong market orientation, coupled with management commitment to innovation, exerts a significant influence on the expansion outcomes of handicraft businesses. Effective implementation of innovation can result in the establishment of new channels and operational opportunities, thus enabling firms to enter new markets and diversify their product offerings .[22]

Despite the challenges associated with integrating innovative practices, such as the preservation of traditional skills, the adaptability of these practices can yield substantial benefits. Che and Hashim (2024) further state that the integration of modern technological elements boosts competitiveness, thus enabling artisans to capture new market opportunities and maintain traditional craftsmanship. showing The correlation between product innovation and improved business performance in the vetiver craft sector is well supported by evidence that quality improvements, market and modifications customer-oriented innovations lead to improved financial results, increased sales growth and expansion of business operations.

Conclusion

Based on the results of the research conducted, it can be concluded that product innovation has a significant and positive influence on business performance in the vetiver craft industry in

Garut Regency. Statistical analysis shows that the path coefficient for the relationship between product innovation and business performance is 0.877, which indicates a strong positive relationship. The R-Square value of 0.769 indicates that about 76.9% of the by variation in business performance can be explained product innovation and other related factors. Thus, innovation in terms of quality, product modification, and response to market needs not only drives growth in financial results but also enhances the competitiveness and sustainability of businesses in the face of market. ChallengesThe evidence clearly shows that through product innovation in terms of quality, market and modification responding to consumer needs, businesses in the vetiver craft industry in Garut can achieve significant improvements in business performance. The .interaction between these variables not only drives the growth of financial results but also enhances their capacity to operate in an increasingly competitive market landscape.

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