

Fostering The Sense of Eco-Innovation Among Entrepreneurs

Ferdy Andrian¹ Kartika Nuringsih^{1*}

¹*Faculty of Economics & Business, Universitas Tarumanagara, West Jakarta - 11470, Indonesia*

^{*}*Corresponding author. Email: kartikan@fe.untar.ac.id*

Submitted: May 2022, Revised: October 2022, Accepted: February 2023

ABSTRACT

In line with the target of achieving sustainable development goals in 2030, the sustainability issues must be the foundation for building a competitive advantage for the company. Likewise, for micro, small and medium enterprises (MSMEs) to apply sustainability aspects in building sustainable competitive advantages. Therefore, the research objective is to analyze various factors affecting the sustainability of the competitive advantage of MSMEs in West Jakarta. Based on a prior study, three variables were selected, namely eco-innovation, eco-regulation, and green product behavior as determinants for sustainable competitive advantage. As many as 100 MSMEs were selected as respondents using a purposive sampling technique. Data were collected based on a questionnaire with quantitative analysis techniques using structural regression. Data processing using Smart-PLS with the following results: eco-regulation and green product behavior have a significant influence on sustainable competitive advantages. The influence of the formation of competitive advantage by the two variables is well perceived by business actors. Otherwise, eco-innovation has no significant effect on the sustainability of competitive advantage. Therefore, it is necessary to educate MSMEs to foster a sense of eco-innovation among MSMEs to support a green economy which ultimately contributes to the achievement of sustainable development. In the end, the collaboration of three variables as a mechanism to build a sustainable competitive advantage.

Keywords: *Eco-innovation, eco-regulation, green product behavior, sustainability competitive advantage*

1. INTRODUCTION

In line with the target of achieving sustainable development goals (SDGs) in 2030, in accelerating realizing these goals, collaboration with corporations and the MSMEs sector is needed. Such implementation should be an important part of strategy development so that sustainable competitive advantage is formed. Although only at a limited level and on a simple scale, in this era of sustainability, competitive advantage needs to be aligned with these aspects.

Conceptually, Porter and van der Linde provide an idea of the importance of considering environmental issues in competitive strategy. This idea is in line with concerns about the environmental damage that are increasingly massive at this time so as wisdom from business activities, attention is needed on environmental sustainability [1]. Further, the sustainable competitive advantage (SCA) is an important concern to maintain the company's existence among competitors [2]. However, it is not easy to understand and realize this strategy so there is a lot of damage to environmental quality and pollution caused by the impact of neglecting environmental sustainability. Although at a simple level, this study aims to identify the extent to which entrepreneurs understand SCA and what factors influence the formation of sustainable advantage among the owner of MSMEs.

Basically, in realizing these advantages, innovation is an important part of encouraging entrepreneurial success. In line with this innovation, Schumpeter in 1934 has warned about creative destruction [3], so that the approach is aligned with environmental sustainability domain as part of

innovation so as not to be distracted by innovations from competitors. An entrepreneur is a person who recognizes potential and learns to develop it to seize opportunities and organize businesses in realizing an eco-innovation business. In harmony with Schumpeter, breakthroughs based on eco-innovation include process, product, and organization as a form of adaptation to environmental destruction so that it becomes a strength in building SCA.

As a further consideration in preparing the SCA, eco-regulation is needed to form pro-environmental behavior among entrepreneurs. Environmental damage is one of the global problems that exist in this era so that becomes a serious threat to human life and other living things. It is not limited to natural disasters such as floods or droughts but reduces the vitality and sustainability of economic development performance. This is because the world's economic output is highly dependent on the sustainability of natural systems [4].

Moreover, environmental regulation involves a set of instruments ranging from command and control instruments to economic-based incentives. Meanwhile, command and control instruments have been criticized for not taking into account the associated economic costs and failing to achieve potential environmental outcomes. Therefore, regulations with different aspects aim to generate environmental awareness and force companies to change their business and environmental strategies.

Further, it is related to the behavior of purchasing green products as a realization of eco-innovation and protection through eco-regulation. The purpose of establishing competitive advantage is to encourage or maintain market segments so that in line with the pro-environment movement, it also fosters consumer behavior toward green products. Marketing has a role in influencing customers to form a mindset, intention, and buying behavior toward green products. If there is no change in consumer decisions in buying eco-products, the impact of implementing environmental technologies, production systems, economic policies, and social initiatives on environmental sustainability is not optimally useful or uncertain [5]. When consumer behavior is already a privilege on green products, it supports enterprises that have prepared SCA.

By the description, the formulation of the problem in this study emphasizes whether eco-innovation, eco-regulation, and green product behavior affect sustainable competitive advantage? However, among the three factors that influence SCA, an eco-innovation is relatively more difficult for entrepreneurs at the MSME level to carry out. This is related to the limited knowledge, creativity, and resources among entrepreneurs so this aspect becomes a priority in this study.

2. LITERATURE REVIEWS

According to Kim et al., sustainable competitive advantage was explained by the unique products/services characteristics which keep the enterprise in a specific position and which make it different from its competitors, whether by the privileged market position. Thus, SCA has a uniqueness that is different from competitors through pro-environmental aspects [2].

According to Kemp & Pearson defined eco-innovations the “production, application or exploitation of a good, service, production process, organizational structure, or management or business method that is novel to the firm or user and which results, throughout its lifecycle, in a reduction of environmental risk, pollution and the negative impacts of resources use (including energy use) compared to relevant alternatives.” [6]. Moreover, Doran & Ryan defined “an eco-innovation is defined as a new or significantly improved product (good or service), process, organizational method or marketing method that creates environmental benefits compared to alternatives”. Therefore, it impacts to the SCA [7].

The study of [8] explored that eco-innovation consists of some types, namely: (1) eco-organizational innovation contributing to improving management processes and managing the organization's environmental impact, (2) eco-process innovation developing manufacturing processes to reduce negative impacts on the environment, and (3) eco-product innovation refers to improving the environmental aspects of existing products or developing new environmentally friendly products. Therefore, in line with the phenomenon of global warming, it can trigger environmental damage so eco-innovation contributes to reducing damage. This is a contribution to the SDGs [9].

Eco-regulation is a policy or regulation made by a company or MSME to be able to emphasize environmentally friendly products on the products that will be made by the company. Therefore, the

existence of regulation fosters a sense of environmental awareness and forces companies to change their business and environmental strategies [8]. Therefore, the regulation also supports SCA for business actors so that the effect of eco-regulation is by previous studies on SMEs in Egypt [10].

Green product behavior is determined by many factors depending on the type of behavior and involvement with the product. There are four categories of determinants of green product behavior, e.g., contextual strength, attitude factors, habits or routines, and personal abilities. Leonido et al. stated "the consumer decision-making process involves five stages consist of "need recognition", "information search", "evaluation of alternatives", "purchase decision", and "post-purchase behavior" [11].

At the individual level, this behavior is related to purchase intention so it has relevance to the theory of planned behavior or TPB. Moreover, it connect to purchase on a green product, so this behavior is related to the willingness to buy of green products [11].

In line with the impact of the three variables, the following hypothesis is formulated:

H1: Eco-innovation impacts positively to sustainability competitive advantage

H2: Eco-regulation impacts positively to sustainability competitive advantage

H3: Green product behavior impacts positively to sustainability competitive advantage

3. METHODS

According to Dewi & Rahmianingsih noted population is a generalization area consisting of objects and subjects which are the quantities and characteristics determined by the researcher to be studied and then conclusions are drawn [12]. The population is the whole unit or individual of interest to be studied, usually, there is no data available for almost all individuals in a given population [7]. This study involves the owner of MSMEs in West Jakarta.

It uses a non-probability sampling methods with combining a judgmental sampling approach, which is a form of convenience sampling where the population elements are selected based on the assessment made by the researcher. A judgment sample or commonly referred to as purposive is a self-selected sample because it can achieve research objectives or can be believed to be representative. It used the purposive sampling method to collect samples that are suitable for the criteria.

This study involved sustainability competitive advantage (SCA) as an endogenous variable while three variables are endogenous variables such as eco-innovation (EI), eco-regulation (ER), and green product behavior (GPB). The measurement of these constructs is as follows: eco-innovation taken from [13], eco-regulation [14], green purchase behavior [11] and sustainable competitive advantage [15]. Each construct consists of 5 indicators with a total of 20 items. However, the results of the validity test show that several indicators are invalid so the final number is 10 items. The indicator was developed into a questionnaire with an interval scale of 1 (strongly disagree) to 5 (strongly agree). Questionnaires were distributed to respondents via Google Forms in November 2021.

Testing the validity and reliability as a test of the outer model ensures the quality of the instrument is a valid and reliable condition. The validity test is based on the outer loading of each indicator, while the reliability uses Cronbach Alpha and composite reliability of at least 0.70. The study uses quantitative analysis. Hypothesis testing using structural regression analysis with data processing using Smart-PLS 3.0 software. The use of the software meets the criteria in the range of 100 samples. Hypothesis testing is based on a t-test with Alpha 5% or 1.96.

4. FINDINGS AND DISCUSSIONS

4.1. Findings

According to [9], a validity test is a measuring tool used to measure and prove the validity of a questionnaire used in a study. The validity test is stated as an instrument in the questionnaire to determine and measure each indicator used to obtain answers to the characteristics of the variables studied [10]. The reliability test is a test used to measure a questionnaire containing indicators of each variable, carried out to measure and analyze the reliability of a variable and measure the correlation

between answers to questions [9]. A questionnaire is reliable if the answers to the questions are consistent or stable over time. The reliability of a test refers to the degree of stability, predictability, consistency, and accuracy.

Table 1 Validity and Reliability Instruments

Construct	Indicator	Loading	Status	Reliability	Status
Eco-Innovation	EI-1	0.944	Valid	Composite: 0.960 Cronbach's Alpha: 0.938	Reliable
	EI-2	0.930	Valid		
	EI-4	0.955	Valid		
Eco-Regulation	ER-1	0.924	Valid	Composite: 0.936 Cronbach's Alpha: 0.897	Reliable
	ER-3	0.934	Valid		
	ER-5	0.873	Valid		
Green Product Behavior	GPB-1	0.915	Valid	Composite: 0.927 Cronbach's Alpha: 0.843	Reliable
	GPB-3	0.943	Valid		
Sustainable Competitive Advantage	SCA-1	0.893	Valid	Composite: 0.903 Cronbach's Alpha: 0.787	Reliable
	SCA-3	0.922	Valid		

Table 2 Path Coefficients

Path	T Statistics	P Values	F Square	Original Sample	Sample Mean	Standard Deviation
Eco-Innovation -> Sustainable Competitive Advantage	0.005	0.996	0.000	0.001	0.079	0.005
Eco-Regulation -> Sustainable Competitive Advantage	2.753	0.006	0.224	0.376	0.374	2.753
Green Product Behavior -> Sustainable Competitive Advantage	3.721	0.000	0.878	0.593	0.521	3.721
R ² :0.823; Q ² : 0.648; Goodness of Fit: 0.836						

Table 1 shows these results suitable with the criteria of reliability. Further information supports the validity values. It depicts the entire score of loading factors higher than 0.70 so that all indicators fulfill the criteria's validity. So, it can be concluded that all indicator variables used are valid and can meet the requirements. Table 2 depicts the results of the testing of the hypothesis which elaboration as follows:

Hypothesis 1: It indicates the impact of eco-innovation to sustainable competitive advantage results a t-statistics value of 0.005 or p-value is 0.996. It shows H1 is rejected because the value of t-statistics less than 1.96 while the p-values is greater than 0.05. Based on these results, the eco-innovation has no significant impact on the sustainability of competitive advantage at the level of 5%.

Hypothesis 2: It indicates the impact of eco-regulation on sustainable competitive advantage has an at-statistics value of 2.753 or a p-value is as many as 0.006 so that H2 is accepted at a level of 0.05. It shows that eco-regulation has a significant effect on the sustainability of competitive advantage.

Hypothesis 3: It indicates the impact of green product behavior on sustainable competitive advantage has an at-statistics value of 3.721 or a p-value is as many as 0.000 so that H3 is accepted at a level of 0.05. It shows green product behavior has a significant effect on the sustainability of competitive advantage.

These results indicate that eco-regulation and green product behavior support sustainability competitive advantage. Conversely, eco-innovation cannot impact sustaining the competitive advantage. Therefore, it needs to the treatment for improving innovation among entrepreneurs.

4.2. Discussions

Eco-innovation has a negative and insignificant effect on the sustainability of competitive advantage among entrepreneurs of MSMEs in West Jakarta. Thus, the results are not by [9]. It is different from both constructs of eco-regulation and green product behavior. In aligning with the green ecosystem so entrepreneurs must prepare to improve their product's innovation relevantly to eco-innovation. These variables relate to sustainability issues in the global community. Therefore, the enterprise's strategy must link to SDGs. In particular, eco-innovation must be fostered by the government and stakeholders to accompany entrepreneurs in learning green innovation.

Eco-regulation protects the environment so that individuals who run their business without implementing regulations properly will receive punishment. It is supported by [10]. It is intended that the products made by can comply with existing environmental regulations. The regulation produces benefits in arranging entrepreneurs to respect with environmental regulation. It can overcome environmental destruction which is caused by business activities.

Green product behavior has a positive and significant influence on SCA, so this result is supported by [16] Green product behavior is the behavior to use eco-friendly products. This behavior becomes a reference for the company in making products that are popular with the community, so being able in determining products that are suitable and needed by communities is in line with the eco-entrepreneurial ecosystem.

It is expected to be a benchmark for companies to determine which products are suitable to be marketed in each region. Companies can compete with each other in making eco-friendly products that are suitable for each region. So that it can trigger a sustainable competitive advantage among MSMEs, especially in West Jakarta. Nowadays, corporations and entrepreneurs are challenged to promote this behavior to customers. Therefore, the development of a strategy must be synergized with the SDGs.

It is relevant to the prior study of Nuringsih & Nuryasman that stated the significant relationship between green entrepreneurship and sustainable development [17] and [18]. Based on this reason, eco-innovation is a part of the strategy development of eco-entrepreneurship. In the sustainability era, the owners of MSMEs must understand and pursue green opportunities through the development of eco-innovation. For supporting this moment, stakeholders and the government collaborate with MSMEs for upgrading their ability to innovate. Moreover, this approach can drive entrepreneurs to improve their ability in practicing eco-innovation.

5. CONCLUSION

The goal of the study is to understand the effect of eco-innovation, eco-regulation, and green product behavior on the sustainable competitive advantage among MSMEs in West Jakarta. Eco-innovation is not significant so need for mechanisms by making collaboration among stakeholders to facilitate MSMEs in upgrading knowledge, experience, resources, and creativity to improve eco-innovation such as green-product or green technology. The next study can involve the construct of social responsibility as a power to accompany MSMEs in achieving the sustainability of competitive advantage in the future.

ACKNOWLEDGMENT

The authors would like to thank the LPPM of Universitas Tarumanagara for supporting the final project through the SPK contract No: 1458-Int-KLPPM/Untar/IX/2021. Thank you to the informants and respondents (the owner of MSMEs) in West Jakarta who have collaborated in collecting data during this study.

REFERENCES

- [1] M. Porter, and C. van der Linde. "Toward a new conception of the environment competitiveness relationship". *The Journal of Economic Perspectives*, vol. 9, No. 4, 1995, pp. 97-118.
- [2] K.H. Kim., B.J. Jeon., H.S. Jung., W. Lu., and J. Jones, "Effective employment brand equity through sustainable competitive advantage, marketing strategy, and corporate image". *Journal of Business Research*, 65(11), 2012, pp. 1612–1617. doi:10.1016/j.jbusres.2011.02.047
- [3] P. Aghion. "Entrepreneurship and growth: lessons from an intellectual journey". *Small Bus Econ*, 48, 2017, pp. 9–24. Doi: 10.1007/s11187-016-9812-z
- [4] I.W.E. Arsawan, V. Koval, I. Rajiani, N.W. Rustiarini, W. G. Supartha, and N. P. S. Suryantini, "Leveraging knowledge sharing and innovation culture into SMEs sustainable competitive advantage," *Int. J. Product. Perform. Manag.*, 2020, doi: 10.1108/IJPPM-04-2020-0192
- [5] J.G. Liobikienė., J. Mandravickaitė., and J. Bernatoniene. "Theory of planned behavior approach to understand the green purchasing behavior in the EU: A cross-cultural study. *Ecological Economics*", 125, 2016, pp. 38–46. doi:10.1016/j.ecolecon.2016.02.008
- [6] J. Hojnik., and M. Ruzzier. "What drives eco-innovation? A review of an emerging literature". *Environ. Innovation Soc. Transitions*, 2015, <http://dx.doi.org/10.1016/j.eist.2015.09.006>
- [7] J. Doran., and G. Ryan. "Regulation and firm perception, eco-innovation and firm performance," *Eur. J. Innov. Manag.*, vol. 15, no. 4, pp. 421–441, 2012. doi: 10.1108/14601061211272367
- [8] C.C.J. Cheng, C.L. Yang, and C. Sheu. "The link between eco-innovation and business performance: A Taiwanese industry context," *J. Clean. Prod.*, vol. 64, pp. 81–90, 2014. doi: 10.1016/j.jclepro.2013.09.050
- [9] M. Nasrollahi., M.R. Fathi., and N.S. Hassani, N.S. "Eco-innovation and cleaner production as sustainable competitive advantage antecedents: the mediating role of green performance", *Int. J. Business Innovation and Research*, vol. 22, No. 3, 2020. pp. 388–407
- [10] K. Mady, M.A.S. Abdul Halim, and K. Omar, "Drivers of multiple eco-innovation and the impact on sustainable competitive advantage: evidence from manufacturing SMEs in Egypt," *Int. J. Innov. Sci.*, 2021, doi: 10.1108/IJIS-01-2021-0016.
- [11] C.N.L. Tan., A.O. Ojo., and R. Thurasamy. "Determinants of green product buying decision among young consumers in Malaysia". *Young Consumers*. 2019. Doi: 10.1108/yc-12-2018-0898
- [12] R. Dewi and A. Rahmianingsih, "Increasing Company Value Through Green Innovation and Eco-Efficiency," *J. Ekon Expansion. Finance, Banking. and Accounts*, vol. 12, no. 2, 2020, pp. 225–243. doi: 10.35313/ekspansi.v12i2.2241
- [13] W. Cai and G. Li. "The drivers of eco-innovation and its impact on performance: Evidence from China," *J. Clean. Prod.*, vol. 176, pp. 110–118, 2018, doi: 10.1016/j.jclepro.2017.12.109
- [14] J. Hojnik., and M. Ruzzier, M. "The driving forces of process eco-innovation and its impact on performance: Insights from Slovenia". *J. Clean. Prod.*, 133, 2016, pp. 812–825. <https://doi.org/10.1016/j.jclepro.2016.06.002>
- [15] J.C.F. De Guimarães., E.A. Severo., and C.R.M. de Vasconcelos. "The influence of entrepreneurial, market, knowledge management orientations on cleaner production and the

- sustainable competitive advantage”. *J. Clean. Prod.*, 174, 2018, pp. 1653–1663. doi:10.1016/j.jclepro.2017.11.074
- [16] H.E. Marchel., and K. Nuringsih. “Entrepreneurial Education, Green Entrepreneurial Orientation, and Green Value of Ecology Entrepreneurial Intention.”, *J. of Managerial and Entrepreneurship*, Vol. II (4), 2020, pp. 914-924
- [17] K. Nuringsih., and M.N. Nuryasman. “The role of green entrepreneurship in understanding Indonesia economy development sustainability among young adults”. *Estudios de Economia Aplicada*, vol. 39, issue 12, 2021. <https://ojs.ual.es/ojs/index.php/eea/article/view/6021>
- [18] K. Nuringsih, M.N, Nuryasman, I. Prasodjo., and R. Amelinda, "Sustainable entrepreneurial intention: the percieved of triple bottom line among female students", *Jurnal Manajemen*, Vol. XXIII (02), June, 2019, pp.168-190. DOI: <https://dx.doi.org/10.24912/jm.v23i2.472>