Interrelation Green Innovation and Customer Value Co-Creation Behavior In Support Business Performance

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Abstract

Objective: This research is to analyze the interrelationship between green innovation and customer value co-creation behavior in supporting business performance. Reference Theoretical: Research was conducted on batik SMEs in East Java using quantitative approach, and responses from 250 green batik consumers were obtained through a purposive random method sampling. Method: The analysis technique used is Structural Equation Modeling (SEM). using SmartPLS software. Results and Conclusion: Research findings reveal that there is an interrelationship between green innovation against CVCB and business performance as well as CVCB against business performance. Strategygreen innovation encourage companies to produce friendly products environmental, safe for consumption and provides the best value for consumers. Condition This will automatically affect business performance. Results of this research supports previous research. Creation of related products environment increases value and function for customers (Green and Peloza 2011). Research Implications: Based on the results of this research, it is recommended that further research be able to carry out research replication from the perspective of green batik SMEs so that various difficulties experienced by SMEs can be studied because consumers observe the stages of the green batik production process to obtain the batik products they want and need. Value: The novelty of this research is that it combines two grand theories, namely green marketing and service dominant logic theory (green innovation and CVCB). In practice, these two theories require cooperation between producers and consumers.

Keywords: *green product innovation, green process innovation, customer participation behavior and customer citizenship behavior.*

1. Introduction

Business competition in the global market is getting tighter, every company of various business scales, including SMEs, must develop the right strategy to gain a competitive advantage. Consumer attention to the environment is increasing, consumers prefer companies that care about the environment. Strategy green innovation is the application of a business strategy based on environmental concern to create competitive advantage. Companies that apply strategy green innovation in its business activities it will prioritize caring for the social and natural environment, so the company will be oriented towards

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business and environmental sustainability (Aital, 2016). Strategygreen innovation is a strategy that focuses on using natural materials and production processes that minimize pollution (Chanchaochai, 2012).

Green product innovation is the activity of using environmentally friendly production materials which is carried out through the use of surrounding natural materials while preserving nature, so this activity will be carried out through reforestation to maintain the availability of materials and production continuity. Green process innovation is an activity in the production stage which aims to minimize pollution, this activity is carried out by processing waste. Strategygreen innovation offered as a viable option for companies to balance business activities and environmental concerns. Strategygreen innovation can become a competitive strategy through sustainable Corporate Social Responsibility (CSR) activities (Aital, 2016). Strategygreen innovation able to increase perceptions of customer value and competitive advantage (Hartini, et al 2021), influencing business performance (Ramzan et al 2021).

Strategy green innovation able to influence customer participation and customer willingness to play an active role in environmentally friendly activities or preserving the environment.Customer participation behavior, customer citizenship behavior grows within customers/consumers because consumers feel that the wider community has the perception of involvement in strategy implementation green innovation shows as a smart individual and as a wise company. Companies that apply strategygreen innovation producing environmentally friendly products, so that consumers feel they are getting higher value because environmentally friendly products do not harm themselves and the environment (Green and Peloza, 2011; Hartini et al 2021). The existence of co-creation in creating environmentally friendly products will be followed by positive consumer opinions so that it can have a positive influence on business performance.

Research the relationship gap between green product innovation and customer participation behavior. There is research that positions green product innovation as an antecedent variable ofcustomer participation behavior and vice versa, many studies position it green product innovation as a consequence variable of customer participation behavior, and is supported by research results which state that companies that care about the environment are able to improve business performance (Green & Peloza, 2011). Meanwhile, there are still a few companies that care about the environment (Awaliyah and Maharani 2019). Suki (2016) in the results of his study stated that environmental knowledge does not influence decisions to purchase green food in Malaysia. It is necessary to examine the impact of strategy implementation green innovation to customer participation behavior, customer citizenship behavior and business performance

The contribution of this research is to explain the interrelationship between green innovation (green product innovation and green process innovation) with (CVCB) customer value co-creation behavior which consists of variable dimensions customer participation behavior, customer citizenship behavior in influencing business performance. The results of this study indicate that this research supports CVCB as an antecedent variable of BP, thus the results of this study support (Yen et al., (2020) ; Assiouras et al., (2019); Kim et al., (2020); C.F. Chen & Wang, (2016); Singh et al., (2016): (Kucukoglu & Pınar, 2015): (Luan et al., 2022): (Andersén, 2021): (X. Wang et al., 2020): (Anaza & Zhao, 2013) .

2. Theoretical Background and Hypothesis

Green Marketing and Green Innovation

Green Marketing is a concept that includes all marketing activities developed to stimulate and maintain environmentally friendly consumer behavior (Chen & Chang, 2013). Implementation studies green marketing conducted by researchers in various parts of the

world concluded that many consumers agree about the benefits of brands "green"If a product or service is able to reduce the impact of environmental damage, the company must educate consumers to consume it green product.

This research was conducted at batik SMEs in East Java, where in the production process they use many materials that are not environmentally friendly, although this is not done by all batik craftsmen, but in this condition there is a need to care for the environment for business sustainability considering that environmental problems are their responsibility. together and each individual must have a high level of awareness to maintain the ecosystem in the business environment. Most batik SMEs in East Java maintain the continuity of their production through cultivating plants used as batik dyes by utilizing land in the surrounding environment, for example in gardens, forest edges and agricultural land, this method is taken as an implementation of government policy to increase farmers' income in synergy with batik craftsmen. This condition is in accordance with the results of a study conducted by (Muklis, 2022)

Efforts to develop a green industry are currently a demand to produce environmentally friendly products (green product), has become a very important and strategic issue to increase competitiveness, environmentally friendly products can be produced through the application of the conceptgreen industry. Starting from the procurement and use of environmentally friendly input materials, and produced using environmentally friendly machines or technology as well as effective waste handling.Green industry is an industrial icon that must be understood and implemented by industries that, in their production processes, apply efficiency and effectiveness efforts in the sustainable use of resources with the aim of preserving the environment. This will create business performance in every business/business scale, including SMEs.

In application green product and green process batik craftsmen have interacted with consumers or collaborated. This practice is in accordance with the results of research conducted by (Vargo & Lusch, 2014) that "Service Dominant Logic focuses on the interaction between producers, consumers and communities in a network of offers or value creation with parties external to the company through a collaboration process calledco-creation"

Application green innovation is an approach for companies and consumers as an effort to increase environmental awareness among stakeholders, this application aims to encourage companies to innovate so that the products produced have a competitive advantage so that it has an impact on increasing business performance.Green innovation terdiri dari green product innovation, green process innovation and organizational green.

a. Green product innovation includes energy and materials used to produce products where the materials used must be environmentally friendly, energy use must have minimal pollution. The creation of green products must show that the materials and energy used are capable of maximally preventing pollution. The ability to choose environmentally friendly materials and energy is a company's ability to create competitiveness. This shows achievements in innovation and the level of responsibility in environmental conservation activities. (Dangelico and Pujari, 2010). Green product innovation is an environmental preservation and protection program to contribute to environmental benefits and make the product more competitive (Lin, 2013). The rise of environmental issues has forced various businesses to do so green innovation. Green product becomes important among manufacturing companies and businesses among SMEs, companies take the initiative to make sustainability investments to mitigate risks, save costs and increase income (http://fortune.com/2023/04/29/green-giants-freya-williams/) (Dangelico et al., 2017).

b Green process innovation

In Green process innovation The production process is carried out in an environmentally friendly manner so as not to damage nature. Thus, the company must design rework its compatible production infrastructure to perform practices green process innovation, including machinery, materials, supply chain options, waste disposal systems, and other infrastructure systems should facilitate the practice green process innovation. As for the purpose of practicegreen process innovation is to reduce production time and costs (Calza et al., 2017).

Green process innovation is an improvement in manufacturing processes through the use of environmentally friendly technology to produce products and provide services that have minimal negative effects on the environment (Wong et al., 2012) (Tang et al, 2018).Green process innovation oriented towards implementing new and innovative processes to achieve goals and save energy during manufacturing and other processes. Green process innovation directs companies to recycle their waste to protect the environment. (Shafique et al., 2017).

Business Performance

Practice green innvation impact on business performance because flexible and sustainable processes involve managers and managing partners in a framework that shows how they should work together to achieve expected results (Ngo, L. V., & O'Cass, A. 2013). Performance is the final result of activities which includes the results of the strategic management process. Practice green innvation will show good business performance because it can be measured by how efficiently and effectively the company's business strategy is implemented (Olson et al., 2005). SME business performance highly influenced by factors internal, namely, company resources, company capabilities, entrepreneurial orientation, product innovation and competitive advantage, while external factors are strongly influenced by market attractiveness and competition (Dwimahendrawan, 2020; Rahayu et al., 2017). The results of this research are supported by the results of the studies conducted Iswari et al., (2023) stated that green entrepreneurial intellectual capital has a significant positive effect on financial performance.

Influence Green Product Innovation and Green Process Innovation against CVCB (Customer Participation Behavior,Customer Citizenship Behavior)

In several studies in the food and beverage industry, customers play an important role in creating unique and memorable service experiences that can have an important effect on the value perceived by each customer (Prahalad and Ramaswamy, 2004). The study revealed that an effective method to promote value enhancement is throughcustomer participacition behavior is very important in the food and beverage industry to gain competitive advantage and build sustainable management strategies, (Raouf et al., 2018). Personal interaction and customer participation can be promoted through innovative service methods and in innovative environments (Hollebeek and Andreassen, 2019). Therefore, innovation is critical to a company's success in promoting co-creation service experiences with customers. Innovation refers to a company's ability to develop new ideas, services, and promotions ((Raouf et al., 2018). Perceptions of a company's innovation signal to customers that the company is creative and progressive, indicating that the company is adopting an innovative perspective in business practices. Assiouras et al., (2019) explains that innovation characteristics are important factors that influence customers' desire to co-create value. The results of the research are in line with the research done by Yen et al., (2020), Kim et al., (2020), C. F. Chen & Wang, (2016), Amjad Shamim & Zulkipli Ghazali , (2014), Guo et al., (2020) stated that "Green product innovation has a positive and significant effect oncustomer participacition behavior"

Several studies on the practical innovation of service companies have demonstrated the role of strategics through out the process co-creation to create product or service value (Assiouras et al., 2019). Since innovation promotes the exchange of knowledge and information between service providers and customers, it helps increase co-created value (Amjad Shamim & Zulkipli Ghazali, 2014). Previous studies have revealed a positive relationship between innovation and co-creation from the perspective of service dominant logic (Yen et al., 2020). The results of his research revealed that business model innovation was felt stimulate customer enthusiasm and motivation, leading to customer co-creation of value behavior, include customer participation behavior and customer citizenship behavior (Yi dan Gong, 2013). Customer participation behavior on the behavior required to achieve appropriate performance in value creation during provision service, mean while customer citizenship behavior refers to voluntary customer behavior that facilitates value creation. The results of the research above are in line with research conducted by Yen et al., (2020): Hsieh et al., (2018): Yousaf, (2021): Shi et al., (2020): Ngo & O' Cass, (2013): Assiouras et al., (2019): Amjad Shamim & Zulkipli Ghazali, (2014): J. Chen & Liu, (2020) shows the results that green product innovation has a positive and significant effect oncustomer citizenship behavior.

Technology green process innovation is a clean technology with the common goal of minimizing emissions, reducing waste and pollution in production systems. Green process innovation acts as an additional measure in the production system to develop green products and services that generate positive externalities to the environment and save costs (J. Chen & Liu, 2020).

Several research results conducted in the hotel business show that there is interaction between customers and employees. Some researchers argue that from the customer's perspective it is related to green process innovation shows that service at hotels through saving electrical energy and using environmentally friendly equipment influences customer participation behavior (J. Chen & Liu, 2020). That guests who receive high value from their hotel stay experience will maintain "fruitful transactions and relationships" with hospitality service providers (Dangelico et al., 2017). The results of this research are in line with research conducted by Amjad Shamim & Zulkipli Ghazali, (2014): Guo et al., (2020): Kim et al., (2020): C. F. Chen & Wang, (2016) who stated in their hypothesis thatgreen process innovation positive and significant effect tfacingcustomer participacition behavior

Research conducted by Chen, J., & Liu, L. (2020)., The results show that innovation in hotel service processes related to energy savings and the use of environmentally friendly hotel equipment can have an influence customer citizenship behavior on hotel customers, customers admit that they feel treated personally and thus provide positive feedback.They also repeat visits and increase advocacy through word of mouth and providing recommendations to potential customers. The results of this research are in line with the results of research conducted by Yen et al., (2020),Hsieh et al., (2018),Yousaf, (2021), Shi et al., 2020), Assiouras et al., (2019), Amjad Shamim & Zulkipli Ghazali, (2014) yang menyatakan bahwagreen process innovation significant and positive effect oncustomer citizenship bahavior

Influence Green Product Innovation and Green Process Innovation to Business Performance

Green innovation which include green product innovation and green process innovationin its application it will produce a strong competitive advantage (Xie et al., 2019). Indicator green product innovation consisting of: (1) companies choose materials that produce minimal pollution, (2) companies choose materials that absorb minimal resources and energy. (3) the company plans its products to be easily recyclable for product design and development (Chen, J., & Liu, L. 2020) (Hsieh et al., 2018). The use of environmental technology will be very good for providing environmentally friendly

products because it makes a big contribution to reducing environmental impacts.Green product innovation can facilitate companies to seek market opportunities. Success green product innovation can create a sustainable organizational competitive advantage (Chen, J., & Liu, L. 2020).

Based on the results of research conducted on 2181 companies, it was found that out of nine (9) types green process innovation, two of the nine have a positive effect on business performance (Li et al., 2018). Xie., et al (2019) stated that socially responsible companies have higher profits for the same level of risk. The effect of environmental regulations on economic performance and innovation focuses on the balance of innovation that can occur due to technological change (Tang et al., 2018). Green product innovation leads companies to improve their economic performance by seeking new markets, differentiating products, increasing sales and improving competitive advantage and company image (Dangelico, 2017; (Melander, 2017).

Hypothesis

Based on the theory and previous research described above, the research hypothesis is as follows:

H1 = Green product innovation has a positive and significant effect oncustomer participation behaviour

H2 = Green product innovation has a positive and significant effect oncustomer citizenship behaviour

H3 = Green product innovation has a positive and significant effect onbusiness performance

H4 = Green process innovation has a positive and significant effect oncustomer participation behaviour

H5 = Green process innovation has a positive and significant effect oncustomer citizenship behaviour

H6 = Green process innovation has a positive and significant effect onbusiness performance

H7 = Customer participation behaviour has a positive and significant effect onbusiness performance

H8 = Customer citizenship behaviour has a positive and significant effect onbusiness performance

Based on this explanation, the research model can be depicted in Figure 1.

Figure 1 Conceptual research model
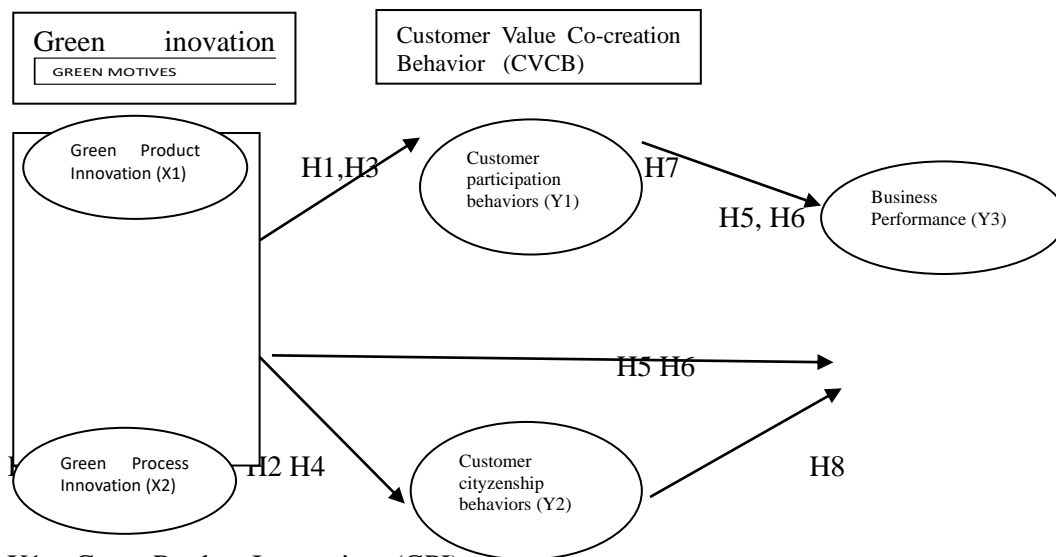
X1 = Green Product Innovation (GPI)

X2 = Green Process Innovation (GPS)

Y1 = Customer participation behaviors (CPB)

Y2 = Customer cityzenship behaviors (CCB)

Y3 = Business Performance (BP)

Based on the theoretical background and hypothesis development, Figure 1 will present the proposed research model.

3. Methodology

Population and Sampling Methods

The purpose of this research is to test the effect Green inovation to Customer Value Co-creation Behavior (CVCB) and Business Performance. The population of this research is green batik consumers from the unlimited number of batik SMEs in East Java. Data for this research was collected randomly offline through several exhibition events organized by the batik community "Canting Jawi Wetan" using proportional random sampling technique. These screening questions ensure the eligibility of respondents and the suitability and quality of the data collected. The data collected was 250 respondents. The sample characteristics are green batik consumers who buy more than once and have made observations at stages of the production process.

Measurement

To ensure the validity and reliability of the measuring instruments, all measurements used in this research used existing literature, and the researcher modified the measurement themes according to the research objectives. In terms of questionnaire design, all variables were measured by Likert (except demographics).Green inovation consists of two variable dimensions, namely green product innovation (GPI) and green process innovation (GPS). The operational definition of the green product innovation (GPI) variable is consumer knowledge about the use of raw material components for natural-based batik products through observing the results of green batik products. Researchers used 3 items(Yousaf, 2021)(Luan et al., 2022).

Green process innovation (GPS) is defined as consumer knowledge through direct observation at the stages of the production process that batik activists have the ability to

minimize emissions at each stage of the production process, reduce environmental impacts and the ability to utilize waste and efficiently use energy, which is measured based on 3 items(Yousaf,2021); (Luan et al., 2022).

Customer Value Co-creation Behavior (CVCB) consists of the variables customer participation behaviors and customer citizenship behaviors (CCB). The CPB variable is defined as the behavior required to obtain batik product value that meets the needs and desires of consumers carried out together with batik craftsmen. This variable is measured with 4 items(Yi & Gong, 2013): (Navarro et al., 2016). cCustomer citizenship behaviors (CCB) are customer behaviors that refer to voluntary behavior to facilitate joint value creation with batik craftsmen. This variable is measured based on 4 items(Yi & Gong, 2013): (Navarro et al., 2016). Variabel business performance (BP) are the results achieved by batik MSMEs in improving product quality, service quality, customer emotions and various innovations to meet customer interests. Measured based on 4 items, (Kaplan and Norton, 2009)

Demographic Analysis

Table 1 below explains the demographic characteristics of respondents.

Table 1 Demographic Characteristics of Respondents (N=250)

Item		N	%
Gender	male	108	43.2
	Permale	142	56.8
Age	20 – 40 year	115	47.2
	41-50 year	103	40.4
	> 50 year	22	12.4
Education	SMA	11	4,4
	S-1	213	85.2
	S2-S3	26	10,4
Consumer Community	Batik Connoisseur	69	27.6
	Collector	114	45.6
	Reseller	67	26,8
Income per month	>Rp 50.000.000	82	33
	Rp 25 000.000 – Rp50.000.000	157	63
	< Rp 25.000.000	11	4

The table above shows that the 250 respondents were dominated by female respondents (56.8%). The age group is dominated by 20-40 year olds or (47.2%). This shows that the majority of respondents are the millennial generation. Then, at the educational level, respondents with a bachelor's degree background dominate (85.2%). The type of consumer community is dominated by the green batik collector group (45.6%). Apart from that, respondents who have a monthly income of Rp25 000.000 – Rp50.000.000 dominate, (63%). Based on the results above, green batik consumers are dominated by adults with relatively high income levels.

Analysis of this research data uses SEM-PLS. Table 2 explains the results of the validity and reliability test of the research instrument.

Table 2 Reliability, validity, and internal consistency results for the CFA-SEM measurement model

Convergent Validity Estimates on the Green Product Innovation Variable (X1)				
Item	LF	α	CR	AVE
Use of minimally polluting product ingredients (X1.1)	0,774	0,711	0,792	0,666
Choose materials that are easily recycled and easily decomposed naturally (X1.2)	0,789			
Use of materials effectively reduces the content of hazardous substances or waste (X1.3)	0,864			
EstimateConvergent Validity On VariablesGreen Process Innovation (X2)				
The product manufacturing process effectively reduces emissions of harmful substances (X2.1)	0,719	0,783	0,826	0,614
The process of recycling waste & emissions which allows it to be used again (X2.2)	0,796			
Ability to minimize energy consumption(X2.3)	0,832			
EstimateConvergent Validity On VariablesCustomer Perticipation Behavior (Y1)				
Information search (Y1.1)	0,778	0,772	0,802	0,604
Sharing information (Y1.2)	0,748			
Responsible behavior (Y1.3)	0,742			
Personal interaction (Y1.4)	0,769			
EstimateConvergent Validity On VariablesCustomer Citizenship Behavior (Y2)				
Feedback (Y2.1)	0,788	0,721	0,778	0,603
Advocacy / defense (Y2.2)	0,767			
Help (Y2.3)	0,733			
Tolerance (Y2.4)	0,745			
EstimateConvergent Validity On VariablesBusiness Performance Consumer(Y3)				
Product quality	0,706	0,754	0,847	0,685
Quality of service	0,720			
Emotional	0,843			
innovation	0,863			

Table 2 shows the validity and reliability of the measurements. The lowest loading factor is0,719, this value is considered appropriate because it is more than 0.60, (Hairet al., (2014). It can be concluded that all items used are valid. Likewise Cronbach's all variables are high, lowest0,711 (more than 0.7, so, all metrics are reliable in terms of internal consistency, (Ghozali, 2014). Next, composite reliability (CR), which is more appropriate for PLS-SEM than Cronbach's alpha (Hair et al., 2014) . The reliability coefficient values of Rho_A are all above 0.70, in accordance with the opinion of Dijkstra and Henseler (2015). Thus, the requirements for convergent validity apply to all components in this research framework. Convergent and discriminant validity are evaluated for construct validity. Average variance extracted (AVE) was used to assess convergent validity. AVE was more than 0.50, as seen in Table 2.

Table 3 Fornell-Larcker criteria

Konstruks	X1 (GPI)	X2 (GPS)	Y1 (CPB)	Y2 (CCB)	Y3 (BP)
X1 (GPI)	0,816				
X2 (GPS)	0,197	0,784			
Y1 (EC)	0,497	0,340	0,835		
Y2 (CPB)	0,528	0,406	0,622	0,777	
Y3 (CCB)	0,555	0,457	0,595	0,634	0,776

Table 3 Rasio Heterotrait-Monotrait (HTMT)

	X1 (GPI)	X2 (GPS)	Y1 (CPB)	Y2 (CCB)	Y3 (BP)
X1 (GPI)					
X2 (GPS)	0,302				
Y1 (EC)	0,743	0,508			
Y2 (CPB)	0,809	0,606	0,824		
Y3 (CCB)	0,886	0,685	0,822	0,882	

The discriminant validity of the reflective model can be evaluated through cross-loading values. Then compare the results of the square root of AVE with the correlation value between constructs, and finally assess the heterotrait-monotrait ratio (HTMT). In Table 3, the square root of each AVE construct (SQRT AVEs) is more significant than the square value of each latent variable association, indicating discriminant validity (Kock, 2015). In short, the validity and reliability of the constructs studied were met based on external model testing. Discriminant validity was also confirmed by calculating (HTMT) HTMT values for all constructs ranging between0,302 until0,886, well below the threshold of 0.85 to 0.90 (Hair et al., 2014). Based on the assessment of cross-loading, square root of AVE with correlation between constructs, and heterotrait-monotrait ratio (HTMT), this research model is feasible and follows the criteria for discriminant validity

Structural Model Evaluation

Based on recommendations from Hair., et al (2014) which states that there are five procedural stages in evaluating the structural model (inner model), namely

1. Testingcollinieirity. Based on the VIF value, the results of this research show that the analysis results of the VIF value are <5.00 (Hair., et al 2014), meaning that the structural model is said to be good or multicollinearity does not occur.

2. Testing the path coefficient. The test criteria are said to be significant ifp-value lower than the significance level (valuea) which is 0.05 (Henseleret al., 2015). Path coefficients should be interpreted as a change in the dependent variable if the value of the independent variable is increased by one and all other independent variables remain constant (Henseleret al., 2015).

3. Test the level of Rsquare or R². Henseler et al. (2016) even claims that the only approach to model suitability criteria applied for PLS path modeling is SRMR, with an SRMR value limit of 0.10 where an SRMR value of 010 is a model withfit Perfect. In this research resultsestimated model andsaturated model in this study it was 0.10, below the limit of 0.08, so this model meets the criteriafit.

4. Testing the effect of f2 size. The f2 test conditions use limits developed by Hair., et al (2014) and Chin (1998) where values of 0.02, 0.15, 0.35 indicate small, medium and large influence sizes. In this study, based on the provisions of the f2 test, it is included in the small criteria because it is taken to 0.15.

5. Hypothesis testing. The results of hypothesis testing can be presented in the following table

Table 4 Hypothesis Testing

	path coefficient	Sample mean	Standard Deviation (STDEV)	T Statistics	P Values	Information
X1 (GPI) -> Y1 (CPB)	0,283	0,276	0,063	4,478	0,000	Significant
X1 (GPI) -> Y2 (CCB)	0,334	0,330	0,050	6,733	0,000	Significant
X1 (GPI) -> Y3 (BP)	0,142	0,139	0,059	2,425	0,016	Significant
X2 (GPS) ->Y1 (CPB)	0,210	0,214	0,062	3,375	0,001	Significant
X2 (GPS) ->Y2 (CCB)	0,278	0,283	0,057	4,836	0,000	Significant
X2 (GPS) -> Y3 (BP)	0,073	0,076	0,056	1,301	0,194	Not Significant
Y1 (CPB) -> Y3 (BP)	0,212	0,206	0,074	2,873	0,004	Significant
Y2 (CCB) -> Y3 (BP)	0,203	0,209	0,072	2,811	0,005	Significant

Note : t-statistic threshold > 1,96 and p-value < 0,05

Hypothesis testing is shown in Table 4, where there are eight hypotheses with seven accepted and one rejected. The next step in the analysis is to measure the hypothesized correlation between latent variables through the path coefficient (β), the t-statistic value, (t) must be greater than 1.96 and the significance level (p) is less than 0.05 (Hair et al., 2014). H1 accepted, green product innovation has a positive and significant effect on customer participation behavior seen from path coefficient which has a positive value of 0,283 withp-value < 0.000. H2 is accepted Green product innovation has a positive and significant effect on customer citizsnship behavior which is reflected in the value path coefficient positive amount 0,334 with p-value < 0.000. H3 is accepted green product innovation has a positive and significant effect on business performance with valuepath coefficient positive amount0,142 withp-value < 0,016. H4 received green process innovation has a positive and significant effect on customer participation behavior with valuepath coefficient positive amount 0,210 withp-value = 0.001. H5 accepted green process innovation has a positive and significant effect on customer citizsnship behavior which is reflected in the value path coefficient as big as 0,278 with p-value 0,000. H6 Green process innovation insignificant effect onbusiness performance with value path coefficient positive amount 0,073 withp-value < 0.194. Thus H6 is rejected. H7 accepted customer participation behavior has a positive and significant effect on business performance, This condition can be shown to be large path coefficient as big as 0,212 with p-value 0.004. H8 accepted customer citizenship behavior has a positive and significant effect on business performance which is reflected in the valuepath coefficient as big as 0,203 withp-value 0,005.

4. Discussion

Theoretical Implications

Green innovation is a company strategy to produce environmentally friendly products, where materials and production processes must be environmentally friendly (green product innovation and green process innovation) able to increase strong competitive advantages (Xie et al., 2019). The company implements this strategy by collaborating with various parties including: consumers, stakeholders, government and private parties who support the g programreen innovation (Xie et al., 2019). Green innovation implemented by the company from a consumer perspective will increase the company's awareness of the natural and social environment in a sustainable manner (Hsieh et al., 2018).

In this study it is proven that companies that implement green innovation can increase customer participation and the level of customer willingness to help the company add

product value (co-creation). These activities can also improve business performance. Strategies related to environmental concerns, both social and natural, will increase balanced cooperation because there are similar ideas in efforts to preserve the environment. Consumers see companies as ethical, responsible and trustworthy organizations. This has an impact on satisfaction, brand connection and recommendations, so that consumers become more emotionally attached to the product

The results of this study support the research of Yen et al., (2020; Assiouras et al., (2019) (Yen et al., 2020):(Hsieh et al., 2018):(Yousaf, 2021):(Shi et al. , 2020):(Ngo & O'Cass, 2013): (Delpechitre et al., 2018): (C. F. Chen & Wang, 2016): (Yi & Gong, 2013): (Xie et al., 2020): (Teng & Chang, 201u4) which shows that there is an influence between the dimensions of the variables contained in green innovation and CVCB (customer value co-creation behavior) and business performance. It can also be explained that there is an interrelation between these variables not as mediation but as a combination of the influence of variables originating from different grand theories.

Environmental sustainability is important for consumers. Basically, the basic nature of humans as social creatures is to care about the environment. The level of concern is different for each person. The higher customer altruism, consumers will look for products with high green value. Green innovation will improvecustomer participation behavior andcustomer citizsnship behavior as well asbusiness performance. Companies that care about the environment will create pro-environmental products/services, thereby increasing the value of these products for the environment. Therefore, the higher the company's concern for the environment, the higher the customer's perceived valuegreen product.

The results of this research also prove that there is an interrelationship between green innovation against CVCB and business performance as well as CVCB against business performance. Strategy green innovation encouraging companies to produce products that are environmentally friendly, safe for consumption and provide the best value for consumers. These conditions will automatically affect performance. The results of this research support previous research. The creation of environmentally related products increases value and function for customers (Green and Peloza (2011) ;(Chen, J., & Liu, L. 2020).

Managerial Implications

The results of this research prove that Green inovation (green product innovation and green process innovation) has a significant positive impact on CVCB (customer participation behaviors dan Customer citizenship behaviors). Green inovation (green product innovation and green product innovation) has a significant positive impact on business performance. Besides that CVCB (customer participation behaviors dan Customer cityzenship behaviors) has a significant positive influence on business performance.

Based on the results of this research, it is important for batik SMEs in East Java to increase awareness of the natural and social environment. It is important to promote environmental awareness programs to consumers. It is hoped that it can increase consumer awareness of the pro-environmental activities carried out by batik SMEs in East Java. As the results of the analysis from this research show that between strategiesGreen innovation and CVCB requires cooperation to producegreen product which has strong competitiveness in the market.

Collaboration between green batik MSMEs in East Java and consumers in the application Green inovation and CVCB (customer participation behaviors dan Customer citizenship behaviors) This is a profitable form of collaboration because batik SMEs will get a lot of input from consumers so that the green batik produced is improved and in line with market tastes. This condition will be able to increase the competitiveness of

environmentally friendly batik so that sales turnover increases and will ultimately improve business performance.

The importance of co-creation in creating green batik is very beneficial for batik SMEs because consumers feel satisfied with their ideas which receive a response from producers. This condition can also improve product quality, service quality and provide product and service innovation that suits customer needs and desires. This consumer involvement will create consumer satisfaction and loyalty and build their commitment. Thus, this is a consumer assessment of green batik SMEs related to the success of their business performance.

5. Limitations and Further Research.

The results of this research show thatgreen process innovation does not affect business performance. Based on theoretical studies, there are many findings that these two variables have a strong influence, but in the results of this study this is not the case. The results of the empirical analysis show that at the final stage in the production process, most batik craftsmen do not process it themselves but sub it out to other craftsmen, so that when consumers If you complain because there is a discrepancy with your wishes, the craftsman cannot respond quickly.

Based on the results of this research, it is recommended that further research can first be carried out to replicate research from the perspective of green batik SMEs so that various difficulties experienced by green batik SMEs can be studied. Secondly, research can be carried out in other SME settings. The three consumers of green batik want the product produced to be truly perfect because in the end the consumer acts as a reseller. This condition causes consumers to know in detail about product attributes and stages of the production process. Fourth, this research study is based on a consumer perspective so it is only biased towards assessinggreen process innovation. Fifth, research can be carried outgreen innovation in SMEs due to limited knowledge about applicationsgreen innovation. Sixth, consumer characteristics play an important role in purchasing behavior, so in the future research needs to be carried out by adding consumer altruistic variables.

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