



UNIVERSITI PUTRA MALAYSIA

***THE INDIVIDUAL AND ORGANIZATIONAL PREDICTORS OF
PERCEIVED ENVIRONMENTAL PERFORMANCE AND THE
MODERATING ROLE OF ORGANIZATIONAL CULTURE AMONG
THE EMPLOYEES IN MALAYSIAN ISO 14001 CERTIFIED
MANUFACTURING COMPANIES***

MARYAM HAJIKHANI

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By

MARYAM HAJIKHANI

**Thesis Submitted to the School of Graduate Studies, Universiti Putra
Malaysia, in Fulfillment of the Requirements for the Degree of
Doctor of Philosophy**

March 2015

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DEDICATION

This thesis is dedicated to my husband, Mahdi Izadi, and my sons Siavash and Sepanta for their inestimable contributions in my life



Abstract of thesis presented to the Senate of Universiti Putra Malaysia
in fulfillment of the requirement for the degree of Doctor of Philosophy

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March 2015

Chairman : Nor Wahiza Abd. Wahat, PhD
Faculty : Educational Studies

There are empirical evidences that show the importance of human resource and its associated factors in companies' environmental performance improvement. However, as the results of these studied show, not much attention has been given to the specific areas of human resource development such as management leadership style, employees work motivation, employees' environmental training and their specific organizational citizenship behavior towards the natural environment (OCBE) with regard to their contribution to the organizational environmental performance, in particular in developing societies like Malaysia. Accordingly, this study is set to develop an inclusive model of the antecedents of a firm's perceived environmental performance in presence of organizational culture as a moderating variable.

In this study, an integrated model of the theories of socio-technical system (STS) and resource-based view of firm (RBV) were applied to explain the research framework. STS approach generally talks about the importance of technical and social parts of an organization in achieving the system's goals and objectives. Based on STS, in presence of the technical part, specific consideration needs to be paid to the social part parameters, in order to increase efficiency and performance of the organization. Thus, according to STS the factors of leadership style, motivation, environmental training, OCBE as the parameters of the social part have contribution to the organizational performance. RBV generally stands for the importance of the three kind of resources of an organization including, tangible, intangible and organizational related resource in achieving company's efficiency and competitiveness. Moreover, based on RBV a company's organizational related resource (i.e. organizational culture) can increase or decrease the effects of other resources on company's performance. Thus, it could be stand for the moderating role of organizational culture on the relationship between the mentioned predictors in this study and perceived environmental performance.

The present study was completed through a survey on 309 employees (knowledgeable and involved in company's green issues) from 17 ISO 14001 certified manufacturing companies throughout the Malaysia. The ISO 14001 certified manufacturing companies have been chosen as they are supposed to apply green

practices and improve and maintain their environmental efficiency and performance. Doing so, the SEM method was applied to gain the best-fitted model. The goodness of fit measures indicates a satisfactory fit of the hypothesized model. As a result, the model was able to clarify the relationship between independent (exogenous) variables (work motivation (intrinsic, extrinsic), leadership style (transformational, transactional), organizational citizenship behavior towards the environment (OCBE) and environmental training) and perceived environmental performance of the mentioned companies. It also explains the moderating role of organizational culture on the relationship between aforementioned variables and perceived environmental performance.

Testing of the proposed hypotheses was done using the correlation coefficients and structural equation modeling (SEM). The final results of this study indicated that there are significant positive relationships among the intrinsic motivation, transformational leadership, organizational citizenship behavior towards the environment (OCBE), environmental training and perceived environmental performance. Transactional leadership style and extrinsic motivation were also significantly associated with perceived environmental performance in presence of organizational culture. Also, the results show that the proposed model is able to explain about 68% of variance of perceived environmental performance ($R^2 = 0.68$).

One important finding of this research is that the three types of the CVF model of organizational culture applied in this study (Clan, Adhocracy, and Market), generally moderate the relationship between aforementioned independent variables and perceived environmental performance. Therefore, companies' managers, policy makers and practitioners should consider their organizational culture to be favorable and enhancing, when they are practicing green initiatives to increase their environmental performance. The results show some characteristics of organizational culture moderate and reinforce the effects of human resource on the company's perceived environmental performance.

In conclusion, the findings shows that intrinsic motivation, transformational leadership, organizational citizenship behavior towards the environment (OCBE) and environmental training are significant predictors of perceived environmental performance. Moreover, the results have contribution to theory and practice. The findings contributed to the body of knowledge by supporting and expanding the theories of STS and RBV through proposing and integrating of the two theories. It also contributed to the body of knowledge in the area of organizational culture as a moderating variable, work motivation and leadership style as the study tested the factors by their dimensions. The findings also have implications for practice for the mentioned manufacturing companies, their employees and HRD departments.

Abstrak tesis yang dikemukakan kepada Senat Universiti Putra Malaysia sebagai memenuhi sebahagian keperluan untuk ijazah Doktor Falsafah.

**PERAMAL INDIVIDU DAN ORGANISASI DALAM PERSEPSI PRESTASI
PERSEKITARAN DAN PERANAN MODERATOR DALAM BUDAYA
ORGANISASI DALAM KALANGAN PEKERJA BAGI SYARIKAT
PEMBUATAN YANG MENERIMA PENGIKTIRAFAN ISO 14001 DI
MALAYSIA**

Oleh

MARYAM HAJIKHANI

Mac 2015

Pengerusi : Nor Wahiza Abd. Wahat, PhD
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Bukti empirikal menunjukkan kepentingan pembangunan sumber manusia dan faktor-faktor yang mempunyai hubungkait dengan penambahbaikan prestasi pengurusan alam sekitar organisasi. Walau bagaimanapun, hasil kajian lepas menunjukkan bahawa tidak banyak perhatian ditumpukan kepada bidang tertentu di dalam pembangunan sumber manusia seperti sumbangan gaya kepimpinan pihak pengurusan, motivasi kerja para pekerja, latihan persekitaran para pekerja dan tingkah laku kewargaan terhadap alam sekitar terhadap prestasi pengurusan alam sekitar organisasi, terutamanya di negara sedang membangun seperti Malaysia. Lantaran itu, kajian ini dilaksanakan untuk membangunkan satu model inklusif tentang penyumbang kepada prestasi pengurusan alam sekitar (tanggapan prestasi alam sekitar menumpukan tanggapan anda mengenai situasi syarikat) dengan budaya organisasi selaku pemboleh ubah moderator.

Dalam kajian ini, model bersepadu teori sistem sosio-teknikal (STS) dan pandangan berasaskan sumber firma (RBV) telah digunakan untuk menerangkan rangka kerja penyelidikan. Pendekatan STS umumnya adalah mengenai kepentingan bahagian-bahagian teknikal dan sosial bagi sesebuah organisasi dalam mencapai matlamat dan objektif sistem. Berdasarkan STS, bagi bahagian teknikal, pertimbangan khusus perlu diambil kira pada sebahagian parameter sosial untuk meningkatkan kecekapan dan prestasi organisasi. Oleh itu, menurut STS, faktor gaya kepimpinan, motivasi, latihan alam sekitar dan OCBE sebagai parameter bahagian sosial mempunyai sumbangan kepada prestasi organisasi. RBV umumnya bermaksud kepentingan tiga jenis sumber sesebuah organisasi termasuk, ketara, tidak ketara dan sumber organisasi yang berkaitan dengan mencapai kecekapan dan daya saing syarikat. Selain itu, berdasarkan RBV sumber berkaitan organisasi (iaitu budaya organisasi) syarikat boleh meningkatkan atau mengurangkan kesan daripada sumber-sumber lain mengenai prestasi syarikat. Oleh itu, ia boleh menjadi suatu pendirian untuk peranan moderator dalam budaya organisasi pada hubungan antara peramal yang disebut dalam kajian ini dan persepsi prestasi alam sekitar .

Kajian ini melaksanakan survei ke atas 309 pekerja (yang berpengetahuan dan terlibat di dalam isu alam sekitar) di organisasi yang telah memperoleh sijil 17 ISO

14001 di Malaysia. Organisasi tersebut dipilih kerana mengamalkan, menambahbaik dan mengekalkan efisiensi dan prestasi pengurusan alam sekitar. Kaedah 'Structural Equation Modelling' telah diaplikasikan untuk memperoleh model 'best fitted'. Keputusan model menunjukkan bahawa wujud hubungan antara pemboleh ubah bebas ('exogenous') iaitu motivasi kerja (intrinsik dan ekstrinsik), gaya kepimpinan (transformasi dan transaksi), tingkahlaku kerja kewargaan terhadap alam sekitar dan latihan tentang alam persekitaran di organisasi yang terlibat. Ia juga menerangkan peranan moderator budaya organisasi di dalam hubungan antara pemboleh ubah tersebut dengan persepsi prestasi pengurusan alam sekitar.

Ujian ke atas hipotesis telah dilaksanakan menggunakan analisis korelasi koefisien dan 'structural equation modelling' (SEM). Keputusan akhir kajian menunjukkan bahawa wujud hubungan positif dan signifikan antara motivasi intrinsik, kepimpinan transformasi, tingkah laku kewargaan terhadap prestasi pengurusan alam sekitar. Gaya kepimpinan transaksi dan motivasi ekstrinsik juga mempunyai hubungan yang signifikan dengan persepsi prestasi pengurusan alam sekitar, dengan kehadiran budaya organisasi sebagai budaya organisasi. Selain itu, keputusan turut menunjukkan bahawa model tersebut menjelaskan 68% varians bagi persepsi pengurusan prestasi ($R^2 = 0.68$)

Keputusan utama daripada kajian ini menunjukkan bahawa ketiga-tiga model budaya organisasi CVF yang diaplikasikan di dalam kajian ini ('Clan', 'Adhocracy', dan 'Market'), secara amnya merupakan moderator bagi hubungan antara pemboleh ubah bebas di atas dengan persepsi prestasi pengurusan alam sekitar. Oleh itu, pihak pengurusan organisasi, penggubal polisi dan pengamal pembangunan sumber manusia patut memberikan perhatian kepada budaya organisasi apabila mereka melaksanakan inisiatif hijau bagi meningkatkan prestasi pengurusan alam sekitar. Ini adalah kerana keputusan kajian menunjukkan bahawa sesetengah ciri budaya organisasi menjadi moderator dan mempengaruhi sumber manusia di dalam prestasi pengurusan alam sekitar (prestasi alam sekitar) di organisasi terlibat.

Kesimpulannya, keputusan menunjukkan bahawa motivasi intrinsik, kepimpinan transformasi, tingkah laku kewargaan terhadap prestasi pengurusan alam sekitar dan latihan persekitaran adalah peramal yang ketara dalam persepsi prestasi persekitaran. Selain itu, hasil kajian menyumbang kepada teori dan praktikal. Hasil penemuan menyumbang kepada badan pengetahuan dengan disokong dan dikembangkan dengan teori STS dan RBV melalui cadangan dan model bersepadu kedua-dua teori. Ia juga menyumbang kepada badan pengetahuan dalam bidang budaya organisasi sebagai pemboleh ubah sederhana, motivasi kerja dan gaya kepimpinan sebagai kajian menguji faktor oleh dimensi mereka. Hasil kajian juga mempunyai implikasi bagi amalan untuk syarikat pembuatan yang dinyatakan, pekerja dan jabatan HRD.

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I certify that a Thesis Examination Committee has met on 17 March 2015 to conduct the final examination of Maryam Hajikhani on her thesis entitled " The Individual and Organizational Predictors of Perceived Environmental Performance and The Moderating Role of Organizational Culture Among The Employees in Malaysian ISO 14001 Certified Manufacturing Companies" in accordance with the Universities and University Colleges Act 1971 and the Constitution of the Universiti Putra Malaysia [P.U.(A) 106] 15 March 1998. The Committee recommends that the student be awarded the Doctor of Philosophy.

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CHAPTER I

INTRODUCTION

1.1.Introduction

This chapter starts with background of study, statement of the problem, research objectives; it also discusses the significance, assumptions and limitations of the study. The present study aims to determine the role of the individual and organizational factors on the perceived environmental performance of ISO 14001 certified manufacturing companies in Malaysia. Further, this study examines the moderating role of Organizational Culture (OC) on the relationship between the mentioned factors and perceived environmental performance.

1.2.Background of the Study

Nowadays, from the societal perspective, firms are increasingly pressured by numerous stakeholders to engage in social and environmental responsibility. According to DesJardins (2007), ecological sustainability could become the central social responsibility challenge for business. In the same way, concerns to a more sustainable development, the term triple P – or People, Planet, Profit has been coined to likewise point to the need for managers to focus concurrently on the social, environmental and economic dimensions of corporate activity, in order to help shape the (sustainable) future of societies worldwide (Crane& Andrew, 2013; Kolk, 2009; Van Tulder with Van der Zwart, 2006).

Contributors to the 2008 Oxford Handbook of Corporate Social Responsibility (CSR), they equate CSR with community involvement, philanthropic donations, good corporate governance, implementation of “green” policies, and a wide variety of other organizational actions (Orlitzky, 2011). Based on the research, implementing green policies to increase the firms’ environmental performance is one of the major activities among the different forms of corporate social responsibility.

A theoretical foundation that can explain the CSR concepts is resource-based view of the firm (RBV) (Barney, 1991). According to this theoretical perspective, if organizational resources and capabilities are valuable, rare, inimitable, and non-substitutable, they will form the source of an organization’s competitive advantage (Orlitzky, 2011). Grounded on this theory, CSR strategy can be formulated to achieve and (possibly) sustain a competitive advantage (Walker, 2013). Indeed, CSR can be employed as a differentiation strategy at the product, business, and corporate levels in order to achieve competitiveness (Orlitzky, 2011).

Indeed, one of the main aspect of CSR initiatives is to protect the natural environment by increasing the firms' environmental efficiency and performance. Research on CSR and environmental sustainability in the management literature is converging because of shared environmental, economic, and social concerns (Montiel, 2008). Thus, in the firm's level, managers must be able to determine how their organizations can become more socially responsible, ecologically sustainable, and economically competitive (Orlitzky& Waldman, 2011).

Increasing Environmental pollution due to expansion of the companies' production and consumption, interrelated nature of companies' production and global environmental situation are the leading factors that force companies to change their spots to deal with the ecological aspect. It is because they are directly and indirectly in charge with most environmental degradation and pollution take place worldwide; implying that they hold critical role to play in environmental protection (Koen Rademaekers, 2012). Indeed, they are central players in the public regarding to increase efficient use of natural resources, by increasing re-use and recycling and reducing waste result in reducing the natural resource consumption. Thus, they are forced to take steps towards proactive environmental management, which is developed by a course of action guided by the management of products, productive processes and strategies. Consequently, it leads to prevent the emergence of environmental problems which results in environmental performance improvement. Thus, the need for protecting the natural environment (such as waste minimization, pollution prevention, energy conservation and health and safety issues) has been raised in today's global market.

1.2.1. Environmental Performance

Generally, the environmental performance of a firm is the firm overall impacts on the natural environment, and typically the term 'impact' explains changes in the natural environment (Olsthoorn& Tyteca, 2001). It contains the environmental impacts of resources used by the firm, the environmental effects of the organizational production and process, the ecological results of the company's products and services. Usually, companies' environmental approach to reduce their environmental impact can be grouped into two main categories including: control (managing emissions once released) and prevention (adopting new innovative technologies, product or process that reduce the level of emissions) (Daily& Huang, 2001; Fernández& Junquera, 2003; Del Brío& Junquera, 2008). Environmental performance achieved by each of the approaches is different. In the control approach, environmental practices are undertaken to improve environmental performance (or environmental efficiency) only in compliance with regulations imposed. They manage emissions and waste (already produced) from causing negative impacts on the natural environment. This method is costly and usually unproductive as do not create value (Andersson & Wolff, 2008). In contrast, when a company's main objective of adopting environmental practices is to prevent producing these kinds of waste and emissions. In this case, the company's environmental impacts decrease or environmental efficiency improves and will result in customer satisfaction and better corporate image (Azzone & Noci 1998). Improving environmental performance by adopting the more advanced and potentially profitable preventive approach requires a strategic component. It particularly needs the integration of environmental strategy into the company's business strategy (Cordano & Frieze 2000). Moreover, according

to Boiral, increasing a firm's environmental efficiency by adopting such advanced approach also needs major changes in the organization of the company and coping with opposition of stakeholders (Boiral, 2002). Human resources, organizational culture and skills required to deal with initiative in this field have to reveal such changes (Russo & Fouts, 1997). Improving environmental performance through adopting preventive programs also entails a different approach in the business strategy. In particular it needs personnel-intensive strategies. Such strategies are manifested in developing workers' tacit knowledge through their participation in and commitment to the learning programs and green teams (Cordano & Frieze, 2000; Madsen & Ulhøi, 2001). In this sense, for example Hall (1992) confirmed that organizational culture, reputation and employee competence are considered the most vital basis of the company's success especially in environmental issues (Hall, 1992). Moreover, some scholars have mentioned that weak and inefficient corporate culture may create an atmosphere leading to weaknesses in human resource management. Thus, contextual factors such as organizational culture can increase the effectiveness of human resource part in practicing environmental efforts. Accordingly, both an inefficient human resource and weak organizational culture can be the main obstacles to the implementation of corporate environmental initiatives (Klassen, 2000). In this sense, even though the past research shows the importance of corporate culture and human resources, still the empirical studies on the nature and extent of this relationship is scarce (Daily & Huang, 2001; Fernández & Junquera, 2003; Del Brío & Junquera, 2008).

Moreover, companies in the way of adopting a preventing approach to increase their environmental efficiency, need to establish and maintain environmental management within the company. In this way, different dimensions of human resource have been frequently mentioned as fostering or hindering factors in maintaining a preventive environmental management (Hillary, 2004; Jabbour & Santos 2008; Jabbour & Jabbour, 2012). Environmental management consists of technical and organizational activities carry out by a company in order to reduce environmental impacts and shrinking their effects on the natural environment (Cramer, 1998). The outcome of environmental management would be environmental performance (Klassen & Whybark, 1999; Henri & Journeault, 2008; López-Gamero & Molina-Azorín, 2009; Chen & Tang, 2014). Pressures that are considered to be factors convincing companies to implement environmental management are diverse in nature. They are encompassing, increasing public awareness, company's stakeholder pressures, legal requirements due to international and domestic environmental regulations and company's internal motivations to achieve sustainable development and thus competitive advantages. It means environmentally sound production by reducing the operational cost, increasing the brand image can diminish the ecological impacts of business, while increases efficiency, creates the potential source of competitive advantages in an innovative manner.

Such competitiveness resulted from increasing environmental performance and efficiency of a firm, may be based on:

- Building a positive brand image, using greening as a "unique" advantageous selling point for those environmentally conscious customers

- Leveraging innovation, innovative product design, in order to easier dis-assembling. This process has lower assembly time that is because of smart connectors of products
- Cost- saving (efficiency) perspectives, reducing the raw materials, resource usage per products, leading to cost saving. Using less fuel for instance by reducing tracking miles not only lowers energy and emissions usage but also saves on fuel expenses (Testa, Iraldo, 2009)

Based on the aforementioned theory of RBV, all the above mentioned advantages created and achieved could be consider as the unique and hard to imitate resources of an organization. Thus, these exclusive valuable resources are the potential source of competitive advantage for their organizations (Walker, 2013)

By adopting environmental management, firms start to observe and manage the impact of their operations on the natural environment (managing their environmental performance). This process mostly arises in the operational level in which firms seek and adopt different environmentally sound ways of doing current operations on their production line. Indeed, it aims to reduce the amount of emissions and waste generated, while saving cost at the same time. In doing so, they practice recycling production materials, replacing environmentally hazardous materials and using returnable or reusable materials in different parts of production, packaging for example. This approach also is famous as “3-Re s” (Hofer& Cantor, 2011).

There are different environmental practices and environmental management standards that are adopted throughout the world. The Eco-management and audit system and ISO 14000 series are classic examples. The standards considered to help organizations to expand their proactive environmental management intend to evaluate and advance their ecological and safety performance apart from of their size and business nature (Hui, Chan, 2001). Taking into account the environmental management has become vital for the survival of companies, scholars have to study the organizational factors that favor the internal decisions of companies in the area of green initiatives (Jabbour& Santos, 2006).

Among the several tools intended to implement the environmental management in companies, environmental management systems (EMSs) must be highlighted. The term “system” could be defined as an integrated set of elements, which function in a synchronized and non-chaotic way aim to accomplish a common goal. Therefore, the environmental management system includes the totality of organizational actions which are fulfilled in a systematized manner in order to monitor the ecological effects of its activities, and to handle issues associated with the ecological aspect (Jabbour& Santos, 2006). Indeed, the EMS provides a structure that allows managing and better controlling the company’s environmental performance (Barnes, 1996; Chen & Tang, 2014). In the way of adopting a proactive (or preventive) approach to increase environmental efficiency, there are critical factors considered in the literature of the 1990s from a theoretical perspective or through case studies or empirical (Ashford, 1993; Dieleman& de Hoo, 1993; Post& Altma, 1994; Shrivastava& Hart, 1994). Since the 1990s, different researchers have paid attention to recognizing, organizing and evaluating the major critical factors for firms to increase their environmental performance (Post& Altma, 1994; Hillary, 2004; Chan,

2008; Shi&Peng, 2008; Vidal-Salazar&Cordón-Pozo, 2012). Based on Post and Altman (1994), in the categorization of the key factors contributed to the environmental initiatives, there are a number of industry and organizational factors. Industry factors are relevant to the nature of business activity in which firms are involved, and generally influence companies' function in the most highly polluting parts. Organizational factors still affect firms, regardless of the business activity in which they are involved, as they derive from firms' specific business and regular practices. Industry factors are including competitive forces, industry regulations and technical information; whereas, organizational factors refers to employee attitude, top management leadership and poor communication. As Hillary in 2004 classified them, the organizational factors encompass lack of efficient human recourses, wrong perception of Environmental Management System and pessimistic attitudes and inefficient firms' culture. Chan in 2008, classified these factors as external and internal parts and some of his mentioned internal factors are: understanding and perception, attitude and organizational culture (Murillo-Luna & Garcés-Ayerbe, 2011). Based on Govindarajulu and Daily, except for the technical aspects that always assure the success of this system the human resource dimensions also play an important role (Govindarajulu& Daily, 2004). Hence, the process of environmental efficiency is multifaceted and requires the support of several human resource factors and parts, that can guarantee the accomplishment of this purpose (Jabbour& Santos, 2008). In a study by Hofer (2012), he has mentioned the classification of factors promoting a company's environmental initiatives. He has stated that how individual (i.e. attitude,experience, motivation), organizational (management support and commitment) and external (i.e. competitive pressure) level factors may contribute to the environmental performance of a firm (Hofer& Cantor, 2012). In this case, despite the fact that the importance of the human resources (to maintain a proactive level of environmental performance) has mostly mentioned in these studies, the empirical research thatshows the extent and nature of this relationship is scarce (Fernández& Junquera, 2003; Govindarajulu& Daily, 2004; Jabbour& Santos, 2008).

As mentioned earlier, there are different drivers in industry or organizational level (or external and internal level) of environmental performance. External or industry level factors such as competitive forces, industry regulations and internal or firm level factors such as employee attitude, top management leadership style. In this matter, one area of weakness in the literature is the lack of research connecting individual characteristics of an organization to environmental management and its related outcome environmental performance. In other words, micro-level phenomena (e.g., values and specific behaviors, leadership style and organizational culture) not explicitly considered by green management researchers (Renwick, 2013; Orlitzky, 2011). Moreover, the research indicates that the firm-level competencies (i.e. micro level factors) will better foster the relationship between corporate strategy and sustainable development and competitive advantages (Barney, 1991; Rugman&Verbeke, 2002). Also, based on the RBV, these competencies will be enhanced if there be a good combination of resources that are rare, hard to imitate and non-substitutable. These resources might be the companies' tangible, intangible and related to the human parts such as organizational culture, organizational process and skillful employees. For instance, this study has selected the work motivation (intrinsic, extrinsic) concept as an internal firm, individual level factor, to study it's effect on companies' environmental performance. The importance of work motivation as an important factor that enhance the companies' performance has been

well established in organizational research literature (Van Knippenberg, 2001; Lewin, 2003; Pinder, 2008; Latham, 2011). In this case, based on Guthrie (2001), work motivation is a kind of human resource factors and company's intangible resource that has a contribution to the company's efficiency and performance. In addition, Graves (2010) distinguishes that intrinsic and extrinsic factors may motivate and persuade employees' environmentally sound behaviors which resulted in improvement of environmental performance. Besides, this study chose other firm (micro) level leading factors of perceived environmental performance including the leadership style, OCBE, environmental training and organizational culture as a moderating variable.

Given that environmental management has become essential for the companies trying to reduce their environmental effects, researchers have to study the human resource and organizational factors that favor the success of these practices (Daily& Huang 2001; Jabbour& Jabbour, 2012; Jabbour& Teixeira, 2013). Within the various tools of implementing environmental management in organizations, environmental management systems (EMSs) should be emphasized. The main steps involved in an EMS are comprised of: 1) Environmental policy, 2) planning, 3) implementation and operation, 4) checking and corrective actions, and 5) management review. Indeed, the ISO 14001 (as all the ISO standards) quality management system experts have already embedded specific elements relating to the human resource (i.e. responsibility, training and awareness, culture, leadership style). Although, it indicates the importance of them, still the mentioned issues need to be more investigated in this matter (Jabbour& Jabbour, 2012; Koen& Rademaekers, 2012). As such, the role and contribution of leadership style, work motivation, employees' organizational citizenship behavior towards the environment (OCBE), as well as the organizational culture along with the employees' training need to be more empirically tested (Egri& Herman 2000; Fernández&Junquera, 2003; Govindarajulu & Daily 2004; Zutshi & Sohal 2004; Daily& Bishop, 2009; Daily& Bishop, 2011; Boiral & Paillé 2012). In this case, past research does not clearly indicate that what type of work motivation is more appropriate in this context. Also, do transformational and transactional leadership style have the same place in companies green practices?

With regards to the environmental performance resulted from effectively adopting an EMS, human resources stand out as one of the most important factors (Wilkinson& Dale 2001; Jabbour& Santos 2006; Del Brío & Junquera, 2008). Despite, most research in this area have given their interest to the common human resource factors such as, recruitment and selection, reward system and performance appraisal (Govindarajulu& Daily, 2004; Daily& Bishop, 2009; Daily& Bishop, 2011; Kaur, 2011). Therefore, this study sets out to investigate the role of mentioned micro level factors, on the organizational environmental performance. The study also considered the organizational culture as a moderating variable on the relationship of mentioned factors and perceived environmental performance. Thus, more research need to determine the role of OC on the effectiveness of human resource in this matter. In this sense, past research stated "the most important aspect of cultural research has been the role of organizational culture hindering or fostering the implementation of managerial innovation (i.e. Total quality management, environmental management) (Linnenluecke& Griffiths, 2010),(Fernández& Junquera, 2003), (Chan & Shaffer, 2004)). Furthermore, according to Fernandez (2003) and Chan and Shaffer (2004),

“based on the resource-based view (RBV), the weakness of organizational culture and its shortcoming in effectiveness of human resource is an important obstacle in the process of environmental efficiency”. From the theoretical perspective, most past studies grounded at theories that are comprehensive at the macro level and the micro level antecedents need to be grounded on the theories that mostly center on the individual internal firm factors.

To this end, this study set out to identify to what extent the recognized human resource and organizational factors (i.e. work motivation, leadership style, environmental training, OCBE) contributed to the company’s perceived environmental performance.

This study selected manufacturing sector because, according to the Gamero (2009) different sectors generate different level of environmental pollution and impacts based on their type of activities. Accordingly, the manufacturing part is considered as the most polluting/dirty industry among the sectors such as service (least-polluting) and agriculture (López-Gamero & Molina-Azorín, 2009). Indeed, this sector is faced with more environmental requirements and has a high level of public concern. Thus, companies operating in this sector tend to have more comprehensive environmental management practices in place (Johnstone & Labonne 2009; Gomez & Rodriguez 2011). Furthermore, according to the statistics Malaysia official portal, manufacturing part is the second largest contributor to GDP with 3.3 per cent growth rate in 2013 (after service sector with 4.8 per cent growth rate in 2013).

Moreover, the Competing Value Framework (CVF) model of organizational culture (Cameron & Quinn, 2006) was used in this research as it captures most proposed dimensions of organizational culture and could be considered as a sustainability-oriented organizational culture (given that company’s green practices are considered as organizational sustainable development programs) (Jabbour & Santos, 2008; Linnenluecke & Griffiths, 2010).

This study chose the aforementioned individual and organizational factors because of their frequently mentioned importance in the literature, in promoting companies operational and environmental performance (Fernández & Junquera, 2003; Zutshi & Sohal, 2004; Daily & Bishop, 2009; Murillo-Luna & Garcés-Ayerbe, 2011; Boiral & Paillé 2012; Paillé & Boiral 2013; Paillé & Chen, 2013). The individual factors identified in this study can also be considered the human resource related factors.

1.2.2. Stage of Malaysia in Green Initiatives

Since independence in 1957, Malaysia has taken all endeavors to turn into an industrial nation. Originally, Malaysia economy was agriculture-based. It was based upon Palm oil and rubber in the 1970s - 1980s, and food metal processing and paper production in the 1980s – 1990s. Now it is more developing on heavy industry and electronics (Rao, 2004). Previously not much attention has been given to environmental issues, but currently aligned with the country’s 2020 vision to be a developed economy by that time, environmental issues have become more imperative. For this, the Environmental Quality Act established in 1974 and has been revised a number of times. The country’s guidelines that aim to integrate economic growth with environmental sustainable development are:

- Stewardship of the environment;
- Conservation of nature's vitality and diversity;
- Continuous improvement in the quality of environment;
- Involvement of the private sector; and
- Commitment and accountability, etc.

Moreover, in 2012 world Environmental Performance Ranking (EPI), Malaysia placed in the second group with strong performance, after Belgium, with the rank 62.51. Indeed, EPI has 2 main objectives as environmental health and ecosystem vitality which each of them has different indicators.

1.3.Statement of the Problem

Today due to intensive environmental degradation, companies are confronting imposed environmental regulation. They are forced to manage and reduce their ecological footprint to increase their environmental performance. In this sense, there are macro level research on the antecedents of environmental performance of the companies (Sharfman, 2004; Waldman, 2006; Lim& Tsutsui, 2012; Reimann, 2012; Hartmann, 2015). These studies confirm that the increasing market share, improving the corporate reputation, leveraging the production cost, competitive pressure are the examples of this matter. They also mostly grounded on the institutional and internationalization theories to explain the macro level factors persuading firms to increase their environmental performance. In this matter, one area of weakness in the literature is the lack of research connecting individual characteristics of an organization to environmental management and its related outcome environmental performance. In other words, micro-level phenomena (e.g., values and specific behaviors, leadership style and organizational culture) not explicitly considered by green management researchers (Renwick, 2013; Orlitzky, 2011). Moreover, there are limited theoretical explanation using the mentioned theories on the internal firm leading factors of environmental performance.

The above-mentioned theories are more comprehensive at the macro level and the micro level antecedents need to be grounded on the theories that mostly center on the individual internal firm factors and their contribution on the companies' objectives. Also, most past studies have established their work with combining different levels of analysis in their empirical research. Thus, it is not sound relating their findings to the firm level analyses and research. In this case, there is a need to study in the firm level using the employee's perception with regarding to the corporate green practices. Thus, it is important for companies to consider the internal firm, micro level factors that guarantee their enhanced environmental performance. As such, role of leadership style, work motivation, employees' organizational citizenship behavior towards the environment (OCBE), as well as the organizational culture along with the employees' training need to be more empirically tested (Egri& Herman 2000; Fernández& Junquera, 2003; Govindarajulu& Daily 2004; Zutshi& Sohal 2004; Daily& Bishop, 2009; Daily& Bishop, 2011; Boiral& Paillé 2012). Past research confirm that based on the RBV, organizational culture serves to mobilize, allocate and leverage resources in achieving company goals. Despite growing research interest in the importance of HR in the area of companies' efficiency and performance, the understanding of the relationship between HR, culture fit is still

very limited. For instance, what relationship exists between culture and HR practices, factors and how do they combine to strengthen an organization's performance and competitive advantage?

Indeed, there is not a common agreement on the type of the appropriate organizational culture specifically in the area of corporate environmental efficiency and performance (Chan, 2004; Naor, 2014).

In this sense, it is not clear that which types of culture enhance or inhibit the effectiveness of a firm's capabilities and resources in achieving the corporate objectives. Besides, it is not clear that what specific characteristics the culture should have to enhance the efficiency of resources to improve the firm performance. Moreover, there is not enough empirical studies showing that how the different types of organizational culture can foster or hinder the effect of intangible resources (i.e. human resource) in accomplishing environmental practices. Indeed, what is not clearly mentioned is the type of interaction between organizational culture and HR system in attaining the organizational objectives (Klassen, 2000; Fernández&Junquera, 2003; Jabbour& Santos, 2008; Chow, 2012). Thus, this study attempt to answer the questions by including organizational culture and examines the interaction effects of HR-culture (the mentioned predictors of the study as HR factors) on firm performance.

The study has integrated socio-technical system theory (STS) and resource-based view of the firm (RBV) approach to explain the hypothesized relationship between the aforementioned Independent Variables (IVs) and Dependent Variable (DV) as well as the moderating role of OC. In this matter, STS much emphasizes on the inter-relatedness and importance of a system's social part (i.e. organizational/team culture, management practices, leadership style) along with the technical in achieving a system goals. Also, according to the RBV a company's organizational related resource (i.e. organizational culture) can increase or decrease the effectiveness of other resource (as human resource) on achieving the system's objectives. Grounded on the RBV and based on the prior research, OC could have a moderating role in the relationships between HR and organizational factors and firm performance. In conclusion, this research problem centers on the lack of research at the micro level that uses the employees perception and perspectives to investigate the motivational factors of environmental performance, among the ISO 14001 certified manufacturing companies.

The present study tried to bridge the research gaps by addressing the following questions:

- 1- What is the level of work motivation (intrinsic, extrinsic), leadership style (transformational and transactional), environmental training, organizational citizenship behavior toward the environment (OCBE), organizational culture and perceived environmental performance among the employees of ISO 14001 certified manufacturing companies in Malaysia?
- 2- Is there a significant relationship between work motivation (intrinsic, extrinsic), leadership style (transformational and transactional), environmental training and organizational citizenship behavior toward the

environment (OCBE) with perceived environmental performance among the employees of ISO 14001 certified manufacturing companies in Malaysia?

- 3- Does organizational culture, moderate the relationship between work motivation (intrinsic, extrinsic), leadership style (transformational and transactional), environmental training, organizational citizenship behavior toward the environment (OCBE) with perceived environmental performance among the employees of ISO 14001 certified manufacturing companies in Malaysia?

1.4.Objectives of the Study

The main aim of this study is to examine the moderating role of organizational culture in the relationship between work motivation (intrinsic, extrinsic), leadership style (transformational and transactional), environmental training and organizational citizenship behavior toward the environment (OCBE) and the perceived environmental performance among the employees of ISO 14001 certified manufacturing companies in Malaysia. Specifically the objectives of this research are as followings:

- 1- To determine the level of work motivation (intrinsic, extrinsic), leadership style (transformational and transactional), environmental training, organizational citizenship behavior toward the environment (OCBE), organizational culture and perceived environmental performance among the employees of ISO 14001 certified manufacturing companies in Malaysia
- 2- To determine the relationships between environmental training and perceived environmental performance among the employees of ISO 14001 certified manufacturing companies in Malaysia
- 3- To determine the relationships between leadership style (transformational and transactional) and perceived environmental performance among the employees of ISO 14001 certified manufacturing companies in Malaysia
- 4- To determine the relationships between organizational citizenship behavior toward the environment (OCBE) and perceived environmental performance among the employees of ISO 14001 certified manufacturing companies in Malaysia
- 5- To determine the relationships between work motivation (intrinsic, extrinsic) and perceived environmental performance among the employees of ISO 14001 certified manufacturing companies in Malaysia
- 6- To determine the moderating role of organizational culture (OC) (Clan, Adhocracy, Hierarchy, Market) on the relationship between work motivation (intrinsic, extrinsic), leadership style (transformational and transactional), environmental training and organizational citizenship behavior towards the environment (OCBE) and perceived environmental performance among the employees of ISO 14001 certified manufacturing companies in Malaysia

1.5.Significance of the Study

The mission of human resources in practices of environmental efficiency and promoting environmental performance is to determine and understand their inter-organizational factors associated with green operational procedures. Whereas, parts of these organizational factors (except for the technical part) talk about employee

attitude and motivation, the managers' leadership style, level of environmental training of employees (adequate knowledgeable and skillful employees) and the employees discretionary unrewarded behaviors towards the environment (OCBE). In the classification of factors by Hillary in 2004, the organizational critical factors were encompassing human resources, perception of environmental management and employees' attitudes and firms' culture (Hillary, 2004).

Theoretically, the current study contributes to the body of knowledge related to the human resource and organizational factors affecting the environmental performance of a firm as perceived by employees. Moreover, although the previous reviews in this area have reported the relationship between HR and organizational factors and environmental performance, the majority of them to date of this research do not examine either mediators or moderators of the relationships between the HR and organizational factors with company's environmental performance. Thus, this study examines the mechanisms that the mentioned factors work through to have their effects on the companies' environmental performance by investigating the role of organizational culture as a potential moderator.

From a theoretical standpoint, the underpinning theory of this study is an integrated model of STS (socio-technical system theory, which tries to justify the importance role of organization's social factors, along with the technical part achieving organizational objectives) and RBV (resource-based view of firm). This model is more comprehensive to explain this research framework for a number of reasons as follows;

1) STS is used to explain the direct relationships of the predictors and environmental performance. STS is based on the general system theory which states that an organization is an open system to its external environment and so can deal better with the external changes happen. Thus, it's applicable theory of organizational change and development programs such as organizational green programs (Appelbaum, 1997; Kwahk, 2008; Ness, 2015).

2) Based on the STS a specific consideration need to be paid to the social part of a system in term of their wants and needs, leadership style. It is because in presence of the advanced technical part if the social part do not support and not be competent enough the adopted program do not necessarily translate to premium performance and productivity of the system. Thus, in this case the theory place more emphasis on the specific factors of the social context (Thompson, 2013).

3) On the contrary, the RBV places the equal contribution for all the organizational resources on the organizational objectives and performance, thus, it does not specifically stress on the social part factors (Barney, 2011). Despite, RBV is a useful approach to explain the moderating role of organizational culture in this context. As the RBV proposed that organizational related resource (i.e. organizational culture) have the potential to foster or hinder the effect of other resource (HR) in accomplishing the specific programs to achieve the goals and objectives (Chan, 2004; Naor, 2014)

4) This model is able to cover and explain more individual and organizational factors, specifically related to the system's social part (human resource). However,

the factors may not be considered as the organizational resource but still potentially affect the firm's performance (in particular environmental performance), such as employees green perceptions, degree of openness in communication (Bijker, 2012).

5) Finally, this integrated model using RBV approach, is able to explain the moderating role of organizational culture on the relationships proposed in the research framework. RBV states that the organizational related resource (i.e. organizational culture) have the potential to foster or hinder the effect of other resource (HR) in accomplishing the specific programs to achieve the goals and objectives (Chan, 2004; Naor, 2014). It should be noted that a variable called as a moderator when it changes the relationship between to constructs (increase, decrease or even changes the form). Also, the mentioned relationship may change based on the level or amount of the moderating variable (Hair, 2010).

According to the above discussion, this integrated model of RBV and STS is more comprehensive and applicable to explain the role of the factors affecting a company's performance. As this model is able to cover and explain various variables and different relationships between them (i.e. moderating role) and company's performance.

Thus, this study contributes to the body of knowledge regarding to the STS theory and RBV approach, by supporting and expanding the areas of the theories to better explain the effects of different social part variables on companies' objectives in the specific area of environmental performance of companies. Moreover, the study specifically expands the body of knowledge regarding to the RBV theory. In which the study empirically tested and confirmed the RBV proposition of moderating role of OC on the relationships between a company's intangible resources (social part factors) and company's performance. In addition this research supports the STS approach by specifically examining and confirming the effectiveness and contribution of a system social part factors on company's performance.

Indeed, this integrated model explains the relationship between aforementioned factors and perceived environmental performance, as well as the moderating role of organizational culture.

Most of the previous firm level studies in this area have used the resource-based view of the firm (RBV) as a theoretical basis of their work (Egri& Herman, 2000; Fernández& Junquera, 2003; Sharma& Aragón-Correa, 2007; Iraldo& Testa, 2009; Nee, 2011; Hofer& Cantor, 2012). This research extends this framework by positing the integration of STS and RBV as a grounding theory to better evaluate the model of the aforementioned predictors in the context of company's green performance and in Malaysian working environment.

With regard to the field of human resource development, the study proposed that there is the potential relationship between transformational and transactional leadership style, environmental training, intrinsic and extrinsic work motivation, OCBE and environmental performance. Thus, the HRD practitioners and departments should be competent enough to develop the individuals who are more motivated to protect the natural environment, more able to practice the appropriate leadership style with their subordinates, more show the discretionary environmental friendly behaviors and finally be well competent and skillful to solve the

environmental problem within their company. Moreover, the findings of this research tried to fill the gap in the research area of contribution of the individual and organizational factors (Work Motivation (intrinsic, extrinsic), Leadership Style (transformational, transactional), environmental Training, OCBE, and organizational culture) in company's sustainable development programs (i.e. adopting EMS to increase companies' environmental performance). In this matter, based on the prior research there are limited empirical studies in this area, specifically pertaining to the contribution of work motivation (intrinsic, extrinsic) and organizational culture, alone and in conjunction with other factors on companies' environmental performance. Consequently, this study expanded and facilitated the understanding of human resource dimensions, those have more contribution to the firm's environmental performance. In particular, when a company started to adopt new strategic programs responding to the external environment changes. Further, this study contributed to the theoretical literature on determinant factors (related to the human resource) of environmental performance, that could be developed and gain more attention from the organization's managers and decision makers. In addition, another significance of this study lies in helping to light up the importance of organizational culture in successfully transferring and transforming the human resource efforts and practices to organization's environmental performance.

Since there is no adequate investigation on this research topic in Malaysia from the practical standpoint, this study has provided a model of the firm level antecedents of environmental performance (referring to the research framework mentioned in chapter three). Practically, the framework provided could be applicable for organizations' policy makers, managers and practitioners in the mentioned manufacturing firms. The results of this study can provide them with information to build guidelines and strategies to optimize the extent and nature of human resource factors and practices with favorable and appropriate organizational culture. As a result, it helps them to improve firms' economic, social and environmental performance. In which it is the ultimate goal of organizations' sustainable development programs and corporate social responsibility behaviors. Hence, the findings underline the importance of firm-level antecedents for environmental performance beyond the often studied external firm, macro level variables. Thus, the study contributes to the growing body of literature on the organizations' environmental performance in newly industrialized country such as Malaysia.

1.6. Assumptions of the study

There are a number of assumptions related to this quantitative, non- experimental research. From a theoretical view, it is assumed that perceived environmental performance of companies is influenced by predictors of the study consist of, work motivation (intrinsic, extrinsic), leadership style (transformational, transactional), environmental training and organizational citizenship behavior towards the environment (OCBE).

Methodological assumption is that a quantitative survey methodology can be used to study this topic by effectively converting perceptions (of the respondents on the variables of the study) to statistical data and conduct quantitative analysis to determine relationships (Jones & Kottler 2006).

Another important assumption that directed this research is the notion that the scales measuring OCBE, leadership style (MLQ-5x), work motivation (WEIMS), environmental training, organizational culture (OCAI) and perceived environmental performance, are valid previously tested instruments and precisely evaluate the study variables well enough to decrease data bias.

From a practical perspective, it is assumed that all the participants in this study have adequate knowledge regarding the company's environmental objectives and issues. They assumed to be well informed about the position of their company's environmental performance as they have selected from the departments that are supposed to.

1.7. Scope and Limitation of the Study

The current study is restricted in its scope to only focus on the work motivation, leadership style, environmental training and organizational citizenship behavior toward the environment (OCBE) role on the perceived environmental performance. This study also focuses on the concept of organizational culture as a moderator between aforementioned variables and perceived environmental performance.

This study selected manufacturing sector because, according to the Gamero, (2009) different sectors generate different level of environmental pollution and impacts based on their type of activities. Accordingly, the manufacturing part is considered as the most polluting/dirty industry among the sectors such as service (least-polluting) and agriculture (López-Gamero& Molina-Azorín, 2009). Indeed, this sector is faced with more environmental requirements and has a high level of public concern. Thus, companies operating in this sector tend to have more comprehensive environmental management practices in place (Johnstone& Labonne 2009; Gomez& Rodriguez, 2011). Moreover, according to the statistics Malaysia official portal, manufacturing part is the second largest contributor to GDP with 3.3 per cent growth rate in 2013 (after service sector with 4.8 per cent growth rate in 2013).

As the design of the study is co-relational and not all the factors related to perceived environmental performance are considered in this research, so the possibility of other variables contributing to the perceived environmental performance will exist. Thus, there might be other possible factors that play a role in increasing a company's environmental performance. Moreover, there might be other mediating or moderating variables in conjunction with the study's predictors which are not considered in this research.

This study attempts to expand on the theoretical concepts of contribution of human resource factors on the organization environmental performance and efficiency, considering on the moderating effect of organizational culture. Another potential limitation of this study is the use of subjective measurement of environmental performance rather than more objective measure.

Using the employees instead of organizations as the unit of analysis is another potential limitation of this study.

Another potential limitation of the study is using single/mono method (single source) data collection. Indeed, measurement method effects are widely believed to pose threats to research in the organizational and behavioral sciences, especially when multiple study variables are measured using the same method. For example according to the Spector (2006), “it is believed that relationships between variables measured with the same method will be inflated due to the action of common method variance”.

Although, using this kind of method in organizational and behavioral research is still defensible in the light of the fact that “the observed correlations are actually not higher than estimated correlations among the traits themselves” (Lance, 2010). Moreover, based on Lance (2010), “covariance distortion effects are not limited to mono-method correlations, hetero-method (using multiple source of data) correlations are also potentially subject to covariance distortion”. In conclusion, based on research, using single method data collection is still defensible. “The common method effects inflate mono-method correlations but it is a myth that mono-method correlations are larger than correlations among the constructs themselves, and this is because of the offsetting and diminishing effects of measurement error (Podsakoff, 2012; Conway, 2010). Moreover, the study tested common method variance among the factors of the study using Harman's (1976) single-factor test. The first factor accounts for only 23.37% of the overall variance, which indicates that common method variance likely does not affect the results (Podsakoff& Organ, 1986; Podsakoff, 2012).

Furthermore, as with the all studies using a limited number of samples generalizability of the research findings might be concerned. In this matter, using the data of 36 willing companies (36 out of 178 that agreed to participate in the study) as the target population, may seem to be a convenience sample and should be acknowledged as a limitation.

Lastly, the findings of this study focused on manufacturing companies and did not incorporate the services and other sectors.

Thus, due to the limited scope, the research outcomes may not be applicable in other sectors with different contextual factors in their companies.

1.8.Operational Definitions

1.8.1. Perceived Environmental Performance

This study evaluates employees' perception of environmental performance in terms of the company's environmental efficiency using subjective measures of organizational performance (Feldman, Soyka, 1997; Melnyk, Sroufe, 2003; Daily, Bishop, 2011). The scale used measures, the effects of company's environmental efforts resulting in waste management, improved product quality, enhance environmental reputation, improved company's performance and reducing the costs and design/develop better products.

1.8.2. Work Motivation

In this research, extrinsic (i.e. External Regulation, Introjected Regulation, Identified Regulation and Integrated Regulation) and intrinsic motivation was studied.

- **Extrinsic motivations** are those that indirectly are able to satisfy the employees' need, mostly through tangible and monetary rewards (Osterloh & Frost, 2002).
- **Intrinsic motivation** in contrast, is manifested when people behave in a manner to satisfy the inherent psychological needs instead of to achieve objective reward (Ryan & Deci 2000)

1.8.3. Leadership Style

In this study, two types of transformational leadership style, namely transformational and transactional leadership were studied.

- **Transformational leadership** characteristics, described by Bass and Avolio contain five main sections comprises of: idealized influence charisma, idealized influence behavior, inspirational motivation, individualized consideration and intellectual stimulation (Avolio & Bass, 1993, 2004)
- **Transactional leadership** contains three aspects, active management by expectation, contingent rewards, passive management by expectation (Bass, 1985; Judge & Piccolo 2004)

1.8.4. Environmental Training

This study has measured environmental training based on the availability, amount and frequency of environmental training provide with employees in an organization.

1.8.5. Organizational Culture

This study has used the Competing Value Framework of organizational culture (CVF). Four kinds of organizational culture (in CVF) were studied in this research, including:

- 1) **Clan**, that most emphasizes on the human relation values in terms of shared values and common objectives, employee empowerment and involvement and a sense of mutual help among employees.
- 2) **Adhocracy**, or open system values, more focuses on growth based on adaptability, creativity, readiness for change and flexible decision making.
- 3) **Market**, or internal process model of organizational culture emphasizes more on productivity and competence which is gained by goal-setting, planning.
- 4) **Hierarchy**, or internal process value, refers to the organizational culture that promote formal means like information management and data-based decision making

process. It includes conformity, clear organizational structure, standardized procedures and rules and attention to technical matters.

1.8.6. Organizational Citizenship Behavior toward the Environment (OCBE)

Three classes of OCBE were studied in this research including:

Eco-initiatives: including those employee driven environmental actions in the workplace

Eco-civic engagement: is related to organization's contribution to the environmental initiatives such as involvement in environmental events

Eco-helping: is concerned with mutual assistance in environmental issues (i.e. helping colleagues to take environmental issues into consideration)



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