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Introduction

Entrepreneurship was not a new term in the business sector. It is a rather different form of managing business. If we want to understand new emergent trends in entrepreneurship, it is necessary to define “entrepreneur” clearly so that the variation of the concept is also clearly defined (Richomme-Huet and Freyman, 2011). Entrepreneurship requires innovation, creativity, opportunity, and the ability to commercialize the combination of these elements. Entrepreneurs have popularized business activities by always creating something new (innovative) and be able to use resources from their surroundings effectively (creative). Developing measurable tools to be used in exchanging goods, people started to use money instead of barter system. Therefore, entrepreneurs started to have money as their orientation of business. They focused on gaining as many profits as they could (Richomme-Huet and Freyman, 2011). Money became the main concern in business activities (selling and buying). However, as some people still suffers from poverty, health problems, hunger, and many other basic needs problems, people began to pay more attention to social issues. They combined both profit and social as their business goals which are often called social entrepreneurs. According to Alvord, Brown and Letts (2004) creative and innovative solutions for social problems can be obtained through social entrepreneurship. Besides regular and social entrepreneurship, there is other type of entrepreneurship which is ecopreneurship or eco-entrepreneurship. Studies on ecopreneurship have emerged at least since the last fifteen years (Pastakia, 1998).

The increasing number of people’s awareness in environmental issues has motivated stakeholders to be more accountable to the environment (Huang, Ding and Kao, 2009). The formulation of ISO 14000 about environmental actions for business enterprises around the world sets the standards to be more sustainable in both, business and environment. Probably due to the huge number of still unrecorded small medium enterprises in Indonesia, the country has difficulties to monitor and control their performance by strictly applying the standard.

Looking at the opportunity to earn more profits and increase their productivity, Indonesia should really consider implementing eco-friendly business (Gilani, et al., 2000). The quality of Indonesian products is comparable in the market as many are produced in Indonesia and labeled overseas. More benefits for the business and the security of its long-term competitiveness can be achieved through sustainability (Strandberg Consulting, 2009). Moreover, “currently Indonesia has low competitive advantages compared to other nations in the neighbourhood” (Gilani, et al., 2000). More entrepreneurs became more aware of the opportunity of eco-friendly products and services as the consumers demand (Kirkwood and Walton, 2010). Motivated to find the solution to the issues above, a conceptual paper needed to be conducted by focusing on the concept and barriers of ecopreneurship. This study aims to review studies on
ecopreneurship, develop research gap, and provide suggestion for future research. The research questions for this study were related to the definition of ecopreneurship and ecopreneurs, also the advantages and barriers of ecopreneurship.

2. Methodology

This study used literature review method to achieve the purpose of study. Bayraktar, et al. (2007) once said that literature review method is often used to examine and identify certain issues of the past studies. Sample of this study were papers from online journals, online news articles and books on ecopreneurship, batik, and PROPER assessment from The sample was ecopreneurship papers from many online journals and those which also can be accessed through search engine such as Google. There were more than 20 papers which consist of various sub-topics of ecopreneurship. These papers were purposively selected as the focus of this study was to explore the concept of ecopreneurship and investigate the research gap between these papers for future research. Boyer, Swink, and Rosenzweig (2005) mentioned that some researcher also use archival data to investigate their research questions.

First, the topic of ecopreneurship was searched in Google search engine, Emerald, and Proquest online journals, and relevant papers were selected. The next step was identifying elements such as definition, criteria, and barriers of ecopreneurship in each paper. Then, a summary of literature review was made into a table for an easier view. The table consisted of the name of authors, year of study conducted, title of the study, sources, objectives, methodology, scope of research, important previous research and findings. Last, a new model of ecopreneurship barriers based on geographical location is formed. This model was expected to provide guidelines for adopting ecopreneurship in different areas.

3. Ecopreneurship

3.1. Definition of ecopreneurship and ecopreneurs

Green entrepreneurship or eco-entrepreneurship (ecopreneurship) has a relatively similar meaning and can be used interchangeably. Ecopreneurship was an answer to market breakdown in dealing with negative environmental impact caused by the industries (Pastakia, 1998). Many researchers have pay attention to this issue since the last decades and Schaper (2002) also believed that the transition of sustainable development will need huge numbers of ecopreneurs.

Huang, Ding, and Kao (2009) assumed that “green innovations are new technical improvement or administrative practices for improving natural environmental performance and competitive advantage of an organization.” In addition, Global Urban Development (2010) mentioned that “ESA (Economic and Statistics Administration) in U.S. describes green products and services as those whose major role were to conserve energy or other natural resources and reduces negative environmental impact”. Furthermore, Huang, Ding, and Kao (2009) believed that “technical innovation contributes to the improvement and modification of product/service development and manufacturing technology while administrative innovation directly affects managerial activities and indirectly influences the design of organization administrative processes”. Therefore, it can be said that “all green practices ingrained in the products/services, process of production, technology and organization, whether technical or administrative
is green initiatives”. Some of the examples of green initiatives especially in telecommunication industry were namely reducing solid waste and air pollution; educate the nation about green concept; use of solar and wind-power generators for base stations; use of green electronics reduce power consumption and dissipation, careful use of air-conditioning systems for telecom equipment and offices. Innovative Carbon Offsetting Programs, network-sharing for energy efficiency and reduced costs; deploying networks, in rural off-grid locations, with alternative energy supplies; protect the water-resources from wastage, such as hazardous chemicals, sulphuric acid, diesel fuel, lead, halon, and propane, and recycling of paper, glass, metal and all plastics, etc. (Anwar, 2010). It can be concluded that there were a lot of green initiatives which can be implemented in our business. There were radical eco-innovation such as effective use of air-conditioner in our office and also incremental eco-innovation such as using innovative carbon offsetting programs.

Entrepreneurship and ecopreneurship is differentiated by: entrepreneurs which seeks for profit only, while ecopreneurship seeks for profit and environmental sustainability. Although many entrepreneurs only focused on profit, an increasing number of ecopreneurs adopted different paradigm, focused on greening the bottom line and solving the problems in the society caused by their business (Ivanko and Kivirist, 2008). Ecopreneurs are entrepreneurs who not only care for the profits of their business, but also pay more attention to the underlying green values (Kirkwood and Walton, 2010) while entrepreneurs do not have this kind of attention. “Ecopreneurs can be said as a ‘pull’ factor that persuade other firms to proactively adopt green values, in contrast, government regulation and stakeholder or lobby-group pressure can act as the ‘push’ factors” (Schaper, 2002). Pastakia (1998) categorized ecopreneurs into two categories based on their intention: social and commercial ecopreneurs. Social ecopreneurs are said to be those individuals that intended to promote eco-friendly products/ideas/technology through market and non-market routes. However, commercial ecopreneurs are those people who show their environmental concern through a conscious and consistency in adopt eco-friendly business. The summary of previous researches can be found in Table 1 below based on their scope of research.

<table>
<thead>
<tr>
<th>No.</th>
<th>Scope of Research</th>
<th>Researchers</th>
</tr>
</thead>
</table>
Marcus Wagner (2010)  
Dr Lionel Boxer (2005)  
Stefan Schaltegger and Marcus Wagner (2010)  
Dr. Anshuman Khare (2008) |
Richomme-Huet, Katia and De Freyman, Julien (2011)  
Wagner, Marcus and Schaltegger, Stefan (2010)  
Hildegard Schick, Sandra Marxen and Jürgen Freimann (2002) |
Richomme-Huet, Katia and De Freyman, Julien (2011)  
Schaper, Michael (2002)  
Yaacob, Mohd Rafi (2010) |
3.2. Advantages of ecopreneurship

Based to the justification above, eco-friendly business will definitely provide a lot of mutual benefits. These benefits were not only provides new opportunities for start up entrepreneurs but also have the potential to create innovative transition for a more sustainable business paradigm (Schaper, 2002). Dixon and Clifford (2007) found that the strategies pursued by ecopreneurs have strong influences of their position rather than the entrepreneurial school. Moreover, environmental friendly initiatives brought a lot of advantages for a company as it creates positive corporate image; providing a model for regulations; lessen tax costs; increasing the number of trading partner collaboration; and improves key performance indicators (Huang, Ding, and Kao, 2009).

Business with green values is still an attractive choice (Schick, Marxen, and Freimann, 2002). Green innovations balanced corporate responsibility on the sustainability of nature and maximizing profit by allowing their adopters to be the innovator of regulation and competition (Global Urban Development, 2010). Green entrepreneurship has boosted the competitiveness of Greek furniture enterprises (Marios, et al., 2011). There are a lot more benefits for the sustainability of the business, people, planet and also increase the company’s competitiveness.

3.3. Barriers of ecopreneurship

Schick, Marxen, and Freimann (2002) identified several barriers of sustainability in start up process:

- Lack of information
- Business advisers’ limited knowledge and willingness to share information on ecological issues
- Lack of awareness by start-up entrepreneurs on the potential market of environmentally friendly businesses
- Limited public funding available for promoting sustainable enterprises (also supported by Yaacob, 2010)

Moreover, Baxter (2004) included other barriers such as lack of incentives, lack of ability and lack of supervision and support on the implementation of EMS (Baxter,
However, two major barriers faced by ecopreneurs were also recognized, namely, the negative response of potential users in using alternative technology and products especially agricultural (Pastakia, 1998). Based on the studies above, it can be said that “the most vital barriers in implementing eco-friendly business are lack of awareness, lack of knowledge/socialization and lack of guidance and support on how to implement environmental standards” (ISO 14000). Besides, Machiba (2009) stated that understanding of eco-innovation could be improved by providing better benchmarking and indicators. Richomme-Huet and De Freyman (2011) in their study also revealed some barriers from students as their sample. The findings were that cultural gap in France hold down entrepreneurial behaviour, business schools were more focused on successful entrepreneurs which creates difficulties for students to learn, and most of them have negative view on the development of non-profit business as a start-up.

Machiba (2009) in OECD synthesis report argued that the combination between innovation and environmental policies plays an important role in promoting eco-innovation. Chapple, Kroll, and Montero (2010) theory of barriers of environmental change deemed that capital costs, information and technical knowledge, also regulatory constraints (Pastakia, 1998) were categorized as the industry barriers. In contrast with the previous theory, Gerlach (2003) believed that the barriers of sustainable entrepreneurship and innovation laid on willingness (personal preference) and capacity (lack of technical knowledge). Correspondingly to Gerlach (2003), Kirkwood and Walton (2010) also believed that potential users negative response to switch to alternative technology and products (agricultural inputs) also uncertain environmental regulations were the main barriers. Managing the companies’ reputation who adopted green values was another challenge for the ecopreneurs (Dixon and Clifford, 2007).

These barriers which are previously mentioned could still be overcome. Some of the examples are by giving benefits for those who were being supportive and serious consequences for those who refuse to put forward their resistance; on the other hand, experts can be hired to help the actor to overcome serious problems and overcome barriers of capacity (Gerlach, 2003). It is believed that an open mindset and willingness to innovate will support the improvement of competitive advantages and sustainability. As Gerlach (2003) believed that “the innovation barriers are personified by human individuals who lack either the willingness or the capacity to innovate.”

4. Discussion

Earlier authors have dealt exclusively with environmentally orientated entrepreneurship, often called ‘ecopreneurship’ (Wagner and Schaltegger, 2010). One example of the researchers was Huang, Ding and Kao (2009) who studied “Salient Stakeholder voice on the Adoption of Green Innovation in Family Business”. They found that the most successful influence regarding corporate natural environmental management usually comes from external stakeholders by internalizing the message. Additionally, other researchers have also studied ecopreneurs in small and medium enterprises (Taylor and Walley (2003); Marios, et al. (2011); Yaacob (2010)), defining the term “ecopreneurs” (Gibbs (2006); Schaper (2002); Dixon and Clifford (2007); Pastakia (2002); Kirkwood and Walton (2010)) and assessing ecopreneurship concept (Allen and Malin (2008); Kirkwood and Walton (2010); Kirchoff and Koch (2011)). Postman and Altman (1994) identified three key drivers of environmental change which
are compliance-based environmentalism, market-driven environmentalism, and value-driven environmentalism.

Besides different topics of ecopreneurship which have been studied by the previous researchers, there were also several models proposed by them. The following were ecopreneurship models.

According to Richomme-Huet and De Freyman (2011), there were two kinds of trajectories towards sustainable entrepreneurs. The first is indirect trajectories where the students chose to be regular entrepreneurs first then based on their interest, whether social or environmental, move to social entrepreneur or green entrepreneur with social or green orientation. Second is a direct trajectory where the students directly chose to be social entrepreneur and continue move to the highest level of sustainable entrepreneur. Unfortunately, in this case, the students refuse to be green entrepreneur to start-up business as they assumed that green entrepreneurship and profit making are two different philosophies, the process of recognition is more complex, and green issues have less impact in influencing desirability in becoming an entrepreneur. Beside Richomme-Huet and De Freyman (2011), Wagner and Schaltegger (2010) also tried to categorized ecopreneurship in terms of its priority of environmental and social issues as business goals and the effect of company on social groups, niche, mass-market, and market & society. Their study found that ecopreneurship has a high level of sustainability performance as a core business goal and had impact on the market and society. This means that ecopreneurship has remarkable competitive advantages which are very close to sustainable entrepreneurship.

Figure 1. Students’ Perception of Entrepreneurial Evolution (Richomme-Huet and De Freyman, 2011)
Moreover, figure 3 below explained the typology of green entrepreneur. Khare (2003) believed that there were four types of green entrepreneurs, namely innovative opportunist, ad-hoc enviropreneur, ethical maverick, and visionary champion. Innovative opportunists are those entrepreneurs with high economic orientation and high level of hard structural influence (regulators, environmental pressure groups, the market, green consumers, etc.). Ad-hoc enviropreneurs has also high economic orientation but has soft structural influences (personal networks, past experiences, family and friends, education, etc.). On the sustainability orientation there were ethical maverick which has soft structural influences and visionary champion which tend to have hard structural influences.
Regarding the key drivers of ecopreneurship, Pastakia (2002) proposed the model above as a guideline in adopting ecopreneurship. The model provided external and internal forces. External forces included pull and push factors such as the power of discerning investor and consumer, the power of enabling policies, the power of regulatory agencies, judicial activism and civil society. On the other hand, internal forces were driven by the organisation’s vision and the motivation from within the organization towards the issue of sustainability of society. They also assumed that internal forces plays superior role in the successfullness of the innovation. This model can also be used at various level regardless their industry.

As definition and categorization of ecopreneurship has been discussed, it is also important to see how green production process is done. Below is the model for closed-loop production system proposed by Machiba OECD (2009). Figure 5 showed that in a closed-loop production system, production process is continued by packaging and distribution for use and maintenance which minimized waste streams to be back to
natural environment, then move to the recovery process which in this process there are three possible way to continue the process such as re-sourcing material for production by minimizing raw material extraction, back to production by re-manufacturing, and go to use and maintenance by re-using the product. Moreover, in the production process, the next step can also be recovery as waste is processed for recovery.

**Figure 5. Closed-loop Production System (Machiba OECD, 2009)**

From this model (figure 6), it can be seen that there were three innovation targets (processes and products, organisations and marketing methods, and institutions) and four eco-innovation mechanisms (modification, re-design, alternatives, and creation), also two types of innovation (technological and non-technological). These explained the level of eco-innovation based on the indicators such as targets and mechanism).

**4.1. Research Gap**

Persuading founders of new businesses with the idea of sustainability seems to be easier than to reconstruct the existing corporate cultures (Schick, Marxen, and Freimann, 2002). “The greening of management is also a relatively new phenomenon and it is less well known, less researched and more poorly understood than entrepreneurship” (Schaper, 2002). Another study by Kirkwood and Walton in the same year (2010) mentioned that the difference between ecopreneurs and conventional entrepreneurs is still less known. “Environmental protection is not a burden but a fundamental and
necessary condition for high competitiveness” (Marios, et al., 2011). Furthermore, the role of green entrepreneurship was popular to be studied in corporations or large firms (Allen and Malin, 2008). The weakness of all the models above was that they do not mention any further for ecopreneurship adoption in different geographical areas. Based on the research gaps stated by previous studies, the future study was expected to enrich studies regarding the issues of ecopreneurship. Besides, the limited number of studies to date on ecopreneurship adoption among large corporations in Indonesia and limited number of research publications could also inspired the future study. The table presented below on barriers of ecopreneurship based on geographical location can be tested in relation to the adoption of ecopreneurship practices by large corporations.

<table>
<thead>
<tr>
<th>No.</th>
<th>Rural Areas</th>
<th>Urban Areas</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Limited technology</td>
<td>Lack of awareness of environment sustainability</td>
</tr>
<tr>
<td>2.</td>
<td>Lack of knowledge</td>
<td>Lack of consumer support</td>
</tr>
<tr>
<td>3.</td>
<td>Lack of Government support</td>
<td>Lack of incentives</td>
</tr>
<tr>
<td>4.</td>
<td>Too much financial risks</td>
<td>Lack of willingness to innovate</td>
</tr>
<tr>
<td>5.</td>
<td>Unstable business development</td>
<td>Too many competitors</td>
</tr>
</tbody>
</table>

Table 2. Ecopreneurship Barriers based on Geographical Location

Table 2 above provide five main barriers of ecopreneurship based on the enterprises’ geographical location. For large enterprises in rural areas, in order to adopt ecopreneurship, the barriers were limited technology, lack of knowledge and Government support, too much financial risks, and unstable business development. As for those which were located in urban areas, they might face barriers such as lack of awareness of environment sustainability, lack of consumer support, lack of incentives, lack of willingness to innovate, and too many competitors. These barriers might hold back large corporations who were willing to innovate.

7. Conclusion and Limitation

To conclude, previous researchers have studied ecopreneurship concept and implementation also identified barriers of ecopreneurship. Most of them studied well established enterprises and less have studied the barriers of these enterprises based on their geographical locations. Besides, the number of research on this issue is expected to keep increasing as more and more people became aware of the negative impact their business might caused to the environment.

It is recommended that supportive regulation and actions from the Government for green entrepreneurs, such as providing attractive incentives. Practitioners could help the Government to socialize the regulation and incentives so more entrepreneurs would be interested to implement the program. More studies on ecopreneurship especially in large and well-established enterprises could increase the level of knowledge of business actors. Further in-depth studies related to the motivations of Indonesian entrepreneurs in adopting green business and the role of business advisors in advising green initiatives for start-up entrepreneurs were encouraged to be studied. The limitation of this research was

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that it needs more references to provide a more comprehensive understanding of ecopreneurship concept.

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