Sustainable Entrepreneurship in Developing Countries: Is That Even Possible?

Review of Integrative Business & Economics Research

Manuel Alexis Vázquez Zacarías
Universidad Autónoma de Nuevo León

Mario César Dávila Aguirre *
Universidad Autónoma de Nuevo León

Elías Alvarado Lagunas
Universidad Autónoma de Nuevo León

ABSTRACT

The firm practices incorporate different levels of ecological awareness and activity. Some ecopreneurs have better environmental performance compared to the average company because they look for opportunities in their respective markets to innovate the goods and services. Therefore, a key question is how ecopreneurs of small firms innovate in comparison to conventional entrepreneurs in the same product sector in a developing country. The method selected to answer the research question is the qualitative case study utilizing judgment and convenience sampling method. The analysis centers on the five dimensions of innovation with the emphasis on ecological awareness and the workforce role. The finding that the innovation process dimensions were completely opposite in the two cases is of importance to the academia. Moreover, the importance for practitioners relies in the distinctive strategies. Finally, we proposed future research lines.

Keywords: Sustainable entrepreneurship, innovation, environmental performance, ecological modernization, ecopreneurs.

1. INTRODUCTION

The firm practices incorporate different levels of ecological awareness and activity. Most organizations still practice a defensive strategy in which they comply with legal obligations and try not to attract special attention from local residents, environmental activists, or the public (Belz & Strannegard, 1997). However, some ecopreneurs have better environmental performance compared to the average company (Isaak, 1998), as they look for opportunities in their respective markets to develop goods and services for environmentally aware customers (Schick, Marxen, & Freimann, 2002).

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

Schaltegger (2002) argued that ecopreneurship forms the basis of new forms of environmental progress within the economy when the firm's core business deals with environmental solutions and environmentally superior products that are based on innovation. As with more conventional activities, entrepreneurs are seen as agents of change and economic renewal (Atherton, 2004) where entrepreneurship is the vehicle by which the most radical ideas are sometimes implemented (Audretsch, 2002). Therefore, a key question is how do ecopreneurs of small firms innovate, in comparison to conventional entrepreneurs, in the same product sector in a developing country?

A research on ecopreneurial activity offers the possibility to explore the forms of alternative modes of environmental transformation (Harvey 1996) that may constitute a shift towards ecological modernization and also to investigate its coherence and relevance both empirically and theoretically (Gibbs 2006). Furthermore, as part of a research agenda for eco entrepreneurship, empirical studies of firms should take a wider view than just examining individual histories and motivations (Gibbs, 2009). Therefore, the purpose of this study conducted within firms was to assess the extent to which practices of ecopreneurs' startup firms are different from regular entrepreneurs' startup firms.

To accomplish the aim, the article is organized as follows. First, a conceptual foundation for the study is provided by defining key terms of reference and discussing the connection among ecological modernization, entrepreneurship, and organization design literatures. Subsequently, the study's research design and methods are described followed by the analysis and finally the conclusions.

2. LITERATURE REVIEW

2.1. Ecological Modernization

Ecological modernization refers to a process of the progressive modernization of the institutions of society, following the basic argument that the central institutions can be transformed in order to avoid ecological crisis (Gibbs, 2009). In this view, the current capitalist system is seen as having the capacity to develop sustainable solutions to environmental problems. Capitalism's drive for innovation can be harnessed to realize

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

environmental improvements (Beveridge & Guy, 2005). The main assumption made is that it becomes possible to restructure processes of production and consumption in ecological terms through the institutionalization and internalization of ecological aims.

The concept of ecological modernization as a theoretical concept has been used to analyze the changes to the central institutions in modern society that are deemed necessary to solve the ecological crisis (Gibbs, 2009). Specifically, this theory allows integrating the economic development and environmental protection through sustainable development in order to become institutionally acceptable (Tilley & Young, 2009).

By the end of the 1980s, Weale (1992) observed that the conflict between economics and the environment was being re-conceptualized, challenging the conventional belief that the two were mutually exclusive. Moreover, the ecological modernizers claim that the environmental protection and economic growth can be mutually supportive (Murphy, 2000). Specifically, this support could be possible due to the implementation of new innovative technologies and techniques developed in the era of modernity (Tilley & Young, 2009).

Most of the environmental social scientists that have advanced the theory of ecological modernization have emphasized economic actors and entrepreneurs as the central agents of change in the process of transformation needed to solve environmental challenges (Tilley & Young, 2009). The growing adoption of ecological modernization as the basis of environmental policy can be driven by innovative economic actors, such as sustainable entrepreneurs, and provide them with a niche or space in which to operate to create new markets for green goods and services (Barry &Paterson, 2003).

2.2. Entrepreneurship and ecological modernization

Despite the modern enthusiasm for entrepreneurship, no universally accepted definition of entrepreneurship has been proposed. A possible explanation to this anomaly could be related to the many guises that an entrepreneur can take. However, it can be said that the contribution of entrepreneurs to society has long been framed in neoclassical economic terms (Hebert & Link, 1989). Definitions have focused on the wealth creation and economic growth properties of entrepreneurship (Spencer,

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

Kirchhoff, & White, 2008; Wennekers & Thurik, 1999).

Schumpeter (1954), regarded as the founder of modern entrepreneurial theory, portrayed entrepreneurs as innovators. He coined the phrase creative destruction to describe the process by which entrepreneurs discover new opportunities and stimulate change in society. Entrepreneurship in this context is seen in revolutionary terms as the ability to bring about something new, whether it is a production method, technological development, product/service, distribution system, or even a new organizational form. Specifically, this point of view resembles the one described by the ecological modernization that takes into account the innovation as a driving motor.

Harding (2004) stated that entrepreneurship could create more jobs and contribute to higher economic growth, regeneration, and productivity. Additionally, the global entrepreneurship monitor report for 2006 stated that regardless of the level of development and firm size, entrepreneurial behavior remains a crucial engine of innovation and growth for the economy and for individual companies, since it implies attention and willingness to take advantage of unexploited opportunities (Harding, 2006).

This means that entrepreneurship theory is embedded in the language of economics, linking the entrepreneur with wealth creation, economic development, innovation, and jobs. In turn, this is translated into enterprise policy that promotes and supports the startup of new ventures and of technological innovation, which allows placing our understanding of entrepreneurs and entrepreneurship in a continuation of modernity. In this context, modernity refers to the progression of industrialization that begun in the late 17 century and continued to the present day (Tilley & Young, 2009). Therefore, concerning the understanding of the role and contribution of entrepreneurs in a sustainable society, it has been placed in the context of ecological modernization theory.

Innovation is the essence of entrepreneurship; hence, Schaltegger (2002) proposed that ecopreneurs destroy existing conventional production methods, products, market structures, and consumption patterns and replace them with superior environmental products and services. The study of ecopreneurship is therefore an attempt to understand the effect of innovative individuals and innovative organizations on the environments within which they act (Beveridge & Guy, 2005).

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

The drivers for change that encourage ecopreneruship can take several forms. Post and Altman (1994) identified three main drivers. The first one is compliance based driver, with environmental improvement emerging as an outcome of government regulation and legislation. The second one is market-based driver, with environmentally beneficial behavior coming through positive incentives. The third one is value-based driver, with environmental change emerging in response to consumer demands, as they act on their environmental values. However, it is important to notice that these drivers are not mutually exclusive, and ecoprenerus may respond to all three (Walley & Taylor, 2002).

2.3. Ecopreneurship and organizations

The ecological modernization theory has put innovation as a key determinant. Specifically, the relationship between firm size and innovation has received a lot of attention (Cohen, 1995). One of the oldest debates has tried to identify the firms, either large or small, which are more able to innovate (Tsai & Wang, 2005), with a specific focus on ecological modernization. Usually, large firms have a top-down corporate environmental care, and this creates problems in the implementation of ecopreneurship measures (Schick, Marxen, & Freimann, 2002). Therefore, to have a full view of ecopreneurship, it becomes important to center the research on small firms.

Even though it has not been possible to establish a strong relationship between firm's size and innovation, empirical research suggests that small and large firms have different determinants of innovation (Rogers, 2004; Van Dijk, Den Hertog, Menkveld, & Thurik, 1997). The main relative strengths of small firms lie in behavioral advantages. Specifically small firms usually enjoy internal conditions, like entrepreneurship, flexibility, and rapid response, which encourage innovativeness (Lewin & Massini, 2003). Furthermore, this type of firms have been credited with increasing flexibility in production (Fiegenbaum & Karnani, 1991), price (MacMillan, Hambrick & Day, 1982), speed (Katz, 1970), and risk-seeking behavior (Hitt, Hoskisson, & Harrison, 1991).

Small firms are motivated to constantly seek threats and opportunities to survive and prosper (Aldrich & Auster, 1986). Specially, this can be seen in

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

ecopreneurial developments that may require longer periods to achieve market breakthroughs compared to conventional entrepreneurial activities (Randjelovic, O'Rourke, & Orsato, 2003). Moreover, if we assume that small firms generally face severe problems of legitimacy (Aldrich & Auster, 1986), it makes sense that they must go to lengths to appear reliable and normal.

3. METHODOLOGY

Edmondson and McManus (2007) noted that quantitative methods are appropriate for mature state theories while qualitative methods are fit for emerging theories. This is important because one major critique of the ecopreneurial literature is that it is heavy on speculation and extremely light on empirical evidence (Gibbs, 2009). Few researchers provide any evidence beyond a limited number of case studies. For example, Pastakia (1998) developed a typology of ecopreneurship with six examples. Schaltegger (2002) used seven cases to establish a typology of ecopreneurship based on the priority given by the entrepreneur to environmental issues and the market effect of the business. Moreover, Walley and Taylor (2002) offered four examples for each of their typologies of ecopreneurship based on two axes, structural influences and personal orientation, with much of this being supported by anecdotal evidence of the entrepreneur.

The studies mentioned above are qualitative. This implies that the theory is still in an emerging state and that the qualitative methodology is appropriate. Additionally, it has to be noticed that the studies took placed in developing countries and focused mainly on the perceptions of the entrepreneur alone, the advisors, and investors. Furthermore, the different national and local contexts influenced the ecopreneurial identities and opportunities (Downing, 2005). Consequently, it seems convenient to analyze the entire organization (not only the ecopreneur) to be able to extract the particular characteristics of a firm driven by an ecopreneur in a developing country, the conditions of which differ from those of the developed country.

In developing countries, Hobday (2005) stated that firms frequently operate within small, underdeveloped markets where the innovation infrastructure may well be lacking. Furthermore, Hobday (2005) established certain characteristics that apply particularly to the firms in developing countries. First, they must create new strategies to overcome their sensitive technological and market disadvantages. Second, to the

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

extent that these firms do not simply follow existing models when competing, the innovation is possible at the level of strategy, marketing, and technology because in many circumstances, firms cannot merely imitate the leaders. Third, firms have their own distinctive resources, capabilities and stage of backwardness. Fourth, it is highly likely that the firms must develop their own distinctive strategies based on their own particular resources.

It should be remembered that usually, the large firms have a top-down corporate environmental care, which creates problems in the implementation of ecopreneurship measures (Schick, Marxen, & Freimann, 2002). Therefore, in order to have a full view of ecopreneurship, it becomes important to center the research in small innovative firms.

The qualitative case study will be used to answer the research question because it facilitates exploration of a phenomenon within its context using various data sources (Baxter & Jack, 2008). Furthermore, according to Baxter and Jack's (2008) interpretation of Yin, a case study design should be considered in three cases. First, it should be used when the focus of the study is to answer how driven questions, and this is present in the research question that wants to be answered here. Second, in case study design, it is not possible to manipulate the behavior of those involved in the study. This is also the case in our study because the employees of the organization who participated in this study are fulfilling the guidelines established by the ecopreneur. Third, using the case study design allows us to cover contextual conditions because the researcher believes that it is relevant to the phenomenon under study or the boundaries between the phenomenon and context are not clear. This last feature is also present in our study because the innovative firms in developing countries have certain specific characteristics derived from the context.

3.1 Sample

The judgment sampling strategy is used because the reason behind the framing of the study in one specific product is that small firms often focus on certain market niches (Carroll, 1984) and hence tend to make competitive moves in limited domains, enhancing swiftness. Additionally, small innovating firms typically specialize in their technological strategies, concentrating on product innovation in specific producers goods (Pavitt, 1991). Their key tasks involve finding

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

and maintaining product niches (Pavitt, 1991).

A firm can be considered small in two different but related ways, in sheer organizational size or in their industry market share (Chen & Hambrick, 1995). Although size and market share are conceptually different, they are empirically correlated (Chen & Hambrick, 1995). Therefore, we used the organizational size in terms of the number of employees as a measure of the dimension of the firm; specifically, we considered a small firm that has from 10 to 49 employees (Wang, Watkins, Harris, & Spicer, 2004).

We analyzed two innovative firms that produce the same product, but one of the firms was managed by an ecopreneur and the other one by a regular entrepreneur. The ecopreneur was selected because of "the continuing commitment by business man to behave ethically and contribute to economic development while improving the quality of life for the workforce, their families, the local community as well as the future" (Crals & Vereeck, 2004, 1). Moreover, in order for the firm to be considered innovative, it should introduce innovated product; thus, we checked whether the organization had a patented product or the patent was in the crediting process. Furthermore, convenience sampling was used because the two most accessible firms with the needed characteristics were selected (Marshall, 1996). Specifically, the two firms that participated develop car-cleaning products, and they are located in the city of Monterrey in Mexico.

The data collection was done through in-depth interviews, which has been a widely used method in studies on ecopreneurship (Pastakia,1998; Schaltegger, 2002; Walley & Taylor, 2002). Moreover, the interviews were conducted with at least 8 employees from different departments to gather varied perspectives on the organization. Furthermore, the interviews were guided by the innovation dimensions that consider the environment, the workforce, costs, and context. Additionally, the guide was flexible enough not to limit exploration.

4. RESULTS

The firm of the entrepreneur was funded in Monterrey Mexico in 1996. It produces and sells almohorol, degreasers, shoe soaps, and shoe inks. The market niche of this firm is the hardware stores, auto part stores, and shoemakers. Additionally, the firm is

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

in the patent crediting process of the degreasers. However, due to the comparison objectives, the analysis focuses only on the innovation process for the almohorol product.

The organization has 12 employees working in two departments. The first one is the product development and production. The second one is in the commercialization. From the first department, we interviewed the owner and entrepreneur. He is a man in the mid-fifties and a chemical engineer. From the second department, we interviewed the chief salesman who is a man in the mid-thirties and has been with the firm for eight years.

An innovation can be comprehensively described using five different dimensions (Gatignon et al., 2002), which are product complexity (the number of its subsystems), the locus of the innovation in a product's hierarchy (core/peripheral), different types of innovation (generational and architectural), and the innovation's characteristics (incremental/radical, competence-enhancing, and competence-destroying). Such a structural approach to describing innovation helps untangle issues with the unit of analysis as well as the differential effects of an innovation's hierarchical location from its type and characteristics.

A growing number of studies have focused on products as composed of hierarchically ordered subsystems or modules (Baldwin & Clark, 2000; Clark, 1985; Schilling, 2000). As Abernathy and Clark (1985) described in automobiles, central subsystems, such as the engine, pace the development of more peripheral subsystems. Those core subsystems are either tightly connected to, interdependent on other subsystems, and/or associated with strategic performance parameters (Ulrich & Eppinger, 1995). Therefore, core subsystems are strategic bottlenecks (Clark, 1985). In contrast, peripheral subsystems are weakly coupled with or less interdependent on other subsystems, and/or they are not associated with strategic performance parameters. Consequently, shifts in core subsystems will have cascading effects on the product while shifts in peripheral subsystems will have minimal system-wide effects.

Architectural innovation involves changes in mechanisms linking existing subsystems while generational innovation involves changes inside the subsystems (Gatignon et al., 2002). Moreover, incremental innovation involves refining, improving, and exploiting an existing technical trajectory (Hollander, 1965). In contrast, a radical innovation disrupts an existing technological trajectory (Dosi, 1982).

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

Quite distinct from the incremental/radical dimension, Hollander (1965), and more recently Tushman and Anderson (1986), distinguished between types of innovations that build on existing competencies versus those that destroy existing competencies. This competence-anchored innovation characteristic is independent of the radical/incremental dimension. For example, some radical innovations destroy competence (e.g., quartz movements for the Swiss in the 1970s) while others enhance competence (e.g., automatic movements for the Swiss in the 1970s). Competence enhancing/destruction is an innovation characteristic rooted in a firm's particular history.

Returning to the case and according to the regular entrepreneur, the almohorol contains three subsystems. The locus of innovation could be considered peripheral because the entrepreneur established that the gas naphtha that is present in one of the subsystems was removed. Moreover, this change generated an architectural innovation because now the percentages of solutes had to be altered in other subsystems to maintain a balance and effective almohorol. After the previous changes, the entrepreneur mentioned that glycerin was added to the formula. Furthermore, the innovation could be considered incremental and competence enhancing because almohorol was improved based on the knowledge obtained from the basic formula. Besides, the changes involved the insertion of glycerin to the basic formula.

During the entire innovation process, the entrepreneur mentioned that the environmental effect was not an issue. The most important objective was to generate a product that fulfills a quality standard related to the one-day duration of the brightness after the application of almohorol to the tires. Moreover, the workforce was consider just to evaluate if with the actual number of workers could maintain the production schedule determined by the clients deadlines.

Other interviewee was the chief salesperson in charge of the commercialization department. The salesperson mentioned that the product being developed needs to fulfill the client’s requirements. Moreover, he established that the gas naphtha was removed from the almohorol because it left a grease cover in the tires that the customer disliked and the price increased significantly. Therefore, in this context, the innovation was limited to the Afuah’s (2003) conception that new knowledge is used to offer a new product or service that customers want.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

This point of view of innovation is particularly valuable in several regards. First, it is clear that the process of innovation cannot be separated from a firm´s strategy (Porter, 1990). Second, innovation entails both invention and commercialization (Afuah, 2003). Third, the new knowledge can be technological or market (Afuah, 2003). The technological knowledge concerns the bonds between components, methods, processes, and techniques that go into a product or service. The marketing knowledge is related to the distribution channels, product applications, preferences, needs, and customer expectations.

The entrepreneur and the salesman mentioned that the innovation was done by the firm and without any type of collaboration. One reason for this situation is that in the developing countries, there is a distrust in institutions, the high growth of the inefficient bureaucratic organizations, as well as high corruption and the lack of commitment to innovation (Scheel & Pineda, 2011).

The firm of the ecopreneur was funded in Monterrey, Mexico, in 2009. It produces and sells almohorol, degreasers, shampoo, and window cleaners. The market niche of this firm is the hardware stores, auto part stores, and carwash. Moreover, the firm has already patented the almohorol. Furthermore, due to the comparison objectives, the analysis focuses on the innovation process for the almohorol product.

The organization has 11employees and seven of them are family members. There is not a clear division of departments inside the firm. Therefore, we interviewed the ecopreneur and his wife, his right hand according to ecopreneur. Moreover, he is a man in the mid-forties. Specifically, the firm developed almohorol using mix of certain natural herbs. Furthermore, they used chemical only for the long-term preservation of the product.

According to the ecopreneur, the almohorol was created by chance because the original idea was to create a product for a different use. The almohorol initially contained three subsystems. However, in this case, the locus of innovation could be considered core because the ecopreneur established that the third subsystem was a main ink herb that was removed, and this left only two subsystems in the product. Moreover, this change led to a generational innovation because now the natural essences were inserted in the raw and dry conditions instead of being liquid and moisturized. Furthermore, the innovation could be considered radical and competence

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

destroying because the almohorol was created without any previous knowledge related to the type of natural essences required. Besides, the changes concentrated on the insertion of certain natural essences that previously could never be mixed due to the liquid and moisturized conditions in which they were used.

At this point, it is possible that in the two cases, the innovation dimensions mentioned by Gatignon and colleagues (2002) were opposite. This can be seen in Table 4.1.

Dimensions	Entrepreneurs firm	Ecopreneurs firm
Number of subsystems	3	2
Locus of innovation	Peripheral	Core
Types of innovation	Architectural	Generational
Characteristics	Incremental	Radical
Characteristics	Competence enhancing	Competence destroying

Table 4.1 Comparison of the Innovation dimensions of the two cases

Deepening on the innovation process, the ecopreneur mentioned that the environmental effect was a main issue. The most important objective to the ecopreneur was to create a product that fulfills a quality standard related to the cleaning of 100 tires with only three drops of water. Additionally, the workforce was considered when brainstorming about product needs. Moreover, the firm is continuously seeking to transmit the ecological awareness to the workers to improve the production process. Furthermore, one of the firm's policies is that each worker should participate once a year in the ecological programs of the schools in the community.

In contrast, in the entrpreneur's firm, the quality controls focus only on the customer requirements, the ecological effect is not an issue. The workforce is evaluated just in terms of the production capability. Neither firm considers the society's participation.

An interviewed was conducted with the ecopreneurs' wife. She is in the mid-thirties and has been with the firm since its foundation. She mentioned that the firm's interest in the society's welfare is extremely important, even to the point that the organization is willing to give the patent of the product free of charge, if the community is united and if the effect related to water consumption is extremely significant in the city.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

The ecopreneur and his wife stated that the firm did not engage in any type of collaboration for the innovation process. However, now they have a partnership with another organization with an aim to expand the almohorol nationally. Additionally, the association interest is in obtaining more resources that would facilitate the development of different types of ecological products. The particular importance of the association for the small firms is that the literature on innovation has been emphasizing the role of cooperation in overcoming the lack of internal resources and in improving innovativeness and competitiveness (Nieto & Santa Marina, 2010).
Across different industries, firms are increasingly blending their competitive strategies with cooperative strategies using various network links to coordinate inter-organizational activities (Nielsen, 1988). Moreover, the increase in inter-organizational links is thought to enhance the innovation of organizations by providing opportunities for shared learning, transfer of technical knowledge, and resource exchange (Goes & Park, 1997).

5. CONCLUSIONS

This study observed a distinct level of ecological awareness and activity in the firms' practices. The research on entrepreneurial and ecopreneurial organizations allowed us to explore the differences in the innovation processes of the firms.

The finding that the innovation process dimensions were completely opposite due to the weight given by the firms to the environmental effects and social participation is of importance to the academia. Moreover, the context forced the firms to innovate in an isolated manner and to look for associations after obtaining certain reliability associated with patenting process.

For practitioners in developing countries, it is important to employ distinctive strategies for success that would regard the environmental effects as the main issue during the innovation process. Furthermore, this gives support to the empirical literature, which has consistently demonstrated that radical innovations are riskier (with corresponding returns) and have more profound organizational effects compared to incremental innovation (Cooper & Smith, 1992; Damanpour, 1996).

Finally, we have to acknowledge the limitations of our study. First, we conducted only two interviews in each firm. Therefore, a more in depth analysis is needed to

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

understand the boundaries of the innovation process. Future research should be conducted with ecopreneurs who do not have family firms to observe different roles of workforce in the innovation process.

ACKNOWLEDGEMENTS

This article was written as a part of a research project titled “Social Entrepreneurship business ecosystem” (DSA/103.5/15/6797, UANL-PTC-907), which was financed by the Mexican Ministry of Education.

REFERENCES

[1] Abernathy, W & Clark, K. (1985). “Innovation: Mapping the winds of creative destruction”. *Reserch Policy*, 14, 3-22.

[2] Afuah, A. (2003) “Models of innovation”. In Afuah, A. *Innovation management. Strategies, implementation, and profits* (pp. 13-46).New York: Oxford University Press.

[3] Aldrich, H. E., & Auster, E. (1986). “Even dwarfs started small: Liabilities of size and age and their strategic implications”. *Research in Organizational Behavior,* 8, 165-198.

[4] Atherton, A. (2004). “Unbundling enterprise and entrepreneurship: From perceptions and preconceptions to concept and practice”. *The International Journal of Entrepreneurship and Innovation*, 5(2), 121-127.

[5] Audretsch, D.B. (2002). “Entrepreneurship: A Survey of the Literature”. Prepared for the European Commission, Enterprise Directorate General in the Institute for Development Studies, Indiana and Centre for Economic Policy Research: London.

[6] Barry, J., & Paterson, M. (2003). “The british state and the environment: New labour’s ecological modernisation strategy”. *International Journal of Environment and Sustainable Development*, 2 (3), 237-249.

[7] Baldwin, C. & Clark, K. (2000). “Design rules: The power of modularity”. Cambridge, MA: MIT Press.

[8] Baxter, P. & Jack, S. (2008). “Qualitative case study methodology: Study design and implementation for novice researchers”. *The Qualitative Report, 13*(4), 544-559.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

[9] Belz, F., & Strannegard, L. (1997). “International business environmental barometer”. Oslo:Cappelen Akademisk Forlag.

[10] Beveridge, R. & Guy, S. (2005). “The rise of the eco-preneur and the messy world of environmental innovation”. *Local Environment 10*(6), 665-76.

[11] Carroll, G. R. (1984). “The specialist strategy”. *California Management Review, 26*(3), 126-137.

[12] Chen, M.J. & Hambrick, D.C. (1995). “Speed, Stealth, and Selective Attack: How Small Firms Differ from Large Firms in Competitive Behavior”. *Academy of Management Journal, 38* (2), 453-482.

[13] Clark, K. (1985). “The interaction of design hierarchies and market concepts on technological evolution”. *Research Policy, 14*(5), 235-251.

[14] Cohen, W.M. (1995). “Empirical studies of innovative activity”. In Handbook of the Economics of Innovation and Technological Change. Ed P. Stoneman. Oxford: Blackwell, 182-26

[15] Cooper, A. & Smith, C. (1992). How established firms respond to threatening technologies. *Academy of Management Executive, 6*(2), 55-70.

[16] Crals, E., & Vereeck, L. (2004). *Sustainable entrepreneurship in SMEs: Theory and practice*. Paper presented at the 3rd Global Conference in Environmental Justice and Global Citizenship, Copenhagen, Denmark, February 2004.

[17] Damanpour, F. (1996). “Organizational complexity and innovation: Developing and testing contingency models”. *Management Science, 42*(5), 693-701.

[18] Dosi, G. (1982). “Technological paradigms and technological trajectories”. *Research Policy, 11*(3), 147-162.

[19] Downing, S. (2005). “The social construction of entrepreneurship: Narrative and dramatic processes in the co-production of organizations and identities”. *Entrepreneurship Theory and Practice, 29* (2), 185- 204.

[20] Edmondson, A.C & McManus, S.E. (2007). “Methodological fit in management field research”. *Academy of Management Review*, 32(4), 1155-1179.

[21] Fiegenbaum, A., & Karnani, A. (1991). “Output flexibility-A competitive advantage for small firms”. *Strategic Management Journal, 12*(2), 101-114.

[22] Gatignon, H., Tushman, M.L., Smith, W. & Anderson, P. (2002). “A structural approach to assessing innovation: Construct development of innovation locus, type, and characteristics”. *Management Science.* 48(9), 1103-1122.

[23] Gibbs, D. (2006). “Prospects for an environmental economic geography: Linking ecological modernisation and regulationist approaches”. *Economic Geography,*

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

82(2), 193-215.

[24] Gibbs, D. (2009). "Sustainability entrepreneurs, ecopreneurs and the development of a sustainable economy". *GMI*, 55, 63-78

[25] Goes, J., B., & Park, S. H. (1997). "Interorganizational links and innovation: The case of hospital services". *Academy of Management Journal*, 40, 673-687.

[26] Harding, R. (2004). "Global Entrepreneurship Monitor". London, U.K.: London Business School

[27] Harding, R. (2006). "Global Entrepreneurship Monitor". London, U.K.: London Business School.

[28] Harvey, D. (1996). "Justice, nature and the geography of difference". Oxford, UK: Blackwell.

[29] Hebert, R.F. & Link, A.N. (1989). "In search of the meaning of entrepreneurship". *Small Business Economics*, 1, 39-49.

[30] Hitt, M. A., Hoskisson, R. E, & Harrison, J. S (1991). "Strategic competitiveness in the 1990s: Challenges and opportunities for U.S. executives". *Academy of Management Executive, 5*(2), 7-22.

[31] Hobday, M. (2005). "Firm-level innovation models: Perspectives on research in developed and developing countries". *Technology Analysis & Strategic Management*, 17(2), 121-146.

[32] Hollander, S. (1965). "Sources of efficiency". Cambridge, MA: MIT Press

[33] Isaak, R. (1998)."Green logic: ecopreneurship, theory and ethics". Sheffield, UK: Kumarian Press.

[34] Katz, R. L. (1970). "Cases and concepts in corporate strategy". Englewood Cliffs, NJ: Prentice Hall.

[35] Lewin, A.Y. & Massini, S. (2003). "Knowledge creation and organizational capabilities of innovating and imitating firms". In Organizations as Knowledge Systems. Eds. Tsoukas, H. and Mylonopoulos. New York: Palgrave, 209-237.

[36] Marshall, M.N. (1996). "Sampling for qualitative research". *Family Practice, 13*(6), 522-525.

[37] MacMillan, I. C., Hambrick, D. C., & Day, D. L. (1982). "The product portfolio and profitability-A PIMS-based analysis of industrial-product businesses". *Academy of Management Journal, 25*(4), 733-755.

[38] Murphy, J. (2000). "Ecological Modernisation". *Geoforum* 31, 1-8.

[39] Nielsen, R. P. (1988). "Cooperative strategy". *Strategic Management Journal*, 9(1), 475-492.

[40] Nieto, M.J. & Santamaria, L. (2010). "Technological collaboration: Bridging the

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

innovation gap between small and large firms". *Journal of Small Business Management, 48*, 44-69.

[41] Pastakia, A. (2002). "Assessing ecopreneurship in the context of a developing country: The case of India". *Greener Management International,* 38, 93-108.

[42] Pavitt, K. (1991). "Key Characteristics of the Large Innovating Firm". *British Journal of Management,* 2, 41-50.

[43] Porter, M.E. (1990). "The Competitive Advantage of Nations". New York: Free Press.

[44] Post, J.E. & Altman, B.W. (1994). "Managing the environmental change process: Barriers and opportunities". *Journal of Organizational Change Management, 7*(4), 64-81.

[45] Randjelovic, J., O'Rourke, A.R. & Orsato, R.J. (2003). "The emergence of green venture capital". *Business Strategy and the Environment,* 12, 240-253.

[46] Rogers, M. (2004). "Networks, Firm Size and Innovation". *Small Business Economics, 22* (2), 141-153.

[47] Schaltegger, S. (2002). "A framework for ecopreneurship: Leading bioneers and environmental managers to ecopreneurship". *Greener Management International,* 38, 45-58.

[48] Scheel, C. & Pineda, L.(2011). "Building industrial clusters in Latin America: Paddling upstream". *International Journal of Sociotechnology and Knowledge Development,* 3, 34-54.

[49] Schick, H., Marxen, S. & Freimann, J. (2002). "Sustainability issues for start-up entrepreneurs". *GMI*, 38, 59-70.

[50] Schilling, M. (2000). "Toward a general modular systems theory and its application to interfirm product modularity". *Academy of Management Review, 25* (2), 312-334.

[51] Schumpeter, J. (1954). "Capitalism, Socialism and Democracy". London, U.k.: Allen & Unwin,

[52] Spencer, A.S., Kirchhoff, B.A. & White, C. (2008). "Entrepreneurship, innovation, and wealth creation". *International Small Business Journal,* 26, 9-26.

[53] Tilley, F. & Young, W. (2009). "Sustainability entrepreneurs: Could they be the true wealth generators of the future?". *GMI,* 55, 79-92.

[54] Tsai, K-H. &Wang, J-C. (2005). **"**Does R&D performance decline with firm size? A re-examination in terms of elasticity". *Research Policy, 34 (6), 966-976.*

[55] Tushman, M. & Anderson, P. (1986). "Technological discontinuities and

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)

organizational environments". *Administrative Science Quarterly, 31*(3), 439-465.

[56] Ulrich, K. & Eppinger, S. (1995). "Product design and development". New York: McGraw-Hill

[57] Van Dijk, B.; Den Hertog, R., Menkveld, B. & Thurik, R. (1997). "Some New Evidence on the Determinants of Large- and Small-Firm Innovation". *Small Business Economics, 9 (4), 335-343.*

[58] Wang, Y., Watkins, D., Harris, N. & Spicer, K. (2004). "The relationship between succession issues and business performance: Evidence from UK family SMEs". *International Journal of Entrepreneurial Behaviour & Research, 10* (2), 59-84.

[59] Walley, E.E., & Taylor, D. (2002). "Opportunists, champions, mavericks . . . ? A typology of green entrepreneurs". *Greener Management International,* 38, 31-43.

[60] Weale, A. (1992). "The New Politics of Pollution". Manchester, UK: Manchester University Press.

[61] Wennekers, S., & Thurik, R. (1999). "Linking Entrepreneurship and Economic Growth". *Small Business Economics,* 13, 27-55.

ISSN: 2304-1013 (Online); 2304-1269 (CDROM)