



GREEN INNOVATION CAPABILITY AS DRIVER OF SUSTAINABLE COMPETITIVE ADVANTAGES AND SMES MARKETING PERFORMANCE

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ABSTRACT

The purpose of this study was to test the capability of green innovation as the driving factors of sustainable competitive advantage and SMEs marketing performances. Samples in this study were 151 owners of SMEs. The selected sample were SMEs which focused on environmental concerns. The analysis used in this study was the structural equation modeling. To analyze the data, the AMOS version 20 was used as a tool for testing data. The results of this study indicated that (1) the relationship learning and culture of proactive green innovation can improve the relationship learning significantly, (2) green innovation capability is able to improve sustainable competitive advantage significantly, and (3) sustainable competitive advantage can improve SMEs marketing performance significantly. Managerial implication in this research are as follows: (1) to improve green innovation capabilities, proactive culture is needed in developing greening in business. (2) Green innovation capabilities will increase if the SMEs focus on relationship learning.

Key words: Relationship Learning, Culture of Proactive Green Innovation, Green Innovation Capability, Sustainable Competitive Advantage, And Smes Marketing Performance.

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1. INTRODUCTION

Business, environment and continuity are important parts for these years. Continuity has begun more important attribute of economic activities which describe not only production method, but also consumption quality and the attribute of capital investment [1]. The needs of continuing business practice by companies all over the world are identified as the result of whole

improvement in consumers' awareness towards the lack of protection towards environment and social injustice. Today, green economic is billion dollar sector which includes all things from eco-friendly and green product life style, organic farming, renewal energy and technology of pure water and waste management, natural resources and area management [2-7].

Green issue influences directly on R&D and is related to innovation [8]. Green innovation is related to product or green process, including innovation in technology involving in energy thrift, pollution preventing, waste recycle, green product design or management of company's environment [9]. Some other researchers explained that green innovation consists of process and product innovation [10, 11]. Green innovation explains the existence of innovation in process, product, containerization and business attitudes which set green attitudes out.

In the context of SMEs in Indonesia, green innovation can be in form of products using organic ingredients, production products which do not contaminate environment, using recycled containers, reducing the use of plastics, and having habits which refer to loving environment. Most of green-related studies' results are good on developed countries [12]. Although green practice has not been familiar yet among businesses in Indonesia, there are many SMEs try to apply green idea on their business. In Indonesia, green industry concept is in form of production process which set out efficiency and effectiveness of resources usage continuously, so it can harmonize industry building with preserving environment and can benefit society [13]. The SMEs in Indonesia is urged to use and produce more green products or known as by SMEs greener concepts [14]. The concept was declared by Jauhari [14]. These are related to green innovation, (1) making and producing smaller products to thrifty resources (smaller and lighter); (2) using and producing products which can be recycled (recycler and reuse); (3) using and producing products which can be refilled and recharged (refill and recharge); (4) using and producing products which have efficient energy (eficient energy); (5) using and producing products with safe effect and waste for environment.

In resources based view theory (RBV), capability is one of important resources which makes business have competitive superiority. In the context of green innovation, SMEs' capability in applying green innovation on their SMEs becomes important. This capability will make SMEs to have superiority to compete and good work. The capability of green innovation must be supported by various factors. In this research, the supporting factors for SMEs to have green innovation capabilities are relationship learning and culture of proactive green innovation.

First, relationship learning. Relationship learning is defined as collective activities which are happening between customers and supplying organization and is pointed on various information, making sense of information, and integrating acquired information into certain domain-related memories collectively to improve the extend or possibility of domain-related behavior potentially [15]. Furthermore, Selnes and Sallis [15] explained that each motivated part to build collective learning activities will be able to reduce uncertainty. Learning theory has important roles in new theories concerning competitive advantages [16-18]. Learning is not only knowledge, but also experiences, skill and capability development. Therefore, learning activities in the context of relation will be able to improve person's capabilities.

Secondly, culture of proactive green innovation. Green innovation is related to green products or process, including innovation in technology which is involved in energy thrift, pollution preventing, waste recycle, green product design or management of company's environment [9]. Green innovation is used to improve the work of environment management and protection. Chen, Chang [19] defined proactive green innovation as "innovation related to active environment to take initiative of new practices and products in front of the competitors, to reduce the cost, to catch opportunities, to lead in the market or to gain competitive advantage."

The purpose of this study was to test the capability of green innovation as the driving factors of sustainable competitive advantage and SMEs marketing performances. Therefore, the purpose of this study is to investigate several questions as follows:

Q1: to what extent that relationship learning affect green innovation capability?

Q2: to what extent that culture of proactive green innovation and green innovation capability?

Q3: to what extent that green innovation capability and sustainable competitive advantage?

Q4: to what extent that sustainable competitive advantage and marketing SMEs performance?

2. HYPOTHESES

2.1. Relationship Learning and Green Innovation Capability

Basically, relationship learning is ability in building relationship harmonically with relational governance perspective concept [20], in which two sides are collaborating and trust each other, and this will influence the work of economy. Trust becomes an important part in building relationship [21, 22]. This trust will make each person to learn from others. Trust can create a will to share information, to sense information one to another, and can integrate information for decision taking. Dwyer, Schurr [23] also agreed that trust can create commitment to collaborate and to share information. When the company share information and knowledge to customers and suppliers, they improve their basic knowledge, abilities and competitive capacities through learning leveled relationship [24]. Learning is not only through knowledge, but also in form of experiences, skill and ability development. Relationship learning can be information sharing, joint sense making, dan knowledge integration [15, 24] which are expected to be able to improve green innovation capabilities between relations.

H1: relationship learning has positive and significant influences on green innovation capability.

2.2. Culture of Proactive Green Innovation and Green Innovation Capability

The literatures of green management declare repeatedly that in order to behave in continuing way, the organization's action must surpass technical correction and taking responsibilities toward environment through values, conviction and behavior [25]. Culture becomes an important part that must be developed, particularly the proactive culture in green innovation implementation. Business culture must become proactive toward sustainable innovation [2]. Cultures and proactive values on green innovation possessed by SMEs will be able to improve the capabilities to create green innovation.

H2: Culture of Proactive green innovation has positive and significant influence toward green innovation capability.

2.3. Green Innovation Capability and Sustainable Competitive Advantage

Greening industry during the last decade has appeared as strategic instrument for social-economic development and achieving continuing growth [2]. Environment management has been accepted extensively among organizations as a strategic practice to gain competitive advantage [26]. Menon and Menon [27] saw environment as part of the main part of company, in which it will sharpen the company's strategies to achieve competitive advantage [28]. Other research explained that green innovation can improve the company's competitive advantage [9]. Green product innovation will enable the company to achieve advantage including growth, environmental sustainability and the betterness of life [29].

Basically, capabilities can make the company to have competitive advantage compared to the competitors [30]. Resource based view [31] measures resources and company's capabilities that can be able to make the work above the average and to have competitive advantage.

Building certain capability will improve sustainable competitive advantage for the company [32]. In the context of green innovation, we think that green innovation capability will very influence on competitive advantage. Therefore, the proposed hypothesis is as follows:

H3: Green innovation capabilities have positive and significant influence towards sustainable competitive advantages.

2.4. Sustainable Competitive Advantage and marketing SMEs performance

Sustainable competitive advantage is integration of a group of actions done the company to gain continuing benefits compared to the competitors. The word “sustainable” is related to some terms like “responsibility”, “greening”, “company’s social responsibility”, “ecology” and “eco-friendly” [33]. The company tries to identify different position by searching continuing approach for their organization. This position is translated into competitive advantage. The work of superior company is determined by company’s competitive advantage [34-36]. The more SMEs can identify that they have eco-friendly position and social responsibility; it will influence marketing SMEs performance.

H4: Sustainable competitive advantage has positive and significant influence towards the work SMEs marketing work.

3. RESEARCH METHOD

3.1. Sample

The data was acquired by sharing questionnaires to SMEs owners or managers in Central Java and Jogjakarta. The qualified respondents who filled the questionnaires must fulfill one or more qualifications as follows: (1) the SMEs make and produce smaller products to save the resources (smaller and lighter); (2) the SMEs use and produce recycled and reused products (recycler and reuse); (3) the SMEs use and produce refilled and recharged products (refill and recharge); (4) the SMEs use and produce products with efficient energy (eficient energy); and (5) the SMEs use and produce products with safe effects and wastes towards environment from 300 shared questionnaires, there were only 151 questionnaires returned and could be used for the following analysis. The respondents’ characteristics are as follows:

Table 1 Respondents’ Characteristics

Respondents’ Characteristics	Frequency	%
Gender		
Male	112	74.17%
Female	39	25.83%
Usia		
< 30 years old	68	45.03%
30 - 50 years old	73	48.34%
> 50 years old	10	6.62%
Status of Managers/Owners		
Owners	145	96.03%
Manager	6	3.97%
The SMEs Field		
Culinary	25	16.56%
Art and Crafts	65	43.05%
Fashion	26	17.22%

Used goods production	12	7.95%
Others	23	15.23%

3.2. Measurement

Each question in this research has 7 scales, in which 1 means “extremely not agree” and 7 means “extremely agree”. The indicators of each variable used in this research are as follows:

- Relationship learning indicators are adopted from Selnes and Sallis [15] and Leal-Millán, Roldán [24] including information sharing, joint sense making, and knowledge integration.
- Culture of proactive green innovation indicators are adopted from Chen, Chang [19] including environmental values, shared environmental beliefs, a set of shared environmental norms.
- Green innovation capability indicators are adopted from Chen, Lai [9] including ability to produce green innovation products, ability to produce waste disposal innovation, and ability to produce recycled containers.
- Sustainable competitive advantage indicators are adopted including having advantage of caring environment compared to the competitors, having advantage to continue focusing on green, and having advantage to have social responsibility compared to the competitors.
- SMEs Marketing performance indicators are adopted including customers’ growth, profit growth, and business growth.

4. RESULTS

4.1. Validity and Reliability Testing

The instrument testing in this research used validity and reliability test. The validity in this research used convergent validity by testing factor loading and Average Variance Extracted (AVE). The qualified instruments are valid if the factor loading and AVE score are above 0.5 [37]. Table 2 showed that all factor loading and AVE scores have been fulfilled the qualifications, so it can be concluded that the built instruments have been valid. The reliability test used in this research was composite reliability. The instruments are said as having high reliability if they are above 0.7 [37]. Table 2 showed that the built instrument has high reliability because the score is above 0.7.

Table 2 The Result of Validity and Reliability Testing

Variables and Indicators	Factor Loading	AVE	Composite Reliability
Relationship Learning		0.865	0.951
RL1	0.921		
RL2	0.940		
RL3	0.929		
Culture of Proactive Green Innovation		0.905	0.967
PGI1	0.979		
PGI2	0.955		
PGI3	0.919		
Green Innovation Capability		0.826	0.934
GIC1	0.909		
GIC2	0.957		
GIC3	0.857		
Sustainable Competitive Advantage		0.890	0.960
SCA1	0.933		

Variables and Indicators	Factor Loading	AVE	Composite Reliability
SCA2	0.949		
SCA3	0.948		
SMEs Marketing Performance		0.926	0.974
MP1	0.959		
MP2	0.953		
MP3	0.975		

4.2. Goodness of Fit Testing

Before testing the built hypotheses in the previous chapter, it is needed to conduct goodness of fit testing. Goodness of fit testing will show if the acquired data have been suitable to the built model. In this research, Normed Fit Index (NFI), Relative Fit Index (RFI), Incremental Fit Index (IFI), Comparative Fit Index (CFI), and Tucker Lewis Index (TLI) were used. All indicators of goodness of fit must have score above 0.90 [37]. The followings are goodness of fit score: NFI (0.900), RFI (0.877), IFI (0.920), CFI (0.920), and TLI (0.901). Only RFI has score under 0.90, but it is still accepted because it is categorized as average. The conclusion is that they have fulfilled the criterions of goodness of fit.

4.3. Hypotesis Testing

Table 3 showed hypotheses test results. There were 4 hypotheses tested in this research. The result showed that all hypotheses were accepted. The followings are the results: (1) relationship learning has positive and significant influences on green innovation capability ($\beta = 0.706$; $\rho < 0.001$); (2) Culture of Proactive green innovation has positive and significant influence toward green innovation capability ($\beta = 0.323$; $\rho < 0.001$); (3) Green innovation capabilities have positive and significant influence towards sustainable competitive advantages. ($\beta = 0.997$; $\rho < 0.001$); and (4) Sustainable competitive advantage has positive and significant influence towards the work SMEs marketing performance ($\beta = 0.887$; $\rho < 0.001$).

Table 3 The Result of Hypotheses Testing

Hipotesis	Hasil	Keterangan
H1: Relationship Learning → Green Innovation Capability	$\beta = 0.706$; $\rho < 0.001$	Hypothesis was accepted
H2: Culture of Proactive Green Innovation → Green Innovation Capability	$\beta = 0.323$; $\rho < 0.001$	Hypothesis was accepted
H3: Green Innovation Capability → Sustainable Competitive Advantage	$\beta = 0.997$; $\rho < 0.001$	Hypothesis was accepted
H4: Sustainable Competitive Advantage → SMEs Marketing Performance	$\beta = 0.887$; $\rho < 0.001$	Hypothesis was accepted

5. DISCUSSION AND CONCLUSION

The result of this research showed that relationship learning can improve green innovation capability. Relationship has an important role in transferring knowledge, skills, and experiences among those relate one to another. In this research, the concept of relationship learning means SMEs and those involving in them conduct information sharing, joint sense making, and knowledge integration [15, 24]. To improve skills and capabilities, learning and knowledge from other resources are needed. Therefore, relationship learning will have influence towards green innovation capability.

Culture of proactive green innovation has influence towards green innovation capability. Cultures (Values, beliefs, and norms) which are built in SMEs (green behavior) will have

influence towards all SMEs employees' behavior. The employees will follow the built green values. The values will make them to initiate improving their skills in green innovation. They will conduct green innovation by having needed capabilities. They will learn, find experiences, and train themselves so that they can have green innovation capability according to the needs of business or SMEs.

Green innovation capability has influence towards sustainable competitive advantages. Resources based view explains that the company which has unique capability will have influence towards competitive advantage of the company [31]. In the context of green, one of capabilities is green innovation capabilities. This capability will create innovation in technology involving in saving energy, preventing pollution, waste recycling, green product design or environment management of the company [9]. Green innovation capabilities will have influence towards competitive advantage possessed by SMEs. Green activities will have great influence towards sustainable competitive advantages [38]. Competitive advantage which is sustainable can be in form of having caring advantage towards environment compared to the competitors, having advantage to continuing focus on green, and having advantage of social responsibility compared to the competitors.

Sustainable competitive advantage has influence towards the work. This result is in line with the result of the previous researches [34-36]. SMEs with the advantage will be considered by the customers as good SMEs. The customers who see that the SMEs have advantage of caring environment compared to the competitors, have advantage to continuing focus on greening, and having advantage of social responsibility compared to the competitors, will make the customers decide purchasing. In advance, the growth of customers, the growth of profits, and the growth of business will be higher. Therefore, it can be concluded that sustainable competitive advantage has influence towards SMEs marketing work.

Managerial implication in this research are as follows: (1) To improve green innovation capabilities, proactive culture is needed in developing greening in business. The green values and norms in the business will make all resources focus on green innovation development. Indirectly, the possessed resources will initiate to have green innovation capabilities by learning, sharing, and finding experiences; (2) green innovation capabilities will increase if the SMEs focus on relationship learning. Networking becomes an important part in this. SMEs must find networking which have similar desires to develop green innovation. Those relating will agree to conduct information sharing, joint sense making, and knowledge integration.

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