

## Environmental Awareness and Perception on Environmental Management of Entrepreneurs in Batik Industry in Kelantan, Malaysia

Mohd Rafi Yaacob\*, Nur Faizah Mat Zain

Faculty of Entrepreneurship and Business, Universiti Malaysia Kelantan, Malaysia

Received 28 July 2015  
Accepted 14 November 2016  
Online 30 December 2016

### Keywords:

Environmental concerns,  
environmental awareness,  
environmental perceptions, batik  
industry

✉\*Corresponding author:  
Assoc. Prof. Dr. Mohd Rafi  
Yaacob,  
Faculty of Entrepreneurship and  
Business, Universiti Malaysia  
Kelantan, Malaysia

Email: rafi@umk.edu.my

### Abstract

Small businesses form a backbone of economy in developed countries as well as in developing countries. However, at the same time, small businesses significantly contributed to environmental degradations because they are preoccupied with matters pertaining to business as well their limitation in resources to look after the environment. In Malaysia, batik industry is one of handicraft products that contributed significant to the country economy, but the industry has poor environmental record. Yet until recently, not many researchers in Malaysia conducted in research pertaining to environmental awareness and perception of SMEs entrepreneurs on environmental issues exacerbated by their businesses. This paper examines entrepreneurs awareness and perceptions of environmental issues. This study utilized in-depth interviews with three entrepreneurs in the industry in Kelantan. The results of the study found that not all batik entrepreneurs knowledgeable about batik industry effects on the natural environment. However, all of them had a positive perception about green business and they agreed that environmental regulations are very important to batik firms. They also agreed that the government needs to monitor and tighten up the existing environmental laws for greener environment in the industry.

© 2016 UMK Publisher. All rights reserved.

### 1. Introduction

Since in the late 1980s, the business impacts on the environment have become an issue of increasing concern, particularly in western economies (Gerrans and Hutchinson, 2000; Robbins, 2001). In Europe as well as other developed nations, environmental concern has been shared by environmental groups and legislators, customers, local communities, public authorities, suppliers, financial institutions and employees (Bubna-Litic and De Leeuw, 1999; Deegan, 2007; Petts et al., 1998).

When ones talk about environmental issues, usually ones would imagine of impact of big businesses because of their sheer size which easily visible. Due to various stakeholders' pressures big businesses could not help but have to comply with environmental laws. However, relationship between small business and the environment are under research. It is easy to comprehend why it is the case, small business have very limited operations vis a vis their big business counterparts. Individuals, small business would not have less impact to the environment, but taken together, they can contribute

significantly to environmental degradation. Surveys in the past showed many small business owners believed that they have little impact on the environment (Lee, 2000; Rowe and Hollingsworth, 1996). Actually, their total negative impacts to the environment is too high, surpassing big organizations.

SMEs also contribute a similar important position in Malaysians' economies. Hence, the ability and willingness of small business owners make actions decisions to manage the environmental impact of their business is an issue of concern. However, in many cases, environmental management action may result from concerns and legislation is an important fortress for owner-managers have a positive environmental reaction. But nevertheless, the positive response depends on awareness of entrepreneurs. As cited by Hillary (1999), there may be no formal environmental plan or policy, but SMEs may nevertheless be engaged in environmental-friendly practices.

Environmental awareness can be defined as one of components in sustainable development in a country. The motivation for SMEs to adopt environmental

management standards in producing eco-friendly products and developing business advantage through their reputation for environmental awareness production (Guirdham, 2010). The lack of environmental awareness among entrepreneurs may cause environmental problems because they do not know their business implications. A sustainable development is not going to be achieved unless other important players – small and medium enterprises (SMEs) are also environmentally responsible. Similar to its medium and big business counterparts, small business' activities have also contributed to environmental problems. Although an individual contribution towards environmental problem compare to big businesses, taking together, they have a very large impact to such problems (Welford, 1994; Tilley, 1999). In this regard, special attention should also be given to small businesses in order to address environmental degradation in the country. But, one must bear in mind that small businesses is not a little version of big business, in regard of their limitations in terms of resources – finance, human and technology. They need different approaches according to their means and grasps in addressing the problems.

Batik industry in Malaysia is dominated by the two in east coast states of Malaysia- Kelantan and Terengganu. It is classified as a cottage industry. In addition, it has also classified as handicraft industry because it involves the use of means, methods, and tools used are still traditional. The bulk of this premise has been built along the river intended to use the water from the river as a water source. Batik has now expanded beyond traditional domain, to go through the process of modernization concepts, techniques and philosophy of its own. In the batik making process, the effluents are often rich in color and organic pollutants which require a proper treatment before discharging into the environment. It is known that high demand for batik products will contribute to the production of more effluent with high COD value and creating it as one of the main sources of severe pollution in Malaysia.

Realizing environmental impacts of batik process, it is timely to arrest this problem that warrants green practices which are environmentally friendly. The implementation of green industry practices is deemed justified because in the long run it reduces negative impacts on the environment. The benefits for environmental aspects are: no dye spill and chemicals able to absorb directly into the ground or discharged into the public drain and river. Then, the benefits of safety and health are: avoid the workers from physically injured and decrease workers' risk of disease such as cancer that caused by dyes and chemicals exposed. Greens batik has cost benefits like reduction in raw material costs through savings, cost reduction through water conservation, cost reduction through energy conservation (electric, firewood

and gas) and reduction of costs for water treatment (Malaysian Department of Environment, 2013).

Amongst various cottage industries, batik industry is chosen as a case. There are a number of reasons. First, the said industry is responsible for water pollution and according to the latest report by department of the state of Kelantan compliant rate of the industry relatively low compared with other industries-65% (DOE Kelantan Report, 2011). This industry produces wastewater which contributes to water pollution since it utilizes a lot of chemicals. Wastewater from batik industry contains grease, wax, heavy metal suspended solids, and dyes (in painting and coloring processes)(McClatchy, 2011). Second, batik industry is a significant industry in Malaysia. It is a cottage industry which is largely run by Malay entrepreneurs, largely in the two Malay belts state of Kelantan and Terengganu. This industry not only provides income for entrepreneurs but at the same time employed thousands workforces in both downstream and upstream of the industry. The future of Malay craft relies on the survival of the very industry. So, it comes as no surprise to see why this industry has given more priority by government.

The objectives of the research are: to explore the level of environmental awareness and perception of batik entrepreneurs.

## 2. Batik Industry Issues

According to Department of Environment in 2011, batik manufacturing industries in Kelantan recorded the lowest percentage of environmental compliance (62.50%), and other manufacturing industries like metal fabrication, leather, electric and electronic, food and drink, rubber based, batik handicraft and textile recorded 100% compliance. Low-compliance by batik manufacturing was identified due to contributed to the highest carbon emissions per year among small and medium enterprises (SMEs) in the country. In the same year, there were 47 premises not specified under the Regulations Environmental Quality (Industrial Effluents) Regulations 2009. Amongst those premises, 40 of these premises are batik industry and 7 other manufacturing premises. Compliance with Regulations Environmental Quality (Industrial Effluents) Regulations 2009 by non-designated premises is 95.31%. Hence, the compliance with environmental law by these manufacturing industries could be improved significantly.

As an alternative, firms are obligated to adopt new ways in managing the production process by adding the environmental factors in the management. In environmental management, environmental performance of a firm is constantly measured to ensure a company complies with environmental regulations. Environmental management have already been widely applied in developed countries due to stringent environmental

regulations, coupled with increasing pressures from various stakeholders. In the past and hitherto, most businesses and industries measured only aspects directly related to legal requirements or financial costs. However, a small percentage of businesses have taken a step further. Embracing sustainable development, they have begun to manage environmental aspects of their business systems and more proactively.

Measuring environmental performance of the industry is an option to overcome the pollution problem in Malaysia. It shows that imposing regulatory measure alone are not the panacea of environmental problems, the cooperation from the industrial sector who is responsible for environmental problems is also vital. Cooperation helps the latter to implement the plans and strategies to reduce the pollution. For example cooperation with Department of Environment and batik entrepreneurs provide a better solution. Faizah et al. (2014) discussed a green model in the batik industry developed by DOE by highlighting three options for green strategy such as premise layout, consumption of raw materials and waste management option. The implementation of green industry practices is very effective to deal with environmental issues exacerbated by the said industry.

Overall, most research pertaining to small business and environmental performance were conducted in developed countries (Welford, 1993, Shaper, 2002, Tilley, 1999a, 1999b, Debby, 2008; Groundwork, 1995; Friedman & Miles, 2001; and Hillary, 2004). Even comparatively low compared with their developed countries counterparts, a number of related studies were also conducted in developing countries (Sonnenfeld, 2000; Frijns, Phuong and Arthur 2000; Rao et al., 2009). However, only a few researchers have delved into this particular research area in Malaysia (Yaacob, Mahmood & Nik Ismail, 2007, Yaacob, 2010, Faizah et al., 2014).

### **3. Environment in the Context of Sustainability**

An increasing humans' populations may caused declination of natural ecosystems and changes in the balance of natural cycles which lead to negative impact on both humans and other living systems. An initiative, which is called the Local Agenda 21 (LA21) was proposed at the United Nations Conference on Environment and Development (UNDEC) in the Earth Summit in Rio, Brazil in 1992 (Tonami and Mori, 2007). Sustainable development requires the integration and balance of three parts -environmental, social and economic benefits in decisions of any development (Atkinson, 2004). The starting point of sustainable development is the idea that the long-term preservation and conservation of our environment, our habitat as well as biodiversity and natural resources and the environment

will only be possible if combined simultaneously with economic, social and political development particularly geared to the benefit of the poorest members of society.

#### **3.1. Awareness and Perceptions on the Environmental Issues**

Environmental awareness is one of the components that is vital in strengthening sustainable development in any countries. A few researchers said that public awareness through educational programs is very important and an essential step toward sustainable developments (A. H. Ziadat, 2009; Young, 1998; Harvey, 1994). The development of environmental awareness among entrepreneurs is one of the key elements in the formation of fundamental solutions for environmental problems towards sustainability.

The phase of industrialization and modernization over the past five decades that has been given no or little attention towards the environment has made SMEs have little knowledge about environmental management and do not understand the concept of environmental management. Therefore, SMEs have difficulty understanding the relationship between environmental management and its benefits to organizations and the environment. In the studied by Hillary (1999) in the United Kingdom, negative corporate attitudes towards EMSs and narrow-minded company culture would impede environmental management system (EMS) implementation. At the same time, she found SMEs had a lack of awareness of environmental legislation. The complexities of legislation made further confused matters and deterred the business from fully grasping the implications and many of the SMEs thought that their impact on the environment was minimal and therefore did not realize the extent to which environmental legislation affected them (Stuart, 2000). As a result, many SMEs were reactive rather than proactive when dealing with the environmental issues. There seemed to be lack of awareness and lack of information on waste minimization technologies (Howes, 1997). It also recognized by Smith (1997) that the importance of raising the awareness of environmental issues in the SME sector.

The introduction of a pro – active 'green' strategy within SMEs described by Bianchi and Noci (1998) is problematic and hard to be implemented for two major reasons (i) it requires resources and skills that, in many cases, are not available in SMEs (ii) at present it can hardly be justified from an economic and a competitive viewpoint, since management has to invest significant financial resources (such as new equipment, training, creation of new skills etc), without any certain return in the short term. It must be remembered that most customers do not yet wish to pay a premium price for environmentally friendly products so it is very difficult for SMEs to publicize their efforts in the environmental

field. Then, Al-Rabaani et al., in 2009 examined the relationship between student's attitudes and their willingness to take action to reduce environmental problems like energy problems, water problems, air pollution problems, waste problems and desertification problems. They found that students were willing to take action to reduce environmental problems and it was not affected by gender or faculty.

In the other studied, Taylor et al. (2003) surveyed a range of business managers from both manufacturing and service sectors and found that most of the managers believed that environmental issues affected their business. Managers of SMEs have been found to see benefits of reducing their businesses environmental impacts, but the financial performance of their business remains the top priority (Petts et. al., 1998b) Petts et al. (1998b) used questionnaires and focused groups to investigate SMEs environmental responsiveness and found that the environment was seen as having a potential business benefit in all companies. This idea was summed up by one of the study's participants with a director of one of the SMEs, stating that the managers doing business and would be pleased if can do something positive for the environment. In each of these SME there was a "green champion" for someone who was highly motivated to make their business more environmentally responsible, each of these champions in the study spoke about personal environmental interests and beliefs but remained focused on business benefits as the primary motivation (Frost, 2011).

According to Russo and Fouts (1997) environmental regulation is seen as an opportunity rather than threat managers might be able to solve problems creatively and identify and adopt innovative technologies and also to develop relationship with stakeholders (Sharma and Vredenburg, 1998). Berrone and Gomez-Mejia (2009) showed that managerial perceptions of the importance of environmental regulation as a competitive opportunity are associated with a more proactive stance on environmental commitment.

#### 4. Research Methods

This research drawn samples from population of batik entrepreneurs provided by Perbadanan Kemajuan Kraftangan Malaysia Kelantan State (PKKM, 2014). Informants of study consisted of batik entrepreneurs who have premises in Kota Bharu and Bachok. All the interviews were conducted in September 2014.

An interview protocol was used to facilitate interviews. In the early part of interview protocol consist

of questions regarding to entrepreneurs background and premise profiles. In the second part consists of entrepreneur awareness of batik industry and the environment. Questions related to the effects of batik industry on the environment, environmental policies and regulations, awareness on environmental issues and health and safety. The following questions related to entrepreneur's perceptions on batik industry and the environment. Amongst other questions: views on the relevance of business and the environment, green business for prospects, environmental laws and interdependence of business and the environment.

The interviews were conducted between 30 minutes to 1 hour at the batik premises. All the interviews were audio-taped with the consent of batik entrepreneurs. The data obtained through interviews with the entrepreneurs were then transferred to word processor verbatim.

The analysis of data was done manually. Coding the questions was based on interview protocol construct. The respondents were namely Informant A, Informant B and Informant C.

The results of the analysis of interviews data presented in the form of a narrative form.

## 5. Research Findings

### 5.1. Demography

Out of three informants, A and C are male, and B is female. As far as the highest educational level is concerned, informants education varies, informant A earned diploma, whereas informants B and C respectively SPM and SRP. The informant A was the youngest, age 27 years old, both informants B and C were in the middle ages – mid forties. Informant A quite new in batik industry, only 6 years compared with informant B and C who involved in the industry for almost 2 decades. Both informants A and B yet to have any children, informants C had 5 children. In terms of number of employees, both informants A and B had employees and informant C had 10 employees. Judging from the number of employees, it can be said all of them were in category of small business. Start-up capital amongst informants varies, the lowest one was informant C who parlayed on RM200 almost 20 years ago. This is followed by informant B who spent RM2,500 and informant A who spent 4 times higher than informant B. When one of the researchers asked all the informants of the last reconstruction of their premises, all the informants admitted that they did not. Table 1 shows a background of informants and their batik premises.

**Table 1:** Background of informants and their business

Informant	A	B	C
<b>Respondent Profile</b>			
Gender	Male	Female	Male
Highest educational qualification	Diploma	SPM	PMR
Age	27 years old	43 years old	47 years old
Years in current job	6 years	15 years	17 years
Number of children	-	-	5 persons
<b>Business Profile</b>			
Number of employees	5 persons	5 persons	10 persons
Capital to run the business	RM10000	RM2500	RM200
Years in operation	1-5 years	1-5 years	More than 10 years
Last substantial reconstruction of premise	2009	2011	2004

## 5.2. Environmental Awareness

When the informants were asked if their industry had negative effects on the environment, two of them (A and C) claimed that their batik business industry had negative effects on the environment. Informant B was unaware that their businesses had negative effects on the environment.

Informant A and C that awareness of environmental effects of batik industry admitted that the effluent of batik that contains marooned-colors and soda silicate discharge, and waste of batik wax contributed water pollution and soil contamination. The environmental issues in batik industry cause the death of flora and fauna, have skin problems like allergic, sensitive and itchy skin effected by coloring and batik waxes. In addition, people suffering from burns caused by hot materials.

When the informants were asked what are the major activities carried out that effect the environment by batik firm during the manufacturing process, they said came from major activities - *canting* and coloring. These two informants knew that waste water that contains sodium silicate that dissolved with water need to be properly discharged into the drains.

Instead the unconscious owner-manager (Informant B) argued that the discharge of her batik industry was good environmental issues can be demonstrated by the following quote :

*“No, because the water flowing near this premise causes the grass to grow and the materials used are natural..” (Informant B)*

When the interviewee tried to reconfirm of types of natural materials (especially dyes) that informant B used in batik process, she said she used the same materials in batik industry. Her answer failed to justify what she claimed.

Referring to the acts and policies that already set by the government, all the informants had no knowledge, for example Informant C said that he did not know and not clear enough about the acts and the environmental policies related to batik industry. He uttered the following words:

*“ ..Applicable environmental laws?...unclear (to me) ..” (Respondent C)*

When, all of the informants were asked about recycle of use waxes they were aware about it, they used them to light fire for boiling the batik fabrics. They did not sell the used waxes but they recycled the waxes.

Air pollution is another issue in batik industry. All respondents aware that air pollution was occurred during *chanting* process wax is burned and fabric is soaked with boiling water to remove the molten wax. Usage of fire created air pollution.

When the informants were asked about health and safety issues of *chanting* batik, informant A agreed that the wax can be dangerous to the safety of workers, beside that, all of them agreed that during the process of dyeing and wax melting affect the health of workers like shortness of breath and sore eyes due to direct exposing to smoke. As a solution, they said they used masks to prevent such a problem. For example of informants said:

*“ I know..... (We) cover our noses using masks...during the launching of a green batik program, we were given these equipments (masks)..” (Respondent A)*

*“ If they (workers) want to melt the wax for canting / painting (they) put on masks..” (Respondent C)*

Informant A and C also did not realize that the nails on the frame of the woods for chanting exposed them to danger. Nails caused minor injury if employees not careful enough, sometimes children who come to the workplace would also expose to the danger.

### 5.3. Environmental Perception

Overall, owner-managers have positive perceptions to general questions concerning on environmental issues. When the interviewees were asked about their views on the relevance of business and the environment, Informant B and C gave positive perceptions. They said that it is good for them to practice environmentally-friendly business because it could reduce the crucial problem arises from batik industry. Informant C said:

*“...It can reduce environmental problems due to environmentally friendly the batik industry ”(Respondent C)*

Based on the information received, it is good if relate business and environment for batik because natural materials used will cause colourfastness, consumers does not have skin problems and the flora and fauna were not dead. Respondent B elaborated at length:

*“ Good, because if use natural materials for fabrics..the fabric does not fade colors and have comfort to wearing the cloth. If the dye's use will cause the colors to fade easily, and fabric used is uncomfortable. It is depending on the color. That's not suitable for our environment because plants die.... ” (Respondent B)*

All informants had positive view about the need of green businesses in their future business. All of them were interested in doing green business if given the opportunity. They stated that green business should be done in the future to mitigate environmental problems such as water and air pollution. Furthermore, green business can prevent those who involved in the batik industry to treat their batik and not discharge effluents directly into water systems including rivers.

At the same time, all the informants were asked about if it necessary environmental laws more stringent in the management of their business premises. They said that environmental laws were important for their safety because there were a few entrepreneurs are ignorance of the law and disregard safety. They added that the government authority needs to monitor and tighten up the laws that already exist for greener environment in the future.

### 6. Conclusions

This study shows that the level of awareness towards the environment was quite mixed. Not all entrepreneurs have high knowledge about the relationship between batik industry and the environment. One clear indication of this was environmental effects of batik discharge that contains heavy mineral were not treated as dangerous. Although DOE and scientists admitted that untreated batik discharge cause water pollution, one of

batik entrepreneurs did not know this issue, and tried to underplay this issue. However, informants had positive perceptions about ways of handling environmental issues. Environmental awareness programs that have been organized by the Department of Environment provided valuable information about green batik industry.

The results of this study show that batik entrepreneurs had little or insufficient knowledge about green batik. Therefore, more comprehensive programmes that inculcate environmental knowledge should be applied to all batik entrepreneurs, especially on what environmental issues exacerbated by batik industry and, how batik goes green to ensure clean production in the future prospects.

### References

- Al-Rabaani A, bin H and Al-Mekhlafi SS Mohammed (2009). Attitudes of Sultan Qaboos University Students towards some environmental problems and their willingness to take action to reduce them. *Journal of Social Sciences* 5(1) 9-15.
- Atkinson, P. E. (1990). *Creating cultural change: The key to successful TQM*. London, UK: IFS Publications.
- Bianchi,R. and Noci, G (1998). “Greening” SMEs’ Competitiveness, *Small Business Economics*(11),269-281.
- Berrone., P. Gomez-Mejia, L.,R, (2009). Environmental Performance and executive compensation : an integrated agency-institutional perspective. *Academy of Manegement Journal* 52(1), 103-126.
- Bubna-Litic, K. and L. de Leeuw: (1999). Adding the Green Advantage: A Survey of Australian SME’s. Paper Presented at Ecobiz 99, The Business and the Environment Conference, Sydney Businesses: An Empirical Study’, S.A.M. *Advanced Management Journal* 68(2), 23–32.
- Debby F.M (2008). Environmental Behaviour in Chicago Automotive Repair Micro-enterprises (MEPs). *Business Strategy and the Environment*, 17, 194-207.
- Deegan, P.E. (2010). A description of a web application to support shared decision making. *Psychiatric Rehabilitation Journal*, 34(1):23-8
- Department of Environment Kelantan Annual Report 2011.
- Faizah, N. & Rafi (2014). *Green Model in Batik Industry – A Strategy for Sustainability in Craft Industry in Malaysia*. Corporate Social Responsibility : Business & Societal Perspective. ISBN 978-163041604-1.
- Friedman A.L & Miles S. (2001). SMEs and the Environment: Two case studies, *Eco-Management & Auditing*, 8, 200-209.
- Frijns, J., P. T. Phuong, et al. (2000). Ecological Modernisation Theory and Industrialising Economies: The Case of Viet Nam. *Environmental Politics*, 9(1): 257-294.
- Frost, A. (2011). *Going Green : Prospects For Smes To Attain Iso 14001 And The Challenges They Face In The Process* Doctor of Philosophy challenges they face in the process, (June), 1–231.
- Gadenne, D.L., Kennedy J., & McKeiver, C. (2009). An Empirical Study of Environmental Awareness and Practices in SMEs. *Journal of Business Ethics*, 84, 45-63.
- Gerrans, P. A. and W. E. Hutchinson: 2000, ‘Sustainable Development and Small and Medium-Sized Enterprises: A Long Way to Go’, in R. Hillary (ed.), *Small and Medium-Sized Enterprises and the Environment:Business Imperatives* (Greenleaf Publishing, Sheffield, UK), pp. 75–81.
- Groundwork (1995). *Small Firms and the Environment*. Birmingham, Groundwork Foundation.
- Guirdham, M. (2010). Environmental management strategy for small and medium-sized enterprises: Why do SMBs practice environmental management? *Asian Business & Management*, 9(2), 265–280. doi:10.1057/abm.2010.6

- Harvey, D. (1994). Performance measurement: the new agenda. London: Business Intelligence.
- Hillary, R. (1999) Evaluation of Study Reports on The Barriers, Opportunities and Drivers for Small and Medium Sized Enterprises in the Adoption of Environmental Management Systems. Report submitted to Department of Trade and Industry Environment Directorate on 5th October 1999.
- Hillary R. (2004). Environmental management systems and the smaller enterprise, *Journal of Cleaner Production*, 12, 561-569.
- Howes, S. (1997). Integrated Pollution Control, Clean and Competitive? In motivating Environmental Performance in Industry, Earth scan, London. [Http://ijes.or.jp/APEIS/RSIPO/spo/pdf/overall/3.5.2\\_sme.pdf](http://ijes.or.jp/APEIS/RSIPO/spo/pdf/overall/3.5.2_sme.pdf)
- Lee, K.: (2000) Strategic Corporate Change Towards Sustainable Enterprise in the Environment Era. Proceedings of the Business Strategy and Environment Conference (European Research Press, Shipley), pp. 271–278.
- McClatchy (2011). Switch to 'green' batik. *Tribune Business News*, 6 October 2011.
- Md Noor, N.L. & Nordin, A. (2012). Requirements Elicitation for the Technology Conception of a Community Information System for the Indigenous Microenterprise: A Contextual Multi-Analysis Approach on Business and Community Requirements of Batik Making. *The Electronic Journal Information Systems Evaluation*, 15; 102-115.
- New Straits Times, 12 July 2013
- Petts, J., A. Herd and M. O'hEocha (1998). Environmental Responsiveness, Individuals and Organizational Learning: SME Experience, *Journal of Environmental Planning and Management* 41(6), 711–731.
- Robbins, P. T.: (2001). *Greening the Corporation* : Earthscan Publications, London, UK.
- Rowe J., D. Hollingsworth (1996) Improving Environmental Performance of SMEs, *Eco-Management and Auditing* 3, 97–107
- Russo, M.V, Fouts, P.A (1997) A resources-based perspective on corporate performance and profitability. *Academy of Management Journal* 40, 534-559.
- Schaper, M. (2002). Small firms and environmental management: Predictors of green purchasing in Western Australian pharmacies. *International Small Business Journal* 20(3): 235-249.
- Sharma, S. and Vredenburg, H. (1998). Proactive Corporate Environmental Strategy and the development of competitively valuable organizational capabilities. *Strategic Management Journal* 19, 729-753.
- Smith, M. (1997). Stimulating environmental action in Small to Medium-sized Enterprises, *Environmental Management Systems and Cleaner Production*, Wiley: Chic ester.
- Sonnenfeld, D. A. (2000). Contradictions of Ecological Modernisation: Pulp and Paper Manufacturing in South-East Asia. *Environment Politics*, 9(1): 235-256.
- Stuart, R. (2000). Environmental Management Systems in the 21<sup>st</sup> Century. *Chemical Health and Safety*, 7(6), 23-25.
- Tomomi, T. (2009). Environmental Management Strategy for Small and Medium-Sized Enterprises: Why do SMBs Practice Environmental Management? *Asian Business & Management*, 9: 265-280.
- Taylor, N., Barker, K., & Simpson, M. (2003). Achieving sustainable business: a study of perceptions of environmental best practice by SMEs in South Yorkshire. *Environment and Planning C: Government and Policy*. 21: 89-105.
- Tilley, F. (1999b). Small Firm Environmental Strategy. *Green Management International*, 25, 67-80.
- Tilley, F. (1999a). The gap between the environmental attitudes and the environmental behavior of small firms. *Business Strategy and the Environment* 8(4):238.
- Tonami Aki & Mori Akihisa (2007). Sustainable Development in Thailand Lessons From Implementing Local Agenda 21 in Three Cities, *The Journal of Environment Development*, 16, 269- 289
- Welford, R. & Gouldson, A. (1993). *Environmental management and business strategy*. London: Pitman.
- Welford, R. (1994a). *Cases in environmental management and business strategy*. London: Pitman.
- Welford, R. (1998). Introduction to Business and the Environment. In Welford, R., & Starkey, R (eds) (1998) *Business and the Environment*. London: Earthscan.
- Yaacob, (2000). An Investigation of the Malaysian Palm Oil Industry's Environmental Strategies, Stakeholders' Pressure, Environmental Effectiveness and Competitive Advantage. PhD thesis. University of Newcastle, NSW, Australia.
- Yaacob, M.R., Mahmood, R & Nik Ismail, N.R. (2007) *Perniagaan Kitar Semula -Kajian Awal Pengusaha PKS di Kelantan*. Paper presented at the Persidangan Kebangsaan Industri Kecil & Sederhana, Kota Kinabalu Sabah, Malaysia, December 4-5.
- Yaacob, M.R. (2010). Small enterprises environmental management practices in Terengganu, Malaysia. *Gyan Management*, Vol.4(1), pp. 2-14.
- Ziadat A. H. (2010). Major factors contributing to environmental awareness among people in a third world country/Jordan, *Environ Dev Sustain*, 12,135 – 145.