

Patterns of Sustainopreneurship in Green Technology Ventures: The Conceptual Study

Amiruddin Ahamat^a *

^a*Universiti Teknikal Malaysia, Melaka, Malaysia.*

Abstract

Entrepreneurship, when combined with the innovation for sustainability, is otherwise called 'sustainopreneurship'. The orientation between mission and cause is the main difference between entrepreneurship and sustainopreneurship. This paper examines how innovative solutions to business sustainability challenges are given by green tech entrepreneurs through applying the effectuation theory. This research aims to develop a pattern for entrepreneurs in green technology ventures by investigating case studies in a few of green tech firms in Malaysia that is more appropriated to the green services and products that can vigorously be grown to uncover and form innovations to accustom sustainable-related issues. In this research, sustainopreneurship was considered as the best concept to be used. There has been a growing number of research and developed interest towards understanding the factors behind green growth over the last few years. From the findings of the research, a sustainopreneurship model is developed that may be used with the effectuation theory to aid the sustainable green technology environment. This study developed a model by looking at the different patterns in companies that adopt green tech in ventures and companies that do not adopt green tech. Then, the research goes further by examining case studies in any firm chosen involved in the green tech sector. The concept of sustainopreneurship for green technology ventures is assumed by the theory of effectuation, in which the aim is practice positive social change through building a better environment within a community.

© 2012 Published by Penerbit UTeM and/or peer-review under responsibility of Journal of Technology Management and Technopreneurship

Keywords: Patterns, Sustainopreneurship, Effectuation Theory, Green Technology, Venture

1. Introduction

Environmental matters are one of the topmost challenges that each country currently face. This issue becomes dreadful because of immoral human activities which cause damage to the surroundings. There are miscellaneous approaches taken by each country to face the challenges of the environment. One of the approaches is promoting green technology. In Malaysia, we are also facing similar problems. Hence, the government has been investing in many efforts to promote green technology to build a better environment. The implementation of green technology aids the aim of balancing the environment and promoting health.

* Corresponding author: *e-mail address:* amiruddin@utem.edu.my.

Among the most critical factors that shape entrepreneurial actions and the intention to generate business opportunities are to first discover and create opportunities for new ventures (Ahamat & Chong, 2015). Entrepreneurship, when combined with the innovation for sustainability, is termed as ‘sustainopreneurship’. The orientation between mission and cause is the main difference between entrepreneurship and sustainopreneurship. In order to solve sustainability-related issues, business activities are often adopted, generally to transform the business activities to become the solution rather than the problem (Abrahamsson, 2000). This involves solving sustainability-related issues through finding and generating new innovations. In line with this, it must be understood that green investing does not mean losses.

One does not balance profit with environmental issues when they adopt the green approach; in contrast, being green is about finding new solutions that both benefit the environment and are profitable. The current situation is the best time to try this approach for entrepreneurs seeking to impact the world. The interests of the investor and corporation, which for decades seemed to be at different wavelengths to social and environmental forces, are at long last incorporating to attempt solutions to rough challenges happening in the world. The importance of the different factors stimulating entrepreneurial opportunities have often been overlooked by past researcher (Huslan et al., 2016). Thus, this study seeks to examine how Malaysian green entrepreneurs face business sustainability challenges in the green technology sector.

2. Literature Review

There has been a growing number of research and developed interest towards understanding the factors behind green growth over the last few years. However, policy-makers and economists seemed to have missed a crucial and relevant problem. Ultimately, it is the ‘green entrepreneur’ who comes into the market with new green products and technologies. The green entrepreneur is the one who transforms an idea into a reality, by taking prototypes into products that can be commercially sold. However, the main concerns of the policy are typically towards finding new innovations in technology that can combat the impact of human activity on the environment and address global environmental problems such as climate change, degradation in the land and biodiversity loss. Less focus is given to the idea of commercializing technology, or to subsidize the ‘public good’ aspect of going green through green entrepreneurship.

This section highlights the discovery of sustainopreneurship patterns in green technology ventures through effectuation. Effectuation theories, the concept of sustainopreneurship and green technology, green technology entrepreneurship discovery patterns in finding innovative solutions, and the ways green technology entrepreneurs shape the results from commercialism through creative acclimatization into business opportunities, will also be discussed. Both the constraints and parameters relevant to the entrepreneurial process used to identify and commence innovations to see through sustainability-related problems from the view of green technology ventures are also examined. As a result, a theoretical framework will be developed to examine the entrepreneurial process discovery patterns within the sustainable context of green technology companies in Malaysia.

2.1. Effectuation

The creation of entrepreneurial opportunities is connected to the processes of effectuation. This was suggested by Sarasvathy (2001), as entrepreneurs have the ability to make reality one of the many options available at any time. Entrepreneurs face common misconceptions and fears. The effectuation theory therefore defined four core principles, including a fifth overarching view. The theory challenges common given understandings in traditional organisations (Read et al., 2010). The principles are as follows:

Start with your means. There is no such thing as a perfect opportunity or moment. Entrepreneurs use their current resources, network and knowledge to take actions rather than wait for a chance to happen. Set affordable loss. Rather than weighing the pros of success, entrepreneurs consider the losses and whether these losses are acceptable before pursuing the opportunity. Leverage contingencies: where the entrepreneurs can embrace surprises that arise from uncertain situations, remaining flexible rather than tethered to existing goals. Form partnerships. People and organisations that share a common goal or target may become sources of partnerships for entrepreneurs to venture into the future that they discerned through jointly developing the right products, companies and market. Strategic planning is emphasized more than competition. Create opportunities. Entrepreneurs make use of the resources within their scope of control to carve their desired future with those who share the same vision. They do not worry about finding the perfect timing, the best chance or even about predicting the future. This research thus seeks to study green technology ventures using the effectuation theory.

2.2. Sustainopreneurship and Green Tech Ventures

In entrepreneurship, the concept of sustainopreneurship, otherwise known as “Business with a Cause” (Abrahamsson, 2000), has now become dull and uninteresting. The main difference between entrepreneurship and sustainopreneurship is that the latter is generally oriented towards mission and cause. Business activities are utilized to solve problems related to sustainability – in other words, to transform it to become the solution rather than the problem.

“Sustainability” and “triple bottom line” as suggested by Elkington (1998), have together created a platform consisting of businesses, the government and the civil society. The triple bottom line consists of economic, environmental and societal sustainability as the main concept. The ability of a business to manage its capital and assets forms the first step to its survival and potential sustainability, otherwise termed as economic sustainability. The ability for companies to operate without causing damage to the ecosystem or producing an overload of dangerous emissions is termed as environmental sustainability. The requirement for companies to adjust and adhere to the needs of stakeholders, which align to the company’s own value systems, forms the societal sustainability aspect of the business.

Consumers’ consciousness of environmental consequences cumulative with the world’s ascending population, unclear economic situation and environmental battles have made-up a new global ambience that no organization can worth to disregard. This flow causes ecological sustainability to become an important issue for organizations to address. Firms which have adopted a technology orientation pursue advances in technology and innovations, and investments are made in discontinuous innovations and disruptive technologies with the assumption that entire new markets will emerge (Mthanti & Urban, 2015; Brettel, Oswald, & Flatten, 2012; Schindehutte & Morris, 2009).

Technology orientation has been linked to entrepreneurial orientation (EO) at the firm level which in turn has been linked to increased innovation and firm performance (Clausen & Korneliussen, 2012; Urban & Barreria, 2010; Wiklund & Shepherd, 2003). The concept of EO incorporates the firm-level processes, practices and decision-making styles of commence firms (Lumpkin & Dess, 1996). Firms with higher levels of EO reflect consistent behavior required to enact a corporate entrepreneurship strategy as captured through entrepreneurial processes and behavior (Anderson, Covin, & Slevin, 2009).

A new market which face high interest rates and currency volatility, along with an unstable political environment leads to high uncertainty. It is this uncertainty that entrepreneurs face as they seek to introduce new and novel prospects in research and development (R&D) (Blanco, 2007). Faced with the particularities of these uncertainties, it becomes impossible for statistical inferences to be made, since high uncertainty consists of non-existent distributions where the very instances are unclassifiable (Knight, 1942).

Advocates recommend that sustainability ventures have the shoo-in of being leading forces in a global conversion towards poverty reduction as they provide value positively and at the same time remain along the diversified dimensions of sustainability. To have a global occurrence, sustainability entrepreneurship will probably need to appear in a wide variety of surroundings, including many from both grown and developing worlds that are not presently as highly entrepreneurial; e.g., in high fixed-cost business settings.

All of these aspects add to the versatile concept of entrepreneurship. Taking together sustainability with entrepreneurship calls us to a new strand of communication. In this colloquy, we try to understand the issue where we use business organizations to build solutions and opportunities for the burdensome agenda dictated by the movement created by the sustainable development dialogue. The keyword to conduct us further is assimilation to integrate social, ecological, and economical elements with entrepreneurial behavior (Abrahamsson, 2000).

3. Methodology

In the past few years, far-reaching interest and research have been circumspect with discriminating the determinants of green growth. In many ways, small business bosses and entrepreneurs will be definite to clarifying the ecological and economic risks we confront. Starting a venture that equips auxiliary transportation solutions can maintain both the society's health and environment. This research aims to develop a pattern for entrepreneurs in green technology ventures by investigating case studies in a few of green tech firms in Malaysia that is more appropriated to the green services and products that can vigorously be grown to uncover and form innovations to accustom sustainable-related issues. Then, the researcher constructed the research questions and questionnaire based on the research objectives.

According to Ahamat and Chong (2015), an entrepreneur derives meaning through the feelings and thoughts taken from personal experiences. The qualitative research method was adopted for this research through examining case studies. The aim of the research is to explore emerging patterns of sustainopreneurship within Malaysian green technology ventures. Sekaran and Bougie (2009), described that qualitative data can come from a wide variety of primary sources and / or secondary sources, such as individuals, company records, and the corporate website. In qualitative research, the data collected are examined to describe meaning as opposed to making statistical inferences. The data from this research was obtained through secondary data comprising of company records or archives, media industry analyses, websites and others for its case study approach.

4. Discussion / Analysis

The research seeks to examine different emerging patterns of sustainable entrepreneurship (sustainopreneurship) within green technology ventures in Malaysia in line with the objectives of the study which are: (1) to understand the concept of sustainopreneurship that focus on green tech ventures, and; (2) to examine how green tech entrepreneurs shape innovative solutions to problems related to the business sustainability. Hence, in the innovation-driven stage, the capability to produce innovative products and services at the global technology arena using cutting-edge methods becomes the overriding source of competitive advantage (Pillai and Ahamat, 2018). It is well accepted facts that competitive advantage is one of the critical elements of firm's sustainability while facing new challenges including the global pandemic.

This study developed a sustainopreneurship model (in Figure 1) by looking at the different patterns in companies that adopt green tech in ventures and companies that do not adopt green tech. Then, the research goes further by examining case studies in any firm chosen involved in the green tech sector. The result is the

construction of a sustainopreneurship model that can be used to stimulate the sustainable green tech environment.

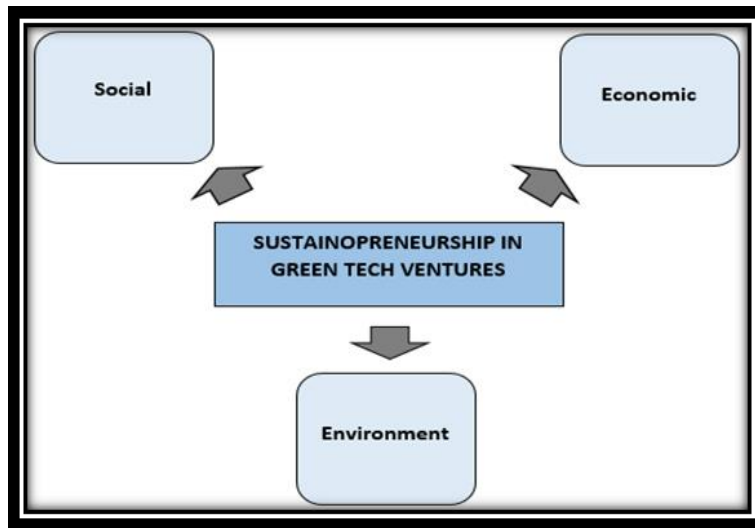


Fig. 1: Proposed Sustainopreneurship Model.

Elements of the triad that is sustainable development is integral in creating sustainability by balancing economic, environmental and values. By balancing the economic, environmental and social values in creating sustainability, the concept of sustainopreneurship that subsisted of the three aspects above will be used in the research. One of the discussion deliberates on the issue of entrepreneurial environment. The entrepreneurial environment is driven by entrepreneurial actions. While, entrepreneurs in this sense, enact opportunities by acquiring technology, and extracting cues that supply them with information that is relevant, sensible, convincing and logical (Ahamat & Chong, 2014). In a recent study conducted on 105 private hospitals in Indonesia, it is evidenced that entrepreneurial orientation of hospital organizations in Indonesia proved has a significantly positive influence on organizational performance in the disruptive environment condition (Dewi & Ahamat, 2018).

Nevertheless, this study investigates the role of hospital's business model innovation in the context of organization's performance. The hospital's business model innovation is influenced by the entrepreneurial orientation and the strength of collaboration between management with physicians, who can jointly improve organizational performance (Dewi & Ahamat, 2018). Therefore, an innovation-oriented corporate environment must be enabled by an HR process that promotes the creation of new products and services in order to achieve success in product innovation. Nonetheless, combining gain with social interests is far from an easy task when companies are more passionate about making economic benefits and investors satisfied (Ahamat, 2017).

5. Conclusion

In this research, sustainopreneurship was considered as the best concept to be used. There has been a growing number of research and developed interest towards understanding the factors behind green growth over the last few years. However, policy-makers and economists seemed to have missed a crucial and relevant problem. Ultimately, it is the 'green entrepreneur' who comes into the market with new green products and

technologies. The green entrepreneur is the one who transforms an idea into a reality, by taking prototypes into products that can be commercially sold. However, the main concerns of the policy are typically towards finding new innovations in technology that can combat the impact of human activity on the environment and address global environmental problems such as climate change, degradation in the land and biodiversity loss.

Less focus is given to the idea of commercializing technology, or to subsidize the ‘public good’ aspect of going green through green entrepreneurship. A sustainopreneurship model can thus be utilized to stimulate the sustainable green tech technology environment by highlighting the effectuation theory. Generally, an interpretive inquiry aims to characterize how people experience the world, the ways they interact together, and the settings in which these interactions take place (Ahamat, 2013). This includes the interpretation of meaningful human expressions, written, verbal and/or physical, involving namely human and social actions (Parker, 2008).

6. Limitation and Study Forward

Smith (1992) posits that human actions are assertions people make based on reasons, intentions and motivations, while the idea of society must be added because the meanings ascribed to human actions, both by the actors and the interpreters, are determined by, and can only be understood within, a social meaning. This could be expanded by examining the context of institutional support. A study suggest the importance of institutional support mechanism to encourage the successes and failures of family businesses (Ahamat & Chong, 2014). Thus, employing interpretive inquiry may accommodate well for future study in this area. Future research on human resource management technology as innovation determinants may employ a qualitative approach by embedding systems thinking to deepen the personal perspective of the investigation (Ahamat, 2014). It may involve interviews and personal observation, but not strictly restricted to them. Using structured interviews and personal observation allowed the researcher to discover some crucial trends that might not have been directly discovered as they are evolving if the research was limited to non-qualitative methods (Ahamat, 2019).

Acknowledgements

The authors would like to thank Centre of Technopreneurship Development (C-TED), CRIM, and the Faculty of Technology Management and Technopreneurship, Universiti Teknikal Malaysia Melaka (UTeM) for supporting this journal publication.

References

- Abrahamsson, A. (2000) Sustainopreneurship - Business with a cause. Conceptualizing Entrepreneurship for Sustainability. [Master thesis, Växjö University].
- Ahamat, A. (2013). Entrepreneurial opportunity creation in the biotechnology industry in Malaysia. [Doctoral dissertation, University of Sheffield]. <https://doi.org/10.13140/2.1.1140.0001>
- Ahamat, A. (2014). Examining how management research learns from research in the physical sciences. *GSTF Journal of Law & Social Sciences (JLSS)*, 4(1), 1-4, 95. <https://doi.org/10.7603/s40741-014-0013-2>
- Ahamat, A. (2017). Is Islamic banking and finance doing enough? Shaping the sustainable and socially responsible investment community. *Asian Social Science*, 13(3), 170-176. <https://doi.org/10.5539/ass.v13n3p170>
- Ahamat, A. (2019). Using Structured interviews and personal observation to study entrepreneurial opportunity: A reflection. *SAGE Research Methods Cases*. <https://dx.doi.org/10.4135/9781526490964>

- Ahamat, A., & Chong, S. C. (2014). Assessment of The Factors Influencing Entrepreneurs on The Biotechnology Business Venture. Proceedings of the 24th International Business Information Management Association Conference - Crafting Global Competitive Economies: 2020 Vision Strategic Planning and Smart Implementation, 2171-2177. <https://doi.org/10.13140/2.1.1719.5842>
- Ahamat, A., & Chong, S. C. (2015). Multi-methodological approaches in qualitative entrepreneurship research. *International Business Management*, 9(4), 601–612.
- Anderson, B. S., Covin, J. G., & Slevin, D. P. (2009). Understanding the relationship between entrepreneurial orientation and strategic learning capability: An empirical investigation. *Strategic Entrepreneurship Journal*, 3(3), 218–40. <https://doi.org/10.1002/sej.72>
- Blanco, S. (2007). How techno-entrepreneurs build a potentially exciting future? *Handbook of Research on Techno-Entrepreneurship*, 3–25. <https://doi.org/10.4337/9781847205551.00007>
- Brettel, M., Oswald, M., & Flatten, T. (2012). Alignment of market orientation and innovation as a success factor: A five country study. *Technology Analysis and Strategic Management*, 24(2), 151-165. <https://doi.org/10.1177/0258042X13516595>
- Clausen, T., & Korneliusen, T. (2012). The relationship between entrepreneurial orientation and speed to the market: The case of incubator firms in Norway. *Technovation*, 32(9-10), 560-567. <https://doi.org/10.1016/j.technovation.2012.05.004>
- Dewi, S., & Ahamat, A. (2018). The role of entrepreneurial orientation in achieving organization performance through business model innovation and asset relational collaboration. *Humanities and Social Science Reviews*, 6(2), 100-105. <https://doi.org/10.18510/hssr.2018.6212>
- Elkington, J. (1998). *Cannibals with forks: Triple bottom line of 21st century business*. John Wiley & Son Ltd.
- Huslan, M. A. A., Ahamat, A., Rajiani, I., & Ahmad, S. (2016). Modelling opportunity creation: The case study of green technology researchers in Malaysia. *International Information Institute*, 19(8), 3329-3244.
- Knight, F. H. (1942). Profit and entrepreneurial functions. *Journal of Economic History*, 2, 126-132.
- Lumpkin, G. T., & Dess, G. G. (1996). Clarifying the entrepreneurial orientation construct and linking it to performance. *The Academy of Management Review*, 21(1), 135-172. <https://doi.org/10.2307/258632>
- Mthanti, T. S., & Urban, B. (2015). Effectuation and entrepreneurial orientation in high-technology firms. *Technology Analysis & Strategic Management*, 26(2), 121-133. <https://doi.org/10.1080/09537325.2013.850161>
- Parker, L. D. (2008). Interpreting interpretive accounting research. *Critical Perspectives on Accounting*, 19(6): 909–914. <https://doi.org/10.1016/j.cpa.2007.03.013>
- Pillai, T. R., & Ahamat, A. (2018). Social-cultural capital in youth entrepreneurship ecosystem: Southeast Asia. *Journal of Enterprising Communities: People and Places in the Global Economy*, 12(2) 232-255. <https://doi.org/10.1108/JEC-08-2017-0063>
- Read, S., Sarasvathy, S., Dew, N., Wiltbank, R., & Ohlsson, A-V. (2010). *Effectual Entrepreneurship* (1st ed.). Routledge.
- Sarasvathy, S. D. (2001). Causation and effectuation: Toward a theoretical shift from economic inevitability to entrepreneurial contingency. *The Academy of Management Review*, 26(2), 243-263. <https://doi.org/10.2307/259121>
- Schindehutte, M., & Morris, M. H. (2009). Advancing strategic entrepreneurship research: The role of complexity science in the shifting paradigm. *Entrepreneurship Theory and Practice*, 33(1), 241-276. <https://doi.org/10.1111/j.1540-6520.2008.00288.x>
- Sekaran, U., & Bougie, R. (2009). *Research methods for business: A skill building approach* (5th ed.). John Wiley & Sons Ltd.
- Smith, J. K. (1992). Interpretive inquiry: A practical and moral activity. *Entrepreneurship Theory and Practice*, 31(2).
- Urban, B., & Barreria, J. (2010). Empirical investigations into firm technology orientation and entrepreneurial orientation. *International Journal of Innovation and Technology Management*, 7(4), 329-351. <https://doi.org/10.1142/S0219877010001969>
- Wiklund, J., & Shepherd, D. A. (2003). Knowledge-based resources, entrepreneurial orientation, and the performance of small and medium sized business. *Strategic Management Journal*, 24(13), 1307-1314. <https://doi.org/10.1002/smj.360>