

Chaniago, Harmon

## Article

# The effect of small business innovation and the role of government on the environment : evidence from Indonesia

International Journal of Energy Economics and Policy

## Provided in Cooperation with:

International Journal of Energy Economics and Policy (IJEPP)

*Reference:* Chaniago, Harmon (2021). The effect of small business innovation and the role of government on the environment : evidence from Indonesia. In: International Journal of Energy Economics and Policy 11 (6), S. 198 - 205.

<https://www.econjournals.com/index.php/ijeepp/article/download/11808/6119>.

doi:10.32479/ijeepp.11808.

This Version is available at:

<http://hdl.handle.net/11159/7880>

## Kontakt/Contact

ZBW – Leibniz-Informationszentrum Wirtschaft/Leibniz Information Centre for Economics  
Düsternbrooker Weg 120  
24105 Kiel (Germany)  
E-Mail: [rights\[at\]zbw.eu](mailto:rights[at]zbw.eu)  
<https://www.zbw.eu/>

## Standard-Nutzungsbedingungen:

Dieses Dokument darf zu eigenen wissenschaftlichen Zwecken und zum Privatgebrauch gespeichert und kopiert werden. Sie dürfen dieses Dokument nicht für öffentliche oder kommerzielle Zwecke vervielfältigen, öffentlich ausstellen, aufführen, vertreiben oder anderweitig nutzen. Sofern für das Dokument eine Open-Content-Lizenz verwendet wurde, so gelten abweichend von diesen Nutzungsbedingungen die in der Lizenz gewährten Nutzungsrechte. Alle auf diesem Vorblatt angegebenen Informationen einschließlich der Rechteinformationen (z.B. Nennung einer Creative Commons Lizenz) wurden automatisch generiert und müssen durch Nutzer:innen vor einer Nachnutzung sorgfältig überprüft werden. Die Lizenzangaben stammen aus Publikationsmetadaten und können Fehler oder Ungenauigkeiten enthalten.

## Terms of use:

*This document may be saved and copied for your personal and scholarly purposes. You are not to copy it for public or commercial purposes, to exhibit the document in public, to perform, distribute or otherwise use the document in public. If the document is made available under a Creative Commons Licence you may exercise further usage rights as specified in the licence. All information provided on this publication cover sheet, including copyright details (e.g. indication of a Creative Commons license), was automatically generated and must be carefully reviewed by users prior to reuse. The license information is derived from publication metadata and may contain errors or inaccuracies.*



<https://savearchive.zbw.eu/terms-of-use>



# The Effect of Small Business Innovation and the Role of Government on the Environment: Evidence from Indonesia

Harmon Chaniago\*

Department of Business Administration, Politeknik Negeri Bandung, Indonesia. \*Email: [muhammadharmon@gmail.com](mailto:muhammadharmon@gmail.com)

Received: 12 July 2021

Accepted: 13 September 2021

DOI: <https://doi.org/10.32479/ijeep.11808>

## ABSTRACT

This study aims to analyze individual and organizational innovation in small businesses and their impact on the environment. The focus of the analysis is also expanded on how to engineer the innovations that exist in small businesses through consumer behavior so that the engineering carried out is effective in protecting the environment. The role of the government is used as a regulator in a country. The research was conducted using a quantitative descriptive method, then continued with a document study on the Indonesian government's environmental regulations. The research was carried out during the Covid-19 pandemic in a sizeable Indonesian city, namely Bandung City. The study results show that small businesses' individual and organizational innovation play a role in determining environmental conditions. Government engineering to change consumer behavior and consumer needs is very effective in changing the behavior of entrepreneurs to go green and green business

**Keywords:** Individual Innovation, Organizational Innovation, Environment, Small Business, Government Engineering

**JEL Classifications:** O36, F18, Q58

## 1. INTRODUCTION

Small business is an economic activity carried out independently or with immediate family using simple technology, and its owner usually doubles as a leader and an employee (Chaniago, 2020; Patel et al., 2012). Examples of small businesses are shops, stalls, confection, laundry services, workshops, home businesses, and informal businesses. Small businesses grow and develop naturally, with a more significant number than large and medium enterprises. The Indonesian government groups small businesses into two groups, namely formal and non-formal small businesses (UU\_No\_20, 2008). The exact data on non-formal/micro-enterprises in Indonesia are unknown because most non-formal/micro-enterprises do not report their businesses to the government.

There is quite a lot of research that mentions small business barriers. SMEs face internal obstacles in developing innovations that can solve their problems (Sundström et al., 2020). This also happens to small businesses in Indonesia. The issues are grouped into marketing,

raw materials, capital, technology, and business (Ariani and Utomo, 2017; Chaniago, 2020; Maksum et al., 2020). All of these problems boil down to the ability of small businesses to make innovations.

Facts on the field reveal that when Indonesia was hit by the Covid-19 pandemic (March 2021), many small businesses could not keep running and chose to stop operating. However, some were able to survive and even develop. Small businesses that grow and develop during the Covid-19 pandemic must have certain strategies, such as making innovations. Research has proven that the creativity of entrepreneurs is positively related to enterprise-level innovation, and innovation is an important element in business success. However, on the one hand, studies of individual entrepreneurs in driving innovation are still few (Baron and Tang, 2011). Individual entrepreneurs are conceptually similar to independent businesses, private businesses, or small businesses.

In simple terms, innovation can be described as applying ideas to create new products with lower energy in various company

activities and keep the company's output attractive and competitive. Innovation can be seen from multiple sides, such as technology, production, marketing, and service. It must also adjust the company's goals to consumer needs or customer orientation innovation need ("COIN"). Every business person needs to make innovation that is consumer-oriented (Bhatnagar and Gopalaswamy, 2017; Sundström et al., 2020). Business people who can adapt their products to COIN will continue to exist and be needed by consumers. These adjustments require innovation from time to time. In essence, business innovation must always apply the COIN principle and make COIN the main focus of attention.

Many entrepreneurs often ignore the environment in trying to meet consumer needs (Abbas, 2012; Jegasothy, 1999). There are allegations of small businesses doing the same. Researchers said that small businesses contribute to damaging the environment (Nugroho et al., 2017). Small businesses are considered less concerned with the environment. If this is true, effective research and solution are needed.

There is still little research on the drivers of environmental behavior in small businesses, and small businesses need to be educated on their role in protecting the environment (Díaz-García et al., 2015; Worthington and Patton, 2005). It is essential to study the part of small businesses in the environment and innovation, including the role of government and controlling small business consumer behavior. This research seeks to find out how to engineer small business innovations to be valuable and at the same time preserve the environment.

## 2. LITERATURE REVIEW

### 2.1. Small Business Innovation

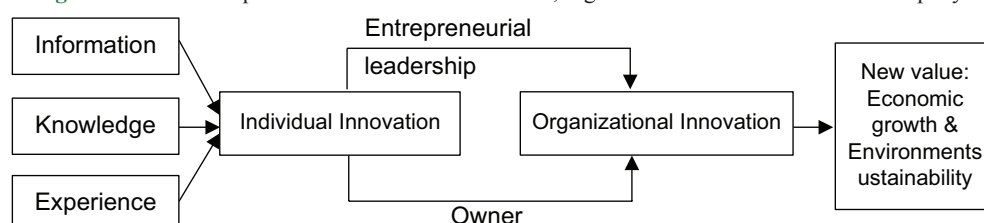
Innovations that address social and environmental economic issues are increasingly being recognized as drivers of change in society (Cuntz et al., 2020). Innovation is defined as a new technology, service, or process aimed at improving the performance of individuals and companies (Klein et al., 2001) or as a disjointed process characterized by trial and error, often unpredictable and of high complexity (Bruni et al., 2019). In the literature, innovation is sometimes referred to as the initiation, adoption, and implementation of a new idea or activity to the adopting organization (Bhatnagar and Gopalaswamy, 2017; Dub et al., 2014). According to them, innovation can be seen from various sides, such as product innovation, technological process, organization, market, and service. Most innovations focus on product or technology innovation in a manufacturing context (Vincent et al., 2004). However, service researchers develop service innovations because their characteristics are

different from product and technology innovations (Bhatnagar and Gopalaswamy, 2017; Gadrey et al., 1995; Sundbo, 1997). This explanation shows that there is no standard agreement on innovation. For companies that produce goods, it is elementary to explain the meaning of innovation. Innovation for them tends to be associated with the emergence of new products that are superior to old products and can compete in the market. However, in trading companies, innovations tend to come in the form of service innovation. Service innovation is defined as "the exploitation of ideas for performance that are new to the company and offer new benefits to customers" (Berry et al., 2006). Service innovation is the primary source of competitive advantage (Lusch et al., 2007). Several aspects of service innovation include strategy, customer engagement, employee adaptation, inter-organizational relations, knowledge management (Bhatnagar and Gopalaswamy, 2017).

From those various viewpoints, innovation in this study is defined as the use of quality individual ideas, developed and implemented by individuals, groups, or companies into new activities to make it more successful and have an impact on improving the economy and prosperity of the community (Bhatnagar and Gopalaswamy, 2017; Björk and Magnusson, 2009; Gumusluoglu and Ilsev, 2009; Kim and Chung, 2017; Rogers, 1998; Stock and Watson, 2002). Ideas are developed from time to time according to the situation and business environment (Björk and Magnusson, 2009). Entrepreneurs not only innovate within companies by developing new business models, but they also promote new types of innovation concurrently, introducing changes at the product, process, marketing, and organizational levels (Bruni et al., 2019). This means that entrepreneurs connect individual innovation with organizational innovation, or entrepreneurial leaders simultaneously carry out individual innovation and organizational innovation. Innovation comes from individual ideas filtered by one's information, thoughts, and experiences. Ideas can only be created by individuals (Björk and Magnusson, 2009). Thus, individual innovation is defined as creating new ideas based on information, knowledge, and experience applied in everyday life to create new value in economic prosperity and environmental sustainability. On the other hand, organizational innovation is conceptualized as an organization's tendency to develop better products or services and its success in bringing them to market. (Gumusluoglu and Ilsev, 2009). Innovation should not have a negative impact on the environment. Therefore, the application of COIN and innovation engineering needs to be directed at the economy and ecogreen. The relationship between individual innovation and organizational innovation in companies is as shown in Figure 1.

All innovations come from individuals, developed and implemented by companies to make their use more successful

**Figure 1:** Relationship between individual innovation, organizational innovation in the company



(Björk and Magnusson, 2009). Some examples of innovation such as innovation about products, technology, processes, services, and others. Leaders determine the implementation of innovation which makes them a crucial factor in innovation. They determine the success or failure of innovation because they can influence all organizational functions such as culture, strategy, marketing, resources, and employee behavior (Baron and Tang, 2011; Gumusluoglu and Ilsev, 2009).

Innovation creates change. Without change, there is no innovation. Innovation must be oriented to consumer needs. Companies with more flexible organizations are more likely to innovate quickly. Organizational flexibility is determined by the behavior of entrepreneurial leaders. Entrepreneurial leaders will dare to take risks, innovate to minimize risk, and apply new ideas as a breakthrough to stay alive and develop.

Most literature discusses the importance of innovation for large and medium-sized companies, but only a few discuss innovation in small businesses. The question is, do small businesses need innovation? What kind of innovation do they need? To answer those questions, it is necessary to explain what is meant by small business innovation. Small entrepreneurs are essentially entrepreneurs, which number is more significant than large and medium entrepreneurs. In almost all countries globally, including Indonesia, small businesses make a considerable contribution (Ibarra et al., 2020; Maksum et al., 2020), such as the contribution to a country's GDP and employment. The ability of small businesses to survive in challenging economic conditions and adapt quickly proves that small businesses have a particular innovation. Innovation is what makes them able to stay in difficult times. A characteristic of small businesses is that the owner doubles as a leader, or at least the leader comes from a close family (Chaniago, 2020). The family has strict control over business activities (Patel et al., 2012). All decisions come from the owner because the owner is also the leader. Therefore, all decisions regarding strategy, management, culture, and innovation are up to the owners. In small businesses, which innovations are accepted and used is determined by who the leader is.

Innovations that come from subordinates (internal) or from outside the organization but are contrary to their ideas, experiences, and feelings tend to be rejected by small business leaders (Gherardini et al., 2017). This refusal is more individual and subjective. The same is also explained by (Arbussa et al., 2017), who has found in his research that SME leaders tend to reject innovations that are not in line with their thoughts out of fear of losing out on financial potential. The capacity of a leader will determine the success or failure of both radical and incremental innovations. Businesses need to innovate according to consumer needs (Bhatnagar and Gopalaswamy, 2017; Sundström et al., 2020) or COIN (Customer orientation innovation need). In small businesses innovation, a combination of individual innovation with corporate innovation is used. COIN can be done by individuals, leaders, or by employees. COIN is aligned with the leader's thoughts and later being developed and implemented into corporate innovation. Company innovation is divided into managerial, technological, product, and process innovations (Krause, 2007). Other experts complement it with service or management innovation, such as new management

practices, human talent development, individual performance, and organizational performance with a knowledge base (Kim and Chung, 2017; Volberda et al., 2013). The implementation of innovation can be chosen radically or incrementally. Whether radical or incremental, the innovation carried out is determined mainly by the knowledge, information, and experience of the leader, who is also the owner of the business.

## 2.2. Environment

Many researchers have recognized small businesses as making an enormous contribution to the economy and employment in a country (Maksum et al., 2020; Zahra, 2003). In addition to having various problems, small businesses also have advantages, such as being flexible in dealing with situations and community needs. They easily change according to the needs of their consumers. This flexibility and speed of change are one of the advantages of small businesses. But on the one hand, small businesses are also contributors to the destruction of nature (Nugroho et al., 2017). This means that progress in small businesses is followed by a decrease in environmental quality. A decline in environmental quality can be seen in pollution, often in urban areas. The area becomes slum, not environmentally friendly, and unhealthy as a place to live.

The decline in environmental quality includes land, sea, air, and rivers, such as soil quality, water quality, air quality, river pollution, pollution of the living environment in the form of business activity waste (plastic, wrapping paper, used bottles) and others (Bakar et al., 2017; Nugroho et al., 2017; OECD, 1999). Observing sustainable development, the environment must be protected so that the next generation will inherit friendly energy and nature (OECD, 2019; Priyanta, 2010). Sustainable development requires the use of energy that is not excessive, ensures that nature is not damaged, and the availability of quality energy for future generations. Environmental problems must be watched out for by all parties, including small business economic actors.

The Indonesian constitution states that the environment is "a unitary space with all objects, forces, conditions, and living things, including humans and their behavior that affect nature itself, the continuity of life, and the welfare of humans and other living things" (PP22, 2021).

The constitution includes the environment such as land, sea, air, and every living thing that lives in it. In the Indonesian constitution, it is also explained that "everyone has the right to a good and healthy environment and in the preamble, to the constitution it is stated that the state has responsibility for environmental protection and management" (UUD45, 1945). The state is obliged to maintain a healthy environment for its citizens. The state issues various forms of regulations and policies to protect the environment. The environment is defined as a place for living things to breed, including land, sea, air, water, flora and fauna, energy, and all its supporters. Living things consist of humans, animals, and plants, as well as the necessary support. An environment is a place of life that must be preserved. Several researchers have warned (Bakar et al., 2017; Díaz-García et al., 2015) companies to make better use of natural resources and reduce environmental damage. The use of renewable energy will save the earth from destruction (Razzaq

et al., 2021). Therefore, all parties can be involved in protecting the environment. Various innovations can be directed to preserve the environment. Small business as an economic driver, especially in developing countries, theoretically can be directed to create and produce eco-green and run its business into a green business. This means that the correct party is needed to engineer small businesses and their consumers to protect the environment. The party is a policy-making institution, namely the government. As a regulator in society, the government is very likely to play a major role in protecting the environment through various regulations and laws that it makes.

### 2.3. The Government's Role as Regulator

In almost all countries, the government has a role in regulating society, including the economy and the environment in which humans live. Environmental damage is identical to the destruction of local people's lives (Abbas, 2012; Biswas and Roy, 2015; Jegasothy, 1999). The role of the government is vital in regulating and controlling community activities to protect the environment. Regulations encourage innovation, or environmental regulations stimulate innovation; environmental regulations will protect the environment and increase the competitiveness of enterprises (Díaz-García et al., 2015). Therefore, it allows small businesses to produce green products and run their business in a green business. Companies that regulate green businesses for the long term will benefit themselves (Chen et al., 2006; Husnaini and Tjahjadi, 2021; Iqbal, 2019; Papagiannakis et al., 2019).

The government is defined as a board organization/legal supreme body to regulate social, economic, political life to create prosperity for the people of a country (Papagiannakis et al., 2019). The central and regional governments serve as regulators for the welfare of their people. In the Indonesian constitution, the government is divided into the central government and local governments. Local governments serve as regulators and promote the welfare of citizens in their respective areas (UU\_No\_23, 2014). The Indonesian government (central government and local government) not only regulates people's lives but also regulates economic and environmental actors because only a well-maintained environment can provide welfare for the community.

Protecting the environment involves making responsible decisions to reduce the negative impact of business on the environment (Bakar et al., 2017). Economic development and welfare of a society can only be achieved if there is a balance between optimization of wealth and protection of the environment (Appiah et al., 2018). The responsible parties are not only from the government but also from entrepreneurs and consumers. The willingness of consumers to change their consumption behavior to be greener will determine the achievement of eco-green. However, the actors who can manipulate small businesses and consumers are more dominant in the government, because the government is the highest authority in a country. Government engineering is very effective by issuing regulations and policies to regulate consumers and producers (small businesses) and implement them strictly.

The 2019 OECD report on Indonesia said, "Improving environmental law enforcement is a priority for the Indonesian

government. However, the low institutional capacity of local governments hinders efforts to ensure compliance with regulations" (OECD, 2019). Law enforcement on the environment at the regional level is still weak. The causes are many factors such as lack of understanding about the environment, mentality, conflict of interest with decision-makers, corruption, collusion, nepotism, and reluctance to impose sanctions if entrepreneurs have a relationship with the central government.

## 3. METHODS

This research was conducted in Indonesia in 2020 when the Covid-19 pandemic was underway. The object of study is all small businesses located in the city of Bandung, Indonesia. Data from the Bandung City BPS in 2020 shows 1516 small business units and a total workforce of 13,960 people (BPS\_Kota\_Bandung, 2021). While the previous number of small businesses (2019) was 3723, due to the Covid-19 pandemic, around 60% of them collapsed. The city of Bandung is one of the big cities in Indonesia. This city is a trading city and a tourist city. Around the city of Bandung, there are many large, medium, and small businesses.

The research subjects are entrepreneurs or small business leaders. Each small business was given a questionnaire. The questionnaire was filled out by the head, owner, or manager of the small business via Google form. Persuasive communications have been carried out several times to make the leaders of small businesses willing to fill out the questionnaire. The total sample is 142 business units, as shown in Table 1.

Sampling was carried out by purposive sampling with several considerations. Those considerations include the criteria for small businesses according to the Indonesian government constitution (having a maximum of 20 employees, maximum assets of IDR 500 million excluding land and buildings), the business has been running for more than 3 years and operating in the city of Bandung. The data obtained from the respondents were analyzed using descriptive and regression analysis.

The research used a descriptive quantitative method and continued with the study of Indonesian government regulatory documents. Document studies are conducted to find out which policies and regulations are predicted to be able to engineer small businesses and change consumer behavior to go green. The measurement instruments for small business innovation and the environment and the study framework are presented in Table 2 and Figure 2.

**Table 1: Distribution of sample sources from small business**

No.	Types of small business	Number of units*	Amount sample (Unit)
1.	Food	425	40
2.	Clothing	814	75
3.	Chemical	101	9
4.	Metal	165	15
5.	Craft	11	2
Total		1.516	142

\*Source: BPS\_Kota\_Bandung (2021)

## 4. RESULTS AND DISCUSSION

### 4.1. Results

Before the data from the respondents is used, the reliability test is carried out first. The results show that all data have Cronbach's  $\alpha > 0.7$ ; This means that the data obtained from the respondents are suitable to be used to answer the objectives of this study (Gursida and Harmon, 2017; Hair et al., 2010). The results of the regression analysis of data from respondents as shown in Table 3.

Table 3 shows that the individual innovation variable correlates with the environment 0.793 significant at 0. This correlation is included in the strong criteria. Likewise, the organizational innovation variable correlated with the environment variable

**Table 2: Source of Instrumentation**

Construct	Source
Individual innovation	
Initiation	Bhatnagar and Gopalswamy (2017); Dub et al. (2014)
Adoption	Bhatnagar and Gopalswamy (2017) ; Dub et al. (2014)
Experience	Gherardini et al. (2017)
Utilization of individual ideas	Berry et al. (2006); Bjo`rk and Magnusson (2009)
Organization innovation	
Idea development	Bjo`rk and Magnusson (2009)
New activity	Bhatnagar and Gopalswamy (2017); Dub et al. (2014)
Product innovation	Klein et al. (2001); (Vincent et al., 2004); (Bruni et al., 2019); Bhatnagar and Gopalswamy (2017); Volberda et al. (2013); Kim and Chung (2017); Krause (2007)
Process innovation	Bhatnagar and Gopalswamy (2017); Dub et al. (2014); Krause (2007)
Market innovation	Bhatnagar and Gopalswamy (2017); Dub et al. (2014)
Organization innovation and service	Bhatnagar and Gopalswamy (2017); Dub et al. (2014); Berry et al. (2006); Lusch et al., (2007); (Krause, 2007); (Gumusluoglu and Ilsev, 2009)
Environment	
Pollution of soil, water, air	Abbas (2012); OECD (1999)
Residential pollution	Nugroho et al. (2017) ; Bakar et al. (2017)
Energy use	Bakar et al. (2017); Díaz-García et al. (2015); Razzaq et al. (2021)

Source: Compilation of literature, 2021.

0.526, which is significant at 0. The correlation is included in the moderate criteria. Other results found that the correlation between individual innovation and organizational innovation of 0.413 was significant at 0.

This study also found the partial effect of individual innovation variable on the environment by 55.03%, and organizational innovation affects the environment by 12.57%. The total simultaneous effect of the two innovation variables on the environment is 67.7% and is significant at 0. This means that this study finds that individual innovation and organizational innovation are jointly proven to affect the environment, and partially they are also shown to affect the environment variable.

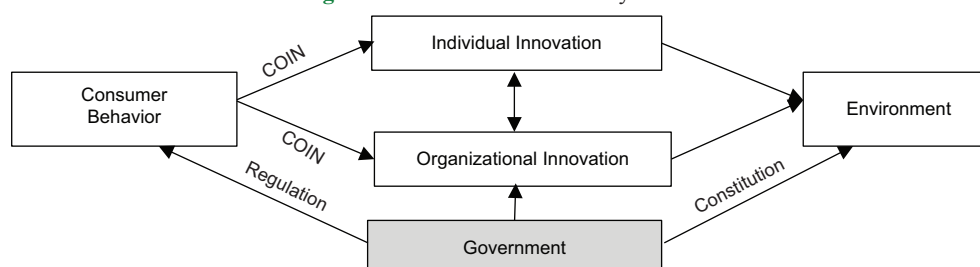
After knowing the effect of individual and organizational innovation on the environment, the next step is to confirm various documents predicted to manipulate consumer and small business behavior. The results of the search for the document study are presented in the discussion.

### 4.2. DISCUSSION

Entrepreneurs will always run COIN (customer-oriented innovation need) to satisfy consumer needs. The more COIN matching is done, the more consumers come. This also applies to small businesses. The success of a business is determined by the careful use of COIN. The source of COIN comes from consumer behavior. Consumer behavior that is green consumerism will be followed by small businesses. Entrepreneurs are only operators who meet consumer tastes because the nature of entrepreneurs constantly adjusts to the wishes of consumers (Abbas, 2012; Jegasothy, 1999). Existing innovations, both individual and organizational innovations, will be directed according to COIN. Entrepreneurs are keen to follow consumer tastes. Likewise, small businesses will adjust their pace by running COIN, including innovating. However, individual innovations for more excellent benefits should be implemented by companies (Bjo`rk and Magnusson, 2009).

The results of this study have proven that individual innovation and innovation of small business organizations are proven to significantly affect the environment, with the level of influence included in the strong criteria. This means that the innovations that exist in employees can contribute to eco-green. Employee innovation in the form of ideas, initiatives, experiences can be directed to eco-green. All the thinking of employees in small businesses makes it possible to generate corporate innovations that care for the environment. Examples of company activities

**Figure 2: Framework of the study**



**Table 3: Result of influence and correlation between variables**

Variable	Environment		
	Correlations	Coefficient	Partial influence
Individual innovation	0.793; signi. 0	0.694; signi 0	0.550342
Organizational innovation	0.526; signi 0	0.239; signi 0	0.125714
Total influence			0.677
Significant level			0

Source: Research results, 2021

to protect the environment are having a waste treatment site, temporary waste storage, etc. Research data shows that none of the small businesses have waste treatment. They directly dispose of their waste into the ground/nature. Small businesses are one party that contributes to damaging the environment (Nugroho et al., 2017). Those who play a role in directing individual innovation to focus on creating eco-green are largely determined by the leader or small business owner. The leader determines the success or failure of innovation (Baron and Tang, 2011; Gumusluoglu and Ilsev, 2009; Huang et al., 2014). Entrepreneurs have a strong relationship with innovation (Bruni et al., 2019).

This study found that organizational innovation also significantly affects the environment, with criteria including low. This means that the innovations produced by the company also play a role in protecting the environment. The role played by the company will be more effective if it always refers to COIN. COIN causes company innovation to be tailored to consumer needs (Bhatnagar and Gopalaswamy, 2017; Sundström et al., 2020). If consumers need green products, the company will produce them, and vice versa. Consumer negligence on green products will cause companies to ignore the green economy, such as neglecting: green products, green management, green processes, green packaging. Consumer behavior that is indifferent to the environment causes companies to be less concerned about the environment. The long-term result is environmental degradation. So that such things do not happen, it is necessary not only to the engineering of entrepreneurs but also the engineering of consumer behavior. Engineering consumer behavior and small businesses are important. Encouraging consumers to be more aware of eco-green products is an effective solution. If the behavior of green consumerism has grown, it is easy for small business behavior and innovation to be engineered to produce and do eco-green business.

All parties need to maintain the environment. Those parties include the government and the community, such as business people, MSMEs, academics, etc. The government must make people aware through various policies, socialization, training, and punishment if required. A well-maintained environment will ensure future economic growth, lest economic growth sacrifices the environment. As the highest organization in a country, the government can play a greater role in maintaining environmental quality. A well-maintained environment means continuity of life on earth (Abbas, 2012; Biswas and Roy, 2015; Jegasothy, 1999). Environmental quality is maintained, such as the quality of water, soil, air, rivers, and places (Bakar et al., 2017; OECD, 1999). So

far, the government only regulates from the producer side, and there are no rules that regulate consumers. Consumer engineering is defined as an activity that can change consumer behavior and tastes for the better, which can be carried out by the government, trusted organizations, etc. Media to engineer effective consumer behavior by making various regulations and policies from the government. Government regulations encourage environmental innovation (Díaz-García et al., 2015). Government intervention in policy-making is essential (Setyari and Kusuma, 2021). From the study of documents in the field, it was found that the government has issued many regulations. Unfortunately, these regulations are only aimed at producers and do not yet exist for consumers. Producer engineering and producer regulation on the environment is primarily the initiatives of the central government. At the local government level, it is still weak. Engineering on the consumer side of the environment is limited to socialization and appeals, not touching the real thing. Suppose consumers are regulated and can be subjected to constitutional threats. In that case, entrepreneurs are believed to change their behavior to become eco-green and follow the wishes of consumers or entrepreneurs to run COIN. Small business engineering as a producer to be eco-green is more effective when done through consumers. Thus, consumer behavior is forcing small businesses to be eco-green and turn their business into green business. The government's role is very important in controlling consumer behavior and regulating small businesses to be eco-green.

## 5. CONCLUSION

This study found that individual innovation is correlated with organizational innovation, and each innovation impacts the environment. Individual innovation and innovation of small business organizations can play a role in shaping eco-green. For small business innovation to play a role, engineering is needed on consumer behavior and small business activities. A study of government documents on the environment found that most regulations aimed only at entrepreneurs, with unsatisfactory results. Therefore, engineering is more important to change consumer behavior so that it is eco-green. This engineering also issues various policies and regulations that regulate consumer consumption needs and behavior. Changes in consumer behavior will be more effective in changing the company's activities into eco-green and green businesses.

## REFERENCES

- Abbas, M.Y. (2012), Children, youth and environments (CYE): Lessons for developing countries? *Procedia Social and Behavioral Sciences*, 38, 15-22.
- Appiah, M.K., Possumah, B.T., Ahmat, N., Sanusi, N.A. (2018), Policy environment and small and medium enterprises investment in the Ghanaian oil and gas industry. *International Journal of Energy Economics and Policy*, 8(4), 244-253.
- Arbussa, A., Bikfalvi, A., Marquès, P. (2017), Strategic agility-driven business model renewal: The case of an SME. *Management Decision*, 55(2), 271-293.
- Ariani, A., Utomo, M.N. (2017), Kajian strategi pengembangan usaha mikro kecil dan Menengah (UMKM di Kota Tarakan). *Jurnal Organisasi dan Manajemen*, 13(2), 99-118.

- Bakar, N.A.A., Abdullah, H., Ibrahim, F.W., Jali, M.R.M. (2017), Green economy: Evaluation of Malaysian company environmental sustainability. *International Journal of Energy Economics and Policy*, 7(2), 139-143.
- Baron, R.A., Tang, J. (2011), The role of entrepreneurs in firm-level innovation: Joint effects of positive affect, creativity, and environmental dynamism. *Journal of Business Venturing*, 26, 49-60.
- Berry, L.L., Shankar, V., Parish, J.T., Cadwallader, S., Dotzel, T. (2006), Creating new markets through service innovation. *MIT Sloan Management Review*, 47(2), 56-63.
- Bhatnagar, N., Gopalaswamy, A.K. (2017), The role of a firm's innovation competence on customer adoption of service innovation. *Management Research Review*, 40(4), 378-409.
- Biswas, A., Roy, M. (2015), Leveraging factors for sustained green consumption behavior based on consumption value perceptions: Testing the structural model. *Journal of Cleaner Production*, 95, 332-340.
- Björk, J., Magnusson, M. (2009), Where do good innovation ideas come from? Exploring the influence of network connectivity on innovation idea quality. *Journal of Product Innovation Management*, 26, 662-670.
- BPS Kota Bandung. (2021), Kota Bandung Dalam Angka 2021/Bandung Municipality in Figures 2021. Kota Bandung: BPS Kota Bandung. Available from: <https://www.bandungkota.bps.go.id/publication/2021/02/26/2fb944aeb2c1d3fe5978a741/kota-bandung-dalam-angka-2021.html>.
- Bruni, E., Bonesso, S., Gerli, F. (2019), Coping with different types of innovation: What do metaphors reveal about how entrepreneurs describe the innovation process? *Creativity and Innovation Management*, 28(2), 1-16.
- Chaniago, H. (2020), Analisis kualitas pelayanan, kualitas produk, dan harga pada loyalitas Konsumen nano store. *International Journal Administration, Business and Organization*, 1(2), 59-69.
- Chen, Y.S., Lai, S.B., Wen, C.T. (2006), The influence of green innovation performance on corporate advantage in Taiwan. *Journal of Business Ethics*, 67, 331-339.
- Cuntz, A., Foray, D., Mostovova, E. (2020), On the economics of social innovation-a conceptual framework and its policy implications. *Innovation*, 22(4), 1735394.
- Díaz-García, C., González-Moreno, Á., Sáez-Martínez, F.J. (2015), Eco-innovation: Insights from a literature review. *Innovation: Management, Policy and Practice*, 17(1), 6-23.
- Dub, L., Jha, S., Faber, A., Struben, J., London, T., Mohapatra, A., McDermott, J. (2014), Convergent innovation for sustainable economic growth and affordable universal health care: Innovating the way we innovate. *Annals of the New York Academy of Sciences*, 1331, 119-141.
- Gadrey, J., Gallouj, F., Weinstein, O. (1995), New modes of innovation: How services benefit industry. *International Journal of Service Industry Management*, 6(3), 4-16.
- Gherardini, F., Renzi, C., Leali, F. (2017), A systematic user-centred framework for engineering product design in small-and medium-sized enterprises (SMEs). *The International Journal of Advanced Manufacturing Technology*, 91, 1723-1746.
- Gumusluoglu, L.A., Ilsev, A. (2009), Transformational leadership and organizational innovation: The roles of internal and external support for innovation. *Journal of Product Innovation Management*, 26, 264-277.
- Gursida, H., Harmon, M.S. (2017), Metode Penelitian Bisnis dan Keuangan. Konsep dan Implementasinya. Bogor: Paspri.
- Hair, J.F.J., Black, W.C., Babin, B.J., Anderson, R.E. (2010), *Multivariate Data Analysis*. 7<sup>th</sup> ed. Harlow: England: Pearson Education Limited.
- Huang, S., Ding, D., Chen, Z. (2014), Entrepreneurial leadership and performance in Chinese new ventures: A moderated mediation model of exploratory innovation, exploitative innovation and environmental dynamism. *Creativity and Innovation Management*, 23(4), 453-471.
- Husnaini, W., Tjahjadi, B. (2021), Quality management, green innovation and firm value: Evidence from Indonesia. *International Journal of Energy Economics and Policy*, 11(1), 255-262.
- Ibarra, D., Bigdeli, A.Z., Igartua, J.I., Ganzarain, J. (2020), Business model innovation in established SMEs: A configurational approach. *Journal of Open Innovation: Technology, Market and Complexity*, 6(76), 1-22.
- Iqbal, T. (2019), Impact of Quality Management on Green Innovation: A Case of Pakistani Manufacturing Companies. Pakistan: Paper presented at the Proceedings of the 1<sup>st</sup> International Conference on Smart Innovation, Ergonomics and Applied Human Factors (SEAHF).
- Jegasothy, K. (1999), Population and rural-urban environmental interactions in developing countries. *International Journal of Social Economics*, 26(7-9), 1027-1055.
- Kim, J.S., Chung, G.H. (2017), Implementing innovations within organizations: A systematic review and research agenda. *Innovation*, 19(3), 1-28.
- Klein, K.J., Conn, A.B., Sorra, J.S. (2001), Implementing computerized technology: An organizational analysis. *Journal of Applied Psychology*, 86, 811-824.
- Krause, G.E. (2007), Managing design-designing management: Two sides of the same idea. *Design Management Review*, 2007, 82-90.
- Lusch, R.F., Vargo, S.L., O'Brien, M. (2007), Competing through service: Insights from service-dominant logic. *Journal of Retailing*, 83(1), 5-18.
- Maksum, I.R., Rahayu, A.Y., Kusumawardhani, D. (2020), A social enterprise approach to empowering micro, small and medium enterprises (SMEs) in Indonesia. *Journal of Open Innovation: Technology, Market and Complexity*, 6(50), 1-17.
- Nugroho, L., Utami, W., Akbar, T., Arafah, W. (2017), The challenges of microfinance institutions in empowering micro and small entrepreneur to implement green activity. *International Journal of Energy Economics and Policy*, 7(3), 66-73.
- OECD. (1999), *The Environmental Goods and Services Industry*. Paris, France: OECD; Available from: [https://www.unstats.un.org/unsd/envaccounting/ceea/archive/EPEA/EnvIndustry\\_Manual\\_for\\_data\\_collection.PDF](https://www.unstats.un.org/unsd/envaccounting/ceea/archive/EPEA/EnvIndustry_Manual_for_data_collection.PDF).
- OECD. (2019), *Tinjauan Kebijakan Pertumbuhan Hijau Indonesia; 2019*. Available from: <https://www.issuu.com/oecd.publishing/docs/ggpr-indonesia-highlights-2019-baha>.
- Papagiannakis, G., Voudouris, I., Lioukas, S., Kassinis, G. (2019), Environmental management systems and environmental product innovation: The role of stakeholder engagement. *Business Strategy and the Environment*, 28(6), 939-950.
- Patel, V.K., Pieper, T.M., Hair, J.F. (2012), The global family business: Challenges and drivers for cross-border growth. *Business Horizons*, 55(3), 231-239.
- Peraturan Pemerintah RI No. 22 Tahun. (2021), *Tentang Penyelenggaraan Perlindungan dan Pengelolaan Lingkungan Hidup*. Indonesia: Peraturan Pemerintah RI.
- Priyanta, M. (2010), Penerapan konsep konstitusi hijau (green constitution) di Indonesia Sebagai Tanggung jawab negara dalam perlindungan dan pengelolaan lingkungan hidup. *Jurnal Konstitusi*, 7(4), 113-130.
- Razzaq, N., Muhammad, F., Karim, R., Tariq, M., Muhammad, K. (2021), The nexus between energy, environment and growth: Evidence from Latin-American countries. *International Journal of Energy Economics and Policy*, 11(1), 82-87.
- Rogers, M. (1998), *The Definition and Measurement of Innovation*. Melbourne: Paper Presented at the Applied Economic and Social Research.
- Setyari, N.P.W., Kusuma, W.G.A. (2021), Economics and environmental development: Testing the environmental Kuznets Curve hypothesis. *International Journal of Energy Economics and Policy*, 11(4), 51-58.

- Stock, J.H., Watson, M.W. (2002), Forecasting using principal components from a large number of predictors. *Journal of the American Statistical Association*, 97(460), 1167-1179.
- Sundbo, J. (1997), Management of innovation in services. *Service Industries Journal*, 17(3), 432-455.
- Sundström, A., Hyder, A.S., Chowdhury, E.H. (2020), Market-oriented business model for SMEs' disruptive innovations internationalization. *Marketing Intelligence and Planning*, 39(5), 670-686.
- UU\_No\_20. (2008), Undang-Undang No. 20 Tahun 2008 Tentang Usaha Mikro, Kecil dan Menengah. Jakarta: Pemerintah Indonesia. Available from: <https://www.ojk.go.id/sustainable-finance/id/peraturan/undang-undang/Documents/Undang-Undang%20Nomor%2020%20Tahun%202008%20Tentang%20Usaha%20Mikro,%20Kecil,%20dan%20Menengah.pdf>.
- UU\_No\_23. (2014), Undang-Undang Republik Indonesia No. 23 Tahun 2014 Tentang Pemerintah Daerah. Jakarta, Indonesia: Menkumham RI. Available from: <https://www.hukumonline.com/pusatdata/detail/lt543df13291bf4/nprt/lt511c7ca43835e/undang-undang-nomor-23-tahun-2014>.
- UUD45. (1945), Undang-Undang Dasar 1945. Jakarta: Menkumham RI. Available from: <https://www.hukumonline.com/pusatdata/detail/lt4ca2eb6dd2834/undang-undang-dasar-1945?r=2> and p=1 and q=Undang%20Undang%20Dasar%2019 and rs=1847 and re=2021.
- Vincent, L.H., Bharadwaj, S.G., Challagalla, G.N. (2004), Does Innovation Mediate Firm Performance? A Meta-analysis of Determinants and Consequences of Organizational Innovation. Paper Presented at the Working Paper. Available from: <https://www.smartech.gatech.edu/handle/1853/10731>.
- Volberda, H.W., Bosch, F.A., Heij, C.V. (2013), Management innovation: Management as fertile ground for innovation. *European Management Review*, 10, 1-15.
- Worthington, I., Patton, D. (2005), Strategic intent in the management of the green environment with SMEs: The case of the screen-printing sector. *Long Range Planning*, 38, 197-212.
- Zahra, S.A. (2003), International expansion of U.S. Manufacturing family businesses: The effect of ownership and involvement. *Journal of Business Venturing*, 18(4), 495-512.