Pro-environmental behavior for small medium enterprise: a review

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Abstract. The problem that is often faced by environment of Small and Medium Enterprises is the lack of, and also the growth of small and medium enterprises that are increasing every year makes handling waste uncontrollable, the impartiality of small and medium enterprises in the environment causes waste pollution and energy use out of control. Some literature, it is explained that the application of pro-environment behavior can help to reduce the impact of environmental pollution, and also maintain environmental sustainability. The application of pro-environment behavior becomes an alternative in maintaining environmental sustainability or call often called Sustainable development. The purpose of this study is to review journals or the results of research on applied environmental behavior within the scope of small and medium enterprises, so that they can find out the results of pro-environment implementation that applied to various literature and research. The application of pro-environment behavior is strongly recommended so that it becomes a reference program for the community and also becomes a reference material for making regulations for BLH (environmental agency) to improve environmental preservation, especially in Indonesia, especially in the city of Medan, North Sumatra Province and also as a problem solving for growth uncontrolled waste.

1. Introduction
The development of the small and medium business industry has indirectly affected environment ecology, ranging from arbitrary waste disposal, spend energy waste and others. It can cause a significant impact on the environment, for that application of pro-environment behavior must be applied in small and medium business activities. Pro-environment behavior in the form of environmental awareness action to minimize the negative impact of community / individual actions on nature, which refers to personal actions that are directly related to environmental improvement. These environmental actions can be carried out individually, collectively, and possibly directly or indirectly in approaches to reducing hazards, and improving the environment [1]. Pro-environment behavior in the business world or small and medium-sized businesses positive influence on improving environmental performances and encouraging positive reactions to the company's image and competitiveness. Environmental improvement is a strategic factor that is key to the performance of a business's competitiveness, and relevance that increases social care for the environment [2].

Environmental issues have become a concern in Indonesia, several studies have shown that the level of environmentally friendly behavior by SMEs, shows a low percentage, towards environmentally friendly behavior, of 141 SMEs in the industrial sector in the Greater Jakarta, West Java, Central Java, East Java and North Sumatra. It can be seen from Table 1 that, overall only 8.1% of environmentally friendly activities are carried out by SMEs in the industrial sector. Related to this, SMEs in Strata 1 group with environmentally friendly activities that have reached 45.5%. SMEs in Strata 2 only implement 20.9%, while SMEs in Strata 3 which constitute the majority group are still very few in carrying out environmentally friendly activities which are 3.2%. Based on these results, SMEs in the industrial sector which are the largest activity group of the community are still far from being obedient in conducting environmentally friendly businesses [3]. Environmental actions or behavior contribute to improving the image and reputation only sustainable get practices to overcome them. Empirical studies have found evidence that shows the company's commitment to it the environment positively influences its image and reputation [4].
Table 1. Percentage of environmentally friendly SMEs in the industrial sector.

| No | Environmentally friendly activities | Stratum 1 | Stratum 2 | Stratum 3 | average |
|----|-------------------------------------|-----------|-----------|-----------|---------|
| 1  | Using raw materials that have certificates / permits | 55.60%    | 2.50%     | 14.00%    | 17.90%  |
| 2  | Using renewable raw materials and auxiliary materials | 55.60%    | 100.00%   | 0 %       | 15.70%  |
| 3  | Make efficiency in the use of raw materials and support | 100.00%   | 0 %       | 5.30%     | 10.70%  |
| 4  | Carry out the Reuse process in the production process activities | 55.60%    | 11.80%    | 4.40%     | 8.60%   |
| 5  | Make efficient use of energy | 77.80%    | 5.90%     | 2.60%     | 7.90%   |
| 6  | Efficient water use | 55.60%    | 17.60%    | 1.80%     | 7.10%   |
| 7  | Carry out the Recycle process in the production process activities | 33.30%    | 35.30%    | 0.90%     | 7.10%   |
| 8  | Using renewable energy | 22.20%    | 29.40%    | 0.00%     | 5.00%   |
| 9  | Do not / have not done friendly production process activities environment | 0 %       | 0 %       | 5.30%     | 4.30%   |
| 10 | Carry out the reduce process in the production process activities | 33.30%    | 5.90%     | 0 %       | 2.90%   |
| 11 | Using raw materials and supporting materials that have MSDS | 11.10%    | 0 %       | 0.90%     | 1.40%   |
|    | **Average** | **45.50%** | **20.90%** | **3.20%** | **8.10%** |

2. Literature review

Causal study on SME Towel named Ikeuchi Towel in Japan, with the application of making towels organically, explained that popular environmental awareness also triggers increased demand for organically produced goods. As a market entry strategy, Ikeuchi Towel began participating in household goods trade shows in Tokyo and the United States. In addition to quality touch, environmental gloss, Ikeuchi Towel also emphasizes adding value in marketing to American consumers. Within given 'defining the originality of the company', Mr. Ikeuchi is consistently focused on an environmental approach, review all manufacturing processes and soaking towel production with a sense of environmental awareness. For high-quality, soft Ikeuchi towels with eco-friendly. A friendly manufacturing system.' As a result, the company's products become greatly appreciated at the California Gift Show in Los Angeles in 2000, obtaining a reputation as a 'soft miracle' towel [5]. PEB which consists of "all types of voluntary or specified activities carried out by individuals aimed at protecting the natural environment or improving organizational practices in the SME field." Therefore, the premise for PEB revolves around voluntary, involvement, and interests at the micro-level, macrolevel, and outside the workplace. In the recent nomenclature, Environmental behavior and PEB improve the various actions that are needed on the Environment. Some perspective to has been advocated and investigated by green behavior researchers, to regulate Behavior that is responsible for the Environment and Sustainability [6].

The five variables (three direct and one indirect) indicate that nothing is independent of each other, but interacts in a complicated time manner. As explained earlier, the normative process impacts how behavioral intentions are formed when making decisions in behavior. They also influence their high temporal stability habits compared to the average level of attitude and perceived behavioral control.
Conditions in the long run that are helped by the habit of behaving protectively give stimulus to the behavior and will make the behavior give feedback on changes or stabilization of personal norms and habits [7].

Pro-environment involvement in SMEs. It shows for advising SMEs on environmental issues and climate change, it may be better to concentrate less on business cases and cost savings but pay more attention to other motivations that make managers or small business owners involved in environmental issues, especially arguments that are driven by environmental values. This is an area where peer support among small business owners can be useful because managers or small business owners state that they trust the arguments put forward by other business partners, and those put forward by advocacy groups or advisory organizations. Messages that are parallel to reliable sources (from an SME perspective) will also be more likely to be heard [8].

The demands made by the client (product market), employees (job market) and shareholders regarding the environmental behavior of the SMEs studied, highlighted the influence of employees and consumers on social responsibility. The behavior of SMEs in Spain anchors their findings in the desire of these companies to improve their conditions to compete in the market, even suggesting that in the case of SMEs, the term Corporate Social Responsibility should be changed to Responsible Competitiveness. In the second place, we intend to study the effect the characteristics SMEs managers can have on the behavior of these companies. It seems that there are positive and significant relationships between managers, such as finding new business opportunities and improving their relationships with stakeholders, and the extent to which environmental practices are implemented [9].

Attention to nature and the environment, and turning these values into antecedent variables in human-nature relations, which can be seen as promoting advocacy and individual activism in the existing natural environment. Advocacy and activism are seen as the originators of the application of citizenship environmental behavior, and individuals connected with natural and environmental concerns are directly positively correlated with advocacy and activism. Meanwhile, voluntary behavior based on environmental citizenship has not been considered and environmental recycling activities have not been valued and desirable [10]. Environmental management systems are used to report the performance of measurement systems in SMEs, and support owner-managers in the process of continuous improvement. While the use of all energy-saving devices, some benefits, and have resulted in significant savings with natural resources and energy, they also have drawbacks (such as their focus on optimization of a single "flow", for example, energy efficiency, at one time), the European Union is funding a transnational project, "Promotion of Resource Efficiency in SMEs in Central Europe, which was designed to identify the limitations of these tools and to design new tools that comprehensively facilitate the identification and implementation of increased resource and energy efficiency [11].

Environmental behavior in farmers directly influences rural environmental conditions. Rural pollution consists mainly of NPS (Non-point Source) pollution, which occurs randomly and intermittently, characterized by complex mechanisms and processes, involving channels and an uncertain amount of disposal, containing variables spatial and temporal pollution; and creates difficulties for monitoring, simulation, and control. This characteristic is directly related to the mode of activity during agricultural production and the daily life of farmers. However, few socio-psychological tests have been carried out on the environmental behavior of farmers in the NPS (Non-point Source) pollution control research. On testing a sample of farmers in the middle lane water source area to develop a socio-psychological model to study the factors that most influence farmers involved in pro-environment behavior (PEB) designed to reduce NPS pollution (Non-point Source) [12].

The making of environmental regulations on SMEs in the Australian Government is trying to voluntary actions to increase energy savings in SMEs, through participation in voluntary programs organized by the government. Getting success in running the program and also provides several benefits including:

1) This program achieves its goal of reducing the impact of greenhouse gas emissions and handling future climate change.
2) Another additional benefit is the continued action by participating in increasing energy savings, participating in the program, and

3) The success of the participants in running a business that can participate in government programs to increase energy savings independently.

One of the programs initiated by the government is the Climate Smart Business Cluster Program, which can encourage SMEs to implement energy-saving measures, and the rarity of better sustainability. Factors (hereinafter referred to as motivators) and the obstacles that influence the energy-saving measures taken by 202 SMEs participating in the program, which includes a variety of SMEs in various sectors. The following are the energy efficiency steps in the SME [13].

![Figure 1. Energy saving measures in small and medium enterprises (SMEs) from Meath (2015).](image)

Steps in education about environmental pollution to improving pro-environment behavior in the SMEs:

1) First, awareness must be made about the potential damage caused to industrial waste and the environmental and public health that is impacting

2) Large companies must educate small businesses / SMEs and their supply chain partners that sustainable waste management practices such as waste management, lean manufacturing, zero defect, and zero effect [14]

in the environment need to consider how SMEs can utilize the opportunities presented by green growth more strategically, and include environmental development ability, which goes beyond aspirations to cut energy bills. This is indeed so suitable for regional SMEs to continue to grow and compete, it can also successfully support the transition to the behavior of LCE (Low carbon economy) [15]. Production of environmentally friendly products and develop business. Profit through a reputation for environmental awareness is a motivation for small and medium-sized companies to adopt environmental management standards [16]. Implementation of environmental management systems in small and medium-sized companies faced with obstacles, such as:

- lack of knowledge about environmental impacts,
- the need for training, policy, consultation, business cooperation, and system integration,
- high costs at the beginning of implementation and
- moral benefits and cost reductions are paired with sustainability in the medium term [17].

Intervention with further action aimed at encouraging pro-environment behavior. The combination of interventions together with information and education campaigns on sustainable behavior seems very promising for the adoption of pro-environment behavior because these steps can trigger positive impacts to maintain the motivations for triggering a change in behavior and fosters satisfaction in results adjusted behavior patterns [18].

3. Methodology

This paper uses pro-environmental behavior methods, as a solution in environmental preservation, with a systematic review method. Green behavior can have a major impact on reducing environmental
impacts, including climate change mitigation [19]. Environmental behavior is influenced by subtle cues in the environment and motivation arises for several reasons and certainly intend to protect the environment [20]. Pro-environmental behavior is education to be able to change involvement in environmental behavior to produce environmental awareness. Environmental education claims that individuals who are not aware of the adverse effects of actions on the environment or that they can do to positively remind their behavior, to be able to engage in Pro-environment activities. The solution often seems to lie in the provisions of the dissemination of information and knowledge through learning and education, because it is concluded that if individuals are aware of the problem and how they can contribute to solving it, they will change [21]. Some research related to the application of Pro-environment behavior in SMEs can be seen in Table 2. Some research related to the application of Pro-environment Behavior in SMEs can be seen in Table 2.

Table 2. Literature review of pro-environmental behavior in small medium enterprise.

| No | Year | Author | Title |
|----|------|--------|-------|
| 1  | 2019 | Wang Y, et al [12] | Analysis of the environmental behavior of farmers for non-point source pollution control and management: An integration of the theory of planned behavior and the protection motivation theory |
| 2  | 2019 | Yu Tai-Kuei, et al[10] | An innovative environmental citizen behavior model: Recycling intention as climate change mitigation strategies |
| 3  | 2019 | Michalek, et al[18] | Habitually green: integrating the concept habit into the inside design of pro-environmental interventions at the workplace |
| 4  | 2019 | Banwo, et al[5] | Workplace pro-environmental behaviors in small and medium-sized enterprises: an employee level analysis |
| Year | Author(s)          | Title                                                                 |
|------|--------------------|----------------------------------------------------------------------|
| 2018 | Truelove, et al[19] | Perception of pro-environmental behavior                              |
|      |                    | Analysis and exploitation of resource efficiency potentials           |
| 2017 | Dobes, et al[11]   | Perception of pro-environmental behavior                              |
|      |                    | Analysis and exploitation of resource efficiency potentials           |
|      |                    | in industrial small and medium-sized enterprises                      |
|      |                    | – Experiences with the EDIT Value Tool in Central Europe              |
|      |                    | Developing an extended theory of planned behavior model to explore   |
|      |                    | circular economy readiness in manufacturing MSMEs, India             |
| 2017 | Singh, et al[14]   | Environmental capabilities of small and medium-sized enterprises:     |
|      |                    | Towards transition to a low carbon economy in the East Midlands      |
| 2017 | Baranova, et al[15]| Environmental knowledge pro-environmental behavior and energy        |
|      |                    | savings in households: An empirical study                            |
| 2016 | Photitou, et al[1] | Environmental knowledge pro-environmental behavior and energy        |
|      |                    | savings in households: An empirical study                            |
| 2015 | Jorge, et al[2]    | Competitiveness and environmental performance in Spanish small and   |
|      |                    | medium enterprises: is there a direct link                           |
|      |                    | The nature of employees' pro-environmental behaviors                 |
| 2015 | Boiral, et al[6]   | Barriers in motivation to energy adoption                             |
| 2015 | Meath, et al[13]   | Savings measures for small- and medium-sized enterprises (SMEs)       |
|      |                    | Developing an Integrated Conceptual Framework of Pro-Environmental    |
|      |                    | Behavior in the Workplace through Synthesis of the Current Literature|
|      |                    | Portsmouth University                                                |
| 2014 | Ferenhof, et al[17]| Environmental Management Systems in Small and Medium-sized Enterprises: An Analysis and Systematic Review |
4. Conclusion

The main purpose of this paper can provide an understanding of the picture in the application of pro-environment behavior in SMEs, as has happened lately, increasing growth in SMEs has increased from year to year, and indirectly affects the ecology of the surrounding environment, and sometimes there are often actions that are not environmentally friendly such as careless disposal of waste, waste of energy, high carbon emissions produced to the ignorance of the environment, causing damage to the environment collectively. Therefore, looking at the phenomenon of the journal literature in the application of pro-environmental behavior, and environmental management, shows that the application of pro-environment behavior has a positive impact on environmental preservation, not only in the environment but also on the cost efficiency is obtained from energy savings and also the reduction of carbon emissions, besides that pro-environment behavior can improve the image of SMEs in a green environment, which can improve the image of products sold, and get positive views from consumers, as did SMEs in Japan called Ikeuchi Towel, which produces Organic towels, which are of great interest to Japanese consumers, and create new business environments in the demand for other organic goods. The success of implementing several pro-environment behaviors in the SMEs, which can produce high competitiveness for the SMEs that apply them, there is another point of view that the application of pro-environment behavior must be applied thoroughly with support and regulation from the State, by helping and triggering the SMEs in order to implement pro-environment behavior, so that it becomes a stimulus for other SMEs who have not implemented pro-environment behavior to be able to apply and protect the environment, thus creating sustainable development for the environment and creating new opportunities for SMEs in the development of organic products and environmentally friendly products.

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