

GREEN PRODUCT DIFFERENTIATION AND GREEN PRODUCT LAUNCH SUCCESS DOES IMPACT ON GREEN PRODUCT INNOVATION PERFORMANCE ?

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Abstract—*This study aim is to investigate and evidence empirically analyze the mediating role of green product launch success on green product innovation performance on SMEs industry. This study was collected with 200 managers or owner of SMEs of handmade batik in Yogyakarta, Indonesia. The unit analysis of this research is the batik industry manager both in small and medium scale in Yogyakarta. The sampling technique used through purposive sampling technique. The result of this study shows that green product differentiation has a significant positive effect on green product launch success and green product innovation performance. Furthermore, the green product launch success has a mediating effect on green product innovation performance.*

Keyword—*green product differentiation, green product launch success, green product innovation performance*

I. INTRODUCTION

The concern of business organizations in the green environment is an essential part of the current era (Pehrsson and Pehrsson 2013). The studies on the green environment are still becoming interesting topic in the midst issues of global warming and the impact of competition between small businesses and manufacturing businesses in achieving competitive advantage (Chen et al. 2006).

One strategy that needs to be done by business organizations in achieving competitive advantage is through green innovation (Ar 2012). The efforts to manage the business environment are also important aspects of planning management functions that have an impact on the implementation of an effort to achieve business performance oriented to the green environment issue (Sezen and Çankaya 2013).

This study will be tested in the scope of small and medium enterprises (SMEs) related to the green innovation concept in achieving product innovation performance. Nowadays, the competition among SMEs

has also demanded SME owners to improve their ability to produce product innovations. The research of (Eric M. Olson et al. 2005) explained that: (1) the company needs to get the peculiarity then, competitive advantage can be achieved, (2) marketing activities provide important functions in implementing strategies, and (3) the role of marketing in corporate strategy implementation is a unity of a more specific corporate strategy.

This research was carried out with an analysis unit in the Batik industry that was on the scale of SMEs in Yogyakarta that used natural and eco-friendly ingredients. Even though the industry is trying to reduce operational costs, its existence contributes to advancing the economy. Furthermore, trend and innovation activities carried out by SMEs now have a different approach. One of the examples is the existence of green innovation. The role of marketing or manager in the scope of SMEs is still urgently needed in innovating the eco-friendly product.

This paper aims to contribute to the literature: first, provide development on empirical research models on the effect of green product differentiation on green product launch and green product innovation performance. Secondly, this paper provides empirical evidence on the importance of green product launch in the context of eco-friendly material batik SMEs in Yogyakarta in achieving green product innovation performance.

II. HYPOTHESIS DEVELOPMENT

A. *The relationship of Green product differentiations on Green product Innovation Performance*

The study of Hult and Ketchen (2001) explained the importance of differentiation in business activities. The organization also tries to achieve the best market position. The advantages of market differentiation will affect performance. Langerak (2003) stated that positioning excellence is characterized by (low cost and differentiation). The companies that strive to achieve competitive advantage derived from innovation will

improve business performance (Baaij et al. 2004). Based on this description, a hypothesis is developed:

H1: Green product differentiations have a positive effect on Green product Innovation Performance

B. The relationship of Green product differentiations on Green product Launch

Business competition needs to offer products that have specific characteristics so they can be distinguished from the product of the competitors. The companies must be able to adapt to their environment in order to differentiate the product offerings from innovation to gain a competitive advantage over competitors. The study of Khin et al. (2010) stated that innovation is related to the company's product strategy in reaching the market of its customers. Strategy approach, innovation as something that distinguishes it from competitors (Porter 1985). Based on the description, the hypothesis was developed:

H2: Green product differentiations have a positive effect on Green product Launch

C. The relationship of Green product Launch on Green product Innovation Performance

The study by Lynn and Akgun (1998) found that innovation can encourage the creation of new products. Lynn et al. (1998) also argue that strategy innovation can be differentiated into process-based, speed, market, learning, and qualitative strategies. Meanwhile, the other researchers explained that there was a relationship of green product innovation on green performance carried out by (Ar 2012). The research conducted by (Chen et al. 2006) found that green process innovation and green product innovation as the key to achieving competitive advantage. Based on this description, a hypothesis is developed:

H3: Green product Launch has a positive effect on Green product Innovation Performance

III. RESEARCH METHODS

A. Research Sample

This study was conducted with a survey approach using a questionnaire in empirically testing the effect of causality among research variables. The survey was conducted by taking research samples from eco-friendly materials Batik Tulis SMEs in the DIY area. The design of this research was using a qualitative approach which focuses on the testing of green product innovation performance. The sample in this study was the businessmen of Batik Tulis SMEs made from 148 samples. The sampling technique using purposive sampling.

B. Scale and Measurement

The instrument on the four constructs in this study was measured using a Likert scale with a score between one and seven. Score one describes the least agreeable answer, and a score of seven represents strongly agree.

C. Validity and reliability testing

Testing in the instrument was conducted by examining the validity and reliability of research instrument (questionnaire items) in this study by using confirmatory factor analysis to investigate the relationship between the construct and its indicator (questionnaire validity). Whereas, reliability testing is applied by using Cronbach alpha (Cronbach's α). The following are the results of confirmatory factor analysis and Cronbach alpha (Cronbach's α).

TABLE 1. SCALE ITEM FOR MEASURES

Construct	Item	Standardized factor loading	Cronbach alpha
Green product differentiation	X1	0.711	0.807
	X2	0.618	
	X3	0.606	
	X4	0.794	
	X5	0.643	
Green Product launch	X6	0.660	0.828
	X7	0.811	
	X8	0.680	
	X9	0.763	
	X10	0.613	
Green product innovation performance	X11	0.659	0.823
	X12	0.548	
	X13	0.771	
	X14	0.805	
	X15	0.694	

The results of testing the validity and reliability of the constructs of green core competence, green product innovation, green competitive advantage, and green marketing performance produce a value of loading factors > 0.05 and the value of construct reliability > 0.6 . So it can be concluded that the instrument is valid in measuring the variables.

D. Analysis and results

The test result of the three hypotheses by using Structural Equation Modelling (SEM) program shows the statistical value on the SEM basic assumption test that produces goodness of fit such as Chi-Square in the amount of 121.800. Probability value in the amount of 0.008. TLI value in the amount of 0.944, GFI value in the amount of 0.891, AGFI value in the amount of 0.850 and RMSEA value in the amount of 0.057. The results of these values are several indicators that have met the specified cut-off standard. However, some of the results of these calculations show the marginal value so that it can be done after conducting the normality test and testing the data experiencing outliers. Based on the initial testing of 200 data samples, the final test of the hypothesis left 148 data samples. Based on the results of the testing with the Amos program, the calculation was obtained, as shown in the following picture.

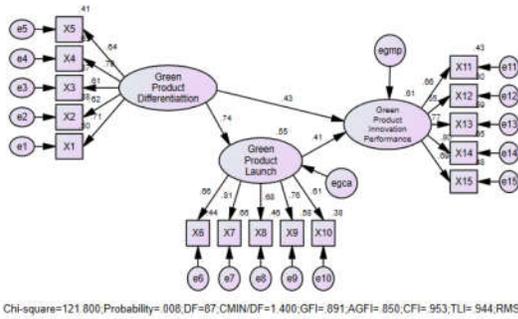


Fig. 1. Full Model of the relationship of green product differentiation, green product launch, and green product innovation performance

Based on Picture 1, it can be concluded three hypotheses, i.e., the relationship of green product differentiation in green product launch and the relationship of the green product launch in green product innovation performance; shows a significant positive influence. Table 2 explains the relationship of green product differentiation in green product launch and the relationship of the green product launch in green product innovation performance. Then the results of this study are also shown in Table 2, which forms three hypotheses.

Table 2. Path coefficient test results of the relationship between green product differentiation, green product launch, and green product innovation performance

Hypot he sis		Standardiz ed path coefficient s	t valu e	Pro b.	Result
H1	Green product differentiation → Green product innovation performance	0.379	2.784	0.005	Signific ant
H2	Green product differentiation → Green product launch	0.638	5.264	0.000	Signific ant
H3	Green product launch → Green product innovation performance	0.416	2.621	0.009	Signific ant

Note: *Significant at $p \leq 0.05$; if $(t) \geq 1.96$

Green product differentiation has a significant positive influence on green product innovation performance. The result of the statistical calculations in Table 2 shows the results of the structural equation modeling test in the relationship between Green product differentiation in green product innovation performance showed with the value of $(t = 0.379 > 1.96)$ with the significance value $(0.005 < 0.05)$. The hypothesis said that green product differentiation has a significant positive effect on green product innovation performance is proven. Thus, hypothesis 1 is accepted.

Green product differentiation has a significant positive influence on green product launch performance. The result of the statistical calculations in Table 2 shows the results of the structural equation modeling test in the relationship between Green product differentiation in green product launch showed with the value of $(t = 0.638 > 1.96)$ with the significance value $(0.005 < 0.05)$. So the hypothesis said that green product differentiation has a significant positive effect on green product launch is proven. Thus, hypothesis 2 is accepted.

Green product launch has a significant positive influence on green product innovation performance. The result of the statistical calculations in Table 2 shows the results of the structural equation modeling test in the relationship between Green product launch in green product innovation performance showed with the value of $(t = 0.416 > 1.96)$ with the significance value $(0.005 < 0.05)$. The hypothesis said that green product launch has a significant positive effect on green product innovation performance is proven. Thus, hypothesis 3 is accepted.

IV. LIMITATION AND FUTURE RESEARCH

The results of this study made an important contribution in testing the empirical research model of the effect of green product differentiation on green product launch and green product innovation performance. It also provides empirical evidence of the importance of green product launch in the context of SMEs Batik made in Yogyakarta in achieving green product innovation performance. The results of this study provide several limitations, including using quantitative study designs through testing empirical models, so that further studies need to be done. This study is also limited in measuring green product innovation performance, which is influenced by green product differentiation, green product launch in the context of SMEs made from natural batik in Yogyakarta. Future research should be carried out using the mix methods approach so that the results of this study can be used as a source of reference and study in future research.

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