DETERMINANTS OF MANAGERIAL RESPONSES TO ENVIRONMENTAL ISSUES IN SMALL AND MEDIUM ENTERPRISES IN TURKEY

A THESIS SUBMITTED TO
THE GRADUATE SCHOOL OF SOCIAL SCIENCES
OF
THE MIDDLE EAST TECHNICAL UNIVERSITY

BY

TAYYAR CAN ÜNVER

IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE
OF
MASTER OF BUSINESS ADMINISTRATION
IN
THE DEPARTMENT OF BUSINESS ADMINISTRATION

JANUARY 2009

Approval of the Graduate School of Social Sciences

_____

Prof. Dr. Sencer AYATA

Director

I certify that this thesis satisfies all the requirements as a thesis for the degree of Master of Business Administration.

_____

Prof. Dr. Cengiz EROL

Head of Department

This is to certify that we have read this thesis and that in our opinion it is fully adequate, in scope and quality, as a thesis for the degree of Master of Business Administration.

_____

Assoc. Prof. Dr. Semra F. AŞCIGİL

Supervisor

Examining Committee Members

Prof. Dr. F. N. Can ŞIMGA-MUĞAN	(METU, BA)	_____
Assoc. Prof. Dr. Semra F. AŞCIGİL	(METU, BA)	_____
Assoc. Prof. Dr. Ayşe GÜNDÜZ-HOŞGÖR	(METU, SOC)	_____

I hereby declare that all information in this document has been obtained and presented in accordance with academic rules and ethical conduct. I also declare that, as required by these rules and conduct, I have fully cited and referenced all material and results that are not original to this work.

Name, Last name : Tayyar Can Ünver

Signature :

ABSTRACT

DETERMINANTS OF MANAGERIAL RESPONSES TO ENVIRONMENTAL ISSUES IN SMALL AND MEDIUM ENTERPRISES IN TURKEY

Ünver, Tayyar Can

MBA, Department of Business Administration

Supervisor: Assoc. Prof. Dr. Semra F. Aşcıgil

January 2009, 84 pages

The main purpose of this study is to identify the major driving factors that determine the environmental commitments and certification ownership of small and medium sized enterprises (SMEs) in Turkey. Turkey has been undergoing major economic and environmental developments since 1990ies. SMEs play a significant role in the Turkish economy, constituting 99.8% of total enterprises in number. Even though most managers overlook their firms' particular impacts, SMEs' cumulative effect on natural environment is significant. According to previous research, regulations, community, competitors, suppliers, consumers and media have been found to be the main external determinants that affect a manager's attitudes about the environment and therefore his or her firm's environmental commitments; whereas managers' beliefs about the environment, their confidence in their firm's abilities and resources and their environmental governance principles are the internal determinants. In line with previous research findings, this study tries to examine the effects of these factors along with the demographic characteristics of the manager's.

As the results of the questionnaire distributed to 80 SME managers in Ankara suggest, institutional and social pressures and manager's confidence in him/herself and his/her firm's abilities showed to have significant influence on the firm's environmental commitments, along with the size of the company and the education level of the manager. In addition to that, external pressures and size are also major factors driving SMEs to obtain environmental certifications.

Key Words: Environmental Management, SMEs, Environmental Sensitivity

ÖZ

TÜRKİYE'DEKİ KOBİ YÖNETİCİLERİNİN ÇEVRE İLE İLGİLİ KONULARA VERDİKLERİ TEPKİLERİN BELİRLEYİCİLERİ

Ünver, Tayyar Can

Yüksek Lisans, İşletme Bölümü

Tez Yöneticisi: Doç. Dr. Semra F. Aşcıgil

Ocak 2009, 84 sayfa

Bu çalışmanın temel amacı, Türkiye'deki Küçük ve Orta Büyüklükteki İşletmeler'in (KOBİ) çevreye olan bağlılığını ve sertifika sahipliklerini belirleyen ana faktörleri saptamaktır. Türkiye, 1990'lardan beri ekonomik ve çevresel birçok önemli gelişme kaydetmiştir. KOBİ'ler ise Türkiye ekonomisinin oldukça büyük bir kısmını kapsar ve ülkedeki tüm işletmelerin sayıca %99.8'ini oluşturur. Her ne kadar KOBİ yöneticileri kendi firmalarının etkilerini görmezden gelse de, tüm KOBİ'lerin doğal çevreye olan toplam etkisi oldukça fazladır. Daha önce yapılan araştırmalara göre, yasalar, toplum baskısı, rakipler, tedarikçiler, tüketiciler ve medya, yöneticinin çevre hakkındaki fikirlerini ve dolayısıyla da işletmesinin çevreye olan bağlılığını etkileyen ana dış faktörler olarak bulunmuştur; iç faktörler ise yöneticinin çevre hakkındaki inançları ve düşünceleri, kendisinin ve işletmesinin çevreyi koruma konusundaki kabiliyetine güveni, şirketin kaynaklarının durumu ve çevre yönetimi prensiplerinin sıkılığıdır. Daha önceki çalışmalara paralel olarak bu çalışma, bahsedilen bu ana faktörlerin etkisinin yanısıra yöneticinin demografik özelliklerinin etkilerini de araştırmayı amaçlar.

Ankara'da 80 KOBİ işletmecisine dağıtılan anketlerin sonucunda, işletmenin büyüklüğünün ve yöneticinin eğitim durumunun yanısıra, kurumsal ve sosyal baskıların, işletmecinin kendine ve işletmesinin yeteneklerine olan güveninin, işletmenin çevresel bağlılığını büyük ölçüde etkilediği görülmüştür. Bunun yanısıra dış baskılar ve işletmenin büyüklüğü de KOBİ'leri çevre sertifikaları almaya iten önemli faktörler arasında yer almaktadır.

Anahtar Kelimeler: Çevre Yönetimi, KOBİ, Çevresel Duyarlılık

To My Family

and

My Love

Pınar Üstün

ACKNOWLEDGEMENTS

First of all, the author would like to express his gratitude to his thesis supervisor Assoc. Prof. Dr. Semra F. Aşcıgil for being helpful and understanding all through the study.

The author would also like to thank everyone around him during his difficult times including his friends, family and his doctor. He would like to thank all members of his family for being supportive, understanding and encouraging. The author would also like to thank his dearest friends and his colleagues for showing interest and providing knowledge from their own experiences. Moreover, he would also like to show his gratefulness to his doctor Prof. Dr. F. Alev Türker for helping him fight his ailment and making it much easier to live through the curing period.

The author is also grateful to Prof. Dr. F. N. Can Şımga-Muğan and Assoc. Prof. Dr. Ayşe Gündüz-Hoşgör for their understanding and providing every help for the problems that occurred due to his illness. In addition, valuable opinions of KOSGEB manager Hayri Beygü Solmaz were quite helpful while constructing the questionnaire. Moreover the helps of Özgür Arun throughout the statistical analysis are gratefully acknowledged.

Throughout the data collection period, the author would like to thank every manager who spent their time to complete the questionnaire, and to the firms arranging the fairs for letting him collect data from participating companies.

Finally, though it is difficult for him to express his gratitude in words, the author would like to declare his gratefulness to his friend Pınar Üstün for helping him throughout all the steps of the study, for looking after him while he was sick, for encouraging him while he was depressed and for providing every psychological help. It would have been impossible to complete this study without her support in every aspect of the author's life. Lastly he would also like to show his thankfulness to the family of Pınar Üstün for both raising a lovely daughter and for providing every support they can.

TABLE OF CONTENTS

LIST OF TABLES

TABLES

LIST OF FIGURES

FIGURES

CHAPTER 1

INTRODUCTION

In this introductory chapter, a brief description of the current economic and environmental condition in Turkey, a short definition and classification of small and medium sized enterprises (SMEs) and their place in the economic and environmental condition are explained.

1.1 Turkey and Environmental Governance

Turkey has been experiencing many economic changes since 1990ies, which are mainly structural such as privatization, price liberalization and integration into the European Union. Under the effect of these forces, the state realizes that economic growth is associated with environmental sustainability as well as social progress (OECD, 1999). Moreover, since the crisis in the 2001, Turkey became one of the countries representing a strong pace of growth among Organization for Economic Co-Operation and Development (OECD) countries, and with the reduced inflation and risk premia a good progress towards a stronger and sustainable growth path is achieved (OECD Policy Brief, 2006). Along with the economic developments, Turkey gives great importance to reforming the government and public administration as well (OECD, 2002).

According to Regional Environmental Center's "Turkey's Environment" report in 2004, Turkey started to have environmental concerns in 1970s. In 1978, Prime Ministry Undersecretariat for Environment was founded as the institution which was expected to set environmental policies, prepare and coordinate regulations. After more than a decade, it was converted to Ministry of Environment in 1981 and its responsibilities were expanded. Today, the Ministry of Environment,

which was merged with the Ministry of Forestry and became the Ministry of Environment and Forestry, has responsibilities such as appropriate land use, conservation of natural resources, protection of plant and natural species, prevention of pollution, raising public awareness etc. (REC, 2002). As the same report implies, Turkish Environmental Law, which considers the environment as a whole, came in to effect as of 1983. It stated that the protection of the environment is the responsibility of both the state and citizens. It was also declared that in every economic activity and operation, environmental damage should be minimized. According to the website of the Ministry of Environment and Forestry (http://www.cevreveorman.gov.tr), its most recent modification was done in April 2006. Along with the Turkish Environmental Law there are several regulations such as Air Quality Control Regulation (1986), Water Pollution Control Regulation (1988), Noise Control Regulation (1986), Control of Solid Waste Regulation (1991), Environmental Impact Assessment Regulation (1992), Regulation on Control of Medical Waster (1993), Control of Toxic Chemical Substances and Products Regulation (1993), and Control of Hazardous Wastes Regulation (1993).

Turkey is in the challenging era of harmonizing economical development and environmental sustainability. Moreover, the country is highly centralized with respect to its governance structure, whereby governments are actively involved in all economical activities. Therefore, there are many regulations, laws and other measures organized for protecting the environment while ensuring the economical growth. While the main regulator is the Ministry of Environment and Forestry, the State Planning Organization is also involved in the sustainable development of the country. State Planning Organization has the power to include environmental concerns in the investment proposals which are financed by public funds. However, Turkey's centralized administration and lack of involvement of local authorities make it harder to take action and reduce the enforcement capability (REC, 2002; OECD, 1999).

1.2 SMEs in Turkey

According to "Small and Medium Enterprises (SMEs) in Turkey" report (OECD, 2004), SMEs play a very important role in the Turkish economy, due to their number and the large share of the workforce involved in them. Moreover, Taymaz (1997) points to the importance of SMEs by asserting that, small and medium-sized industry is a dynamic sector in which the new technologies are tested and also a sector which provide components to larger industries. The OECD (2004) report points that, the Turkish Statistical Institution does not set a standard for the definition of SMEs, as various organizations involved in the SME policies define the term differently. According to European Union, the enterprises which employ fewer than 250 people and have an annual turnover below EUR 50 million, and/or an annual balance sheet total not exceeding EUR 43 million can be considered as micro, small and medium enterprises. In addition to that, companies which have less than 10 employees and an annual turnover and/or an annual balance sheet total not exceeding EUR 2 million are micro enterprises (OECD, 2004). Table 1.1 shows the SME definitions used in Turkey and the European Union, relative to their sizes.

According to the OECD report published in 2004, the estimates showed that in the year 2000, SMEs constituted 99.8% of the total number of enterprises, 76.7% of total employment, 38% of capital investment, 26.5% of value added about 10% of exports and 5% of bank credit. It is indicated in the same report that, according to the former State Institute of Statistics, currently the Turkish Statistical Institute, a small portion of the SMEs are operating in the manufacturing sector. In 2001 there were 210,000 of such companies which employ 1,597,538 people and which were responsible for 34.5% of the total value added in the industry. The manufacturing sector's production distribution is as follows: 26.1% metallic goods, 25.6% clothing, textile and leather goods, 24.3% wood and furniture, 12.7% food and drink, 3.9% paper and 7.4% other goods. Moreover, they are generally micro-sized industries and their average number of employees is only 4.8 (OECD, 2004).

Table 1.1: SME definitions used in Turkey and the European Union

Organization	Sectoral definition	Criterion for definition	Micro-sized enterprise	Small-sized enterprise	Medium-sized enterprise
KOSGEB	Manufacturing industry	Number of workers	1-9	10-49 workers	50-250 workers
HALK BANK	Manufacturing industry	Number of workers	--	--	1-250 workers
		Fixed investment amount (EUR)	550.000	550.000	550.000
UNDERSECRET. OF TREASURY	Manufacturing industry, tourism, agro-industry, mining, education, health, software development	Number of workers	1-9 workers	10-49 workers	50-250 workers
		Investment amount, amount of investment subject to SME incentive certificate (EUR)	550.000	550.000	550.000
UNDERSECRET. OF FOREIGN TRADE	Manufacturing industry	Number of workers	--	--	1-200 workers
		Fixed investment amount (EUR)	--	--	1.830.000
EXIMBANK	Manufacturing industry	Number of workers	--	--	1-200 workers
EU	Non-primary private	Number of workers	0-9 workers	10-49 workers	1-250 workers
		Annual turnover	<EUR 2 million	<EUR 10 million	<EUR 50 million
		Annual balance sheet	<EUR 2 million	<EUR 10 million	<EUR 43 million

***Note*: Assuming EUR 1 = YTL 1,70.**

***Source*: Small and Medium-Sized Enterprises in Turkey: Issues and Policies, OECD, 2004.**

1.3 SMEs and Growing Environmental Concerns

Currently, the per capita discharges and pollutant emission averages are low for Turkey, compared to the other OECD countries. However, there is still a long and hard road waiting for Turkey which requires strengthened environmental efforts from central government, municipalities and public sector in order to achieve an environmental success comparable to other members of OECD (OECD, 1999).

Environmental concerns and issues developed through many steps during the last forty years worldwide. It was 1960ies when wealthy and developed nations of Western Europe, North America, Australia and Asia started to consider environmental issues as a major concern. 1970ies showed policy initiatives, leading to tighter laws to protect the environment and limit the business activities which made companies fight with these regulations instead of complying with them due to high technical specificity about environmental protection measures. 1970ies also created administrative bodies at state and national levels. 1980ies and 1990ies were the decades where senior managers and entrepreneurs accepted the need for a sustainable development approach (Schaper, 2002; Walley & Whitehead, 1994). Furthermore, societal concerns led the way to sharp increases in number and strictness of environmental regulations all around the world at all levels (Rugman & Verbeke, 1998). Recently, the research of Biondi, Frey and Iraldo (2000) in European SMEs indicates that environmental management standards are spreading among the majority of the medium, small and micro-sized firms.

Even though they perceive the environment as an important matter which needs protection (80-90% in responses), several SMEs consider their impact to the environment as minimal or negligible compared to larger companies. However, while claiming to pay importance to environmental issues, they fail to demonstrate this positive attitude in their actual business practices. Moreover, their knowledge of environmental management systems and environmental laws is inadequate. However, since the SMEs' cumulative impact is undoubtedly significant, it is crucial that they must be encouraged to improve their environmental performance along with the sustainable development of both the company and the country. This

underestimation is due to the limited capacity of the SMEs, which is barely adequate for their primary objectives such as their survival and conserving their competitiveness. However, firms' environmental performances are inspected by regulators, customers, employees, insurers, funders and the society, and these inspections are getting intense. Nevertheless, controlling firms through regulations has limitations. Environmental sensitivity throughout companies must be maintained by voluntary initiatives driven by the market and at this point, size matters. Different policies should be employed by different companies, proportionate to their sizes (Hillary, 2000).

Due to the fact that SMEs cumulative impact on environment is significant, the determinants of SMEs' environmental performances should be investigated. Since SMEs are generally owned by a single manager who is the owner (Ottesen, Foss & Grønhaug, 2004), they display their managers' personal values and commitments (Fuller, 2003). Therefore, the beliefs of the manager, internal and external pressures around the manager, manager's confidence in his and his firm's abilities, the environmental principles of the manager and the responsibilities of the manager and his firm concerning the environment may have effects on the environmental management, environmental performance and environmental commitments of the firm. These effects can be either positive or negative but according to literature and common logic it is expected that as these determinants get intense, managers and firms get more committed to the environment. Moreover, these determinants and the elevated commitment of the firm for the environment can lead the firm to obtain quality certifications which involve environmental concerns. So, this research aims to investigate the affects of several determinants on the environmental performances and certification ownership of the firms.

CHAPTER 2

LITERATURE REVIEW

This sections aims to discuss the findings in the literature that are related to the environmental management systems (EMS) and environmental commitments in SMEs. First, the term EMS is defined, followed by the effect of size and the other firm-specific characteristics on the implementation of EMSs. After that, the driving factors that lead SMEs to increase their environmental performance are explained with several references to other research in literature. Finally, this chapter is concluded by the categorization of firms according to their environmental performance.

2.1 Environmental Management Systems and SMEs

An Environmental Management System (EMS) is a clear, understandable and organized chain of procedures, in other words a framework known throughout the company in which the environmental policy of the firm is identified. It aims to impose and apply environmental goals, policies and responsibilities as well as regularly controlling its parts. The need for coping with environmental regulations, which are getting stricter day by day, led companies to search for innovative solutions in the mid-eighties in both US and Europe. Instead of treating it as a weight on their shoulders, these innovator companies considered environmental matters as an opportunity and this resulted with the integration of environmental strategies and plans into the general management of the company (Steger, 2000). For a firm which needs to improve and strengthen its environmental performance, adopting an EMS is an advantageous first step. The most common EMS standard

across Europe is the ISO14001, which can be considered as an extension of the ISO9000 series of the quality standards (Miles, Munilla & McClurg, 1999).

A firm's size is an indicator of its resources, in other words, a large firm has more financial and non-financial resources which can be used to integrate environmental concerns into operational activities and product life cycles. Moreover, large firms' activities are more noticeable, exposing them to greater external pressures. However, concerning the SMEs, lack of resources and reduced awareness of environmental matters are the main obstacles for them to overcome (Biondi et al., 2000). On the other hand, since environmental sensitivity and green corporate practices require a flexible and less formalized structure (Noci and Verganti, 1999), smaller firms may adopt these practices faster (Lefebvre, Lefebvre and Talbot, 2003).

Despite the influence of size on the adoption process as well as the style of environmental management systems and integrating green management into the decision making mechanism of the firm; the growing trend of improved environmental performance and companies' concerns about environmental issues are increasing steadily independent of the size of the companies. Furthermore, there are external forces such as regulations, consumer demands, competitors' environmental initiatives, increasing public awareness, globalization of markets, and technological availability; which cause companies to perform their activities in a more environmentally sound manner. Even though large corporations may seem to be exposed to environmental pressures more, SMEs are under pressure as well. This is due to the fact that when large firms aim to achieve a higher environmental quality in their products, this enforces their suppliers to have better products in terms of environmental impacts as well. This fact is also in line with Taymaz's previously mentioned assertion about the importance of SMEs playing the important role of suppliers for larger companies (Taymaz, 1997). So, this forces SMEs to consider environmental issues to a greater extent, especially for the ones working with larger corporations (Epstein & Roy, 2000). Boiral and Sala's article about ISO14001 in 1998 also supports this view by stating that in order to obtain ISO14001 standards, companies must not only adopt an environmental management system but they must also work with certified suppliers. On the contrary, majority of the SMEs neither

believe in the existence of considerable advantages due to environmental investments nor their infrastructure is suitable for handling the assessment of environmental costs (Epstein & Roy, 2000).

The relationship between a firm's characteristics and its environmental management and performance is receiving substantial interest lately. The variations between different firms' answers to external factors with respect to their intra-firm properties, which are not related to regulations, brought a new perspective to the recently done research (Johnstone, Scapecchi, Ytterhus & Wolff, 2004).

Compared to larger companies, the cumulative contribution of SMEs to pollution levels is higher and it can be argued that researchers should pay more attention to SMEs. However, their large number and small individual impacts on the environment made them harder to investigate and therefore most of the past research is conducted on large companies (Hillary, 2000).

2.2 Factors Driving SMEs to Green Management

As mentioned above, there are some forces that compel companies to go through changes. These are mainly competitive forces, economic and political forces, global forces, demographic and social forces and ethical forces (George & Jones, 2002). The aforementioned demands by regulations, customers etc. are actual forces on the company, forcing it to change. However, there may be resisting forces on the company as well, forcing the company to various other directions. While regulatory stakeholders (regulators), community stakeholders (environmental organizations, community groups, other special interest groups), organizational stakeholders (employees, suppliers, buyers), and media sometimes force companies to increase their environmental quality (Henriques & Sadorsky, 1999), competitive forces generally push firms to decrease elevated environmental costs (Wally & Whitehead, 1994). Nevertheless, it is very important that companies should uphold a standard of ethical behavior while answering demands for more honest and responsible corporate behavior.

Research indicates that, since the management of SMEs consists of a single individual (or a few individuals) most of the time, a huge portion of environmental

responsibility lies on the managers (Lefebvre et al., 2003; Junquera & Ordiz, 2002). This important position of managers led to an interest in examining their roles and the effects of managerial characteristics (Waldmank & Yammarion, 1999) on different aspects of the company's operations. Literature has mainly studied the effect of managerial characteristics on the company's performance (Child, 1972; Mousa, 2000); the type of leadership found in the company (Rowe, 2001); organizational structure (Hambrick & Mason, 1984); advances in total quality management (TQM) (Lakshman, 2001); and diversification strategies (Reed & Reed, 1989), among other aspects. Junquera and Ordiz (2002) have found that managers who are able to make strategic decisions more quickly, who believe they have the capacity to change company policy, who feel they are supported by their company in influencing strategy; help their companies to achieve better environmental performance. They also showed that the leadership capacity of the manager, especially transformational leadership, differentiates companies with respect to their environmental performance. Bass defines transformational leadership as having three important components. First, a transformational leader increases subordinates' awareness of the importance of their tasks and their performance. Second, they make their subordinates aware of their needs for personal growth and accomplishment. Finally, these leaders motivate employees to work for the goals of the organization rather than their own personal goals (Bass, as cited in George & Jones, 2002).

Another important finding from the Junquera and Ordiz article (2002) is that managers' level of international awareness, such as adopting the ISO 14001 standard; as well as their involvement in, and identification with the business culture of the company; have a positive impact on the environmental performance of their company.

With the need for economic development and environmental sustainability, as mentioned before, the determinants of Turkish firms' managerial responses to environmental issues such as public awareness, governmental regulations, requirements of buyers and pressures from non-governmental and civil organizations and other stakeholders are of considerable interest. The environmental demands and requirements include not only satisfying the minimum standards of environmental

protection but also the increased commitment of the firm to constant improvement of environmental standards through activities such as environmental monitoring, formal reporting and validation of environmental performance by independent auditors (Nakamura, Takahashi & Vertinski, 2001).

Currently researchers are showing a great interest in "win-win" situations in which better environmental performance comes along with commercial success and profitability. There are several studies, especially after 1990s which investigate the attitudes of SMEs about the environment. Nevertheless in those analyses, along with the environmental concerns, energy policies and the decision making processes were studied as well.

Henriques & Sadorsky (1996) examined 400 Canadian firms for the relationships between implementing an environmental plan and numerous motivations (efficiency gains, government regulations etc.), pressures (neighborhood and community organizations, environmental organizations, employees etc.), financial status (sales-to-asset ratio), firm size (number of employees) and sector-specific classifications. The research conclude that, customer pressure, shareholder pressure, government regulatory pressure, neighborhood and community group pressure have positive influence while, other lobby group pressure sources and the firm's sales-to-asset ratio have negative influence on implementing an environmental management system. Another important finding was that the firms in the natural resource sector are more likely to adopt environmental plans in their strategic decisions, compared to the firms in the service sector which are less likely to implement these plans.

Another study in 1996 was Arora & Cason's research among 6000 U.S. firms for the motivations behind the volunteered over-compliance of environmental regulations. The research used Environmental Protection Agency's (EPA) 33/50 program, which is a voluntary program that aims 50% reduction in releases and transfers of 17 toxic chemicals. They found that the major factors were firm size, amount of advertising expenditures, amount of research and development expenditures. In addition to that, greater customer contact showed greater participation, especially for larger firms (Arora & Cason, 1996). In a similar study, DeCanio & Watkins found out that, company-specific properties such as firm size,

earnings and managers' ownership of shares are important motivations for companies investing in EPA's voluntary Green Lights Program (DeCanio & Watkins, 1998).

Smith, Kemp and Duff (2000) researched the determinants of the environmental behavior of SMEs from a sample of 300 companies' managers. According to the results of the telephone interviews, 74% of the managers considered their environmental performance as very/fairly good while 21% considered it neither good nor poor and 4% said that their environmental performances are very/fairly poor. 23% of the respondents had a formal environmental policy, 38% address environmental issues as part of their business plan and 36% did not address environmental issues formally. 3% of the companies were registered under Eco-management and Audit Scheme (EMAS) while 7% were certified under ISO 14001. Through the interviews, respondents were asked about the environmental compliance costs as well. Most of the managers told that environmental compliance neither has significant costs nor saves, while quarter of the respondents did not have an idea about the compliance costs. Considering the social pressures, managers answered that the organizations that can convince them to change their environmental practices, from the one with the most influence to the least, are local authorities, customers, environment agency, insurers, general public, investors/shareholders, environment groups, trade associations, supplier of goods and services, lawyers, bankers and competitors. To summarize the research of Smith et al., SME managers considered their companies' impact to the environment as negligible or small even though they are aware of the pressures from different groups about improving their environmental performance. Moreover, they are aware of the benefits of environmental compliance, beyond-compliance and improved environmental performance, such as advanced customer relations, cost savings and competitive advantage.

The research of Petts, Herd and O'hEocha (1998) investigated the relationship between management and non-management attitudes in SMEs and the current and possible effects of the attitudes on their environmental performance. The results showed that individuals have a great concern about environment and are interested in enhancing their environmental performance. Although concerns

showed a significant increase as the respondents' age gets older, the results are parallel to those of the public surveys. 92% of the individuals believed that the companies with higher pollution risk should be more environmentally responsible. Moreover 91% believed that along with the regulations, companies should take voluntary actions as well. Another striking finding was that 80% of the respondents believed that companies could break environmental laws knowingly. Although the managers had a more solid view, both management and non-management believed that their companies polluted the environment, especially for companies which hold environmental certifications. Their research for the relationships between attitudes of individuals and company environmental culture showed significant differences among management and non-management. Generally managers tended to have more positive views about their own companies.

Another research by Petts, Herd, Gerrard and Horne (1999) revealed that, both management and non-management believe in the importance of environmental compliance and are concerned about the environment. They consider compliance as an ethical behavior but they do not have faith in the effectiveness of regulations, in terms of protecting the environment. Petts et al. observed that this lack of faith is a result of perceived scarcity of the regulations rather than a motivation for going beyond-compliance and adopting environmental management systems. Similar to Petts' research in 1998, the beliefs of management and non-management showed difference in terms of perception of the performance of the industry and the company. Non-managerial employees had a more pessimist view than their managers about their companies' environmental performance and believed that managers were only concerned about environmental issues prior to inspections. In other words, managers considered the reduced environmental performance as a result of lack of resources while non-management believed that the reason is the incapability of the management.

Nakamura et al. (2001) investigated 198 large Japanese manufacturers for the determinants that cause them to include environmental protection objectives in their decisions, acquire an environmental certification such as ISO 14001, and grow to be one of the early implementers of an environmental management system. They identified three levels of organizational commitment. At the prime and the basic

level, companies identify their environmental goals formally which are to be used just in case of an environmental protection demand. At the second level, firms incorporate environmental statements into their corporate policies and their higher level executives are responsible for making decisions about environmental matters. The highest and third level companies are in search of a continuous improvement of their environmental performance. Firms in this stage are strictly committed to their environmental objectives and regularly asses their performance. Finally, their continuous improvement is validated by certification. Their results showed that, the greater the firm size and the advertising expenditures, the more sensitive and committed companies become to their environmental objectives. Moreover, the certification rates of Japanese companies are negatively affected by the average age of the employees and debt ratio. Finally, they found out that "institutional and social pressures" and "perceived personal and firm's responsibilities for the environment" have more influence on the "firm's environmental commitment" than "accepted environmental governance principles" of the manager.

The research of Biondi et al., (2000) resulted that direct financial input is not a major problem of SMEs during the implementation of an environmental management system. However the circuitous costs relating with the amount of time that management has to spend and the deficiency of the necessary human and technical resources to deal with environmental difficulties create serious obstacles. Though the financial resources are not the only difficulty that companies face with during the implementation of environmental management systems and uplifting of the environmental performance, the costs can be divided into three groups. These groups are; the costs of acquiring the technical measurement abilities and expertise to ensure the development of environmental performance, costs of integrating the EMS in to the management and costs that are related to certification (Biondi et al., 2000).

As Lefebvre et al.'s research (2003) results implied, the existence of an aggressive technology policy in the firm and anticipated future financial or commercial opportunities are the primary determinants of environmental performance. The second determinant is the presence of a total quality management (TQM) program. The third determinant is about other product characteristics such as

whether the product is sold to foreign markets or not, with the last determinant being whether the products are consumer goods or not. After these characteristics of products, legislation and pressure groups came as drivers of change. Finally, the size of the company, customers' sophistication, and products' prices showed no impact on firms' environmental performance. Same research also resulted that greening of a firm is largely related to managerial and technological developments and innovations. Moreover, it enhances organizational learning and thus, this learning spreads around the supply chain of the firm, affecting customers and suppliers. Furthermore, ISO 14001 certification also increases the spreading ratio along the supply chain (Lefebvre et al., 2003).

Recently, McKeiver and Gadenne (2005) conducted a research on 166 SMEs from Queensland Australia to get a better understanding of the environmental problems they face with. Researchers aimed to find the reasons behind the positive environmental attitudes and low EMS implementation contradiction. The most striking finding was the highly significant effect of education, which meant that SMEs with managers of higher education levels had a higher rate of implementing EMSs. Moreover, the results of the mailed questionnaires showed that legislation, awareness and age are affecting EMS implementation significantly as well. However, McKeiver and Gadenne considered size and industry type to be the main determinants of these factors. Their explanation for the size effect is that larger the business, the more resources it can spend on EMS adoption next to the more visible stature of the firm. Customer and employee influences, which can be related to social and institutional pressures, are also key factors. Finally McKeiver and Gadenne also found out that service industry consider their environmental impact as negligible, in other words they do not believe environmental management to be suitable for their businesses.

Small businesses display the personal characteristics, values and commitment of their owners (Fuller, 2003) and company managements of SMEs may consist of a single manager (Ottesen et al., 2004). Therefore, investigating the values and attitudes of the managers may give some information about the actions of SMEs. Beliefs depict a person's opinions, ideas and inferences about someone or something. An attitude is the tendency of one person to react negatively or positively

towards a certain person or thing in the environment. Attitudes result in an intended behavior, which is an inclination to act in a certain manner. The intended behavior may or may not be realized (Schermerhorn, Hunt & Osborn, 2005). In an example; the statement that "my firm lacks adequate environmental management" is a belief which is affected by the underlying value of thinking that protecting the environment is important. This bundle of beliefs and values result in an attitude which involves feeling that the firm should be more committed to the environment and legal environmental procedures. The resulting behavior is endorsement of environmental commitment with certificates." If there exists a contradiction between an individual's attitudes and behavior, it is called cognitive dissonance (Schermerhorn et al., 2005).

As the studies investigated in this section show, SME managers generally have positive beliefs about the environment but they have problems reflecting this positive beliefs into their firms' actions. In other words, they are inconsistencies in managers' attitudes and behaviors. This is called the "SME problem" in literature (Merritt, 1998).

Al Gore states that, to increase the efficiency of the company, making environmental improvements is the best way (Gore, as cited in Walley & Whitehead, 1994). In addition to that, there are increasing number of projects that both benefit the financial status of the company and environment. Therefore, it is very difficult to argue against the sustainable development rhetoric, which brings win-win solutions to environmental problems. However, it is very hard to realize profits while saving the environment. Environmentally conscious strategies and well-designed environmental management systems are very costly. Most of the big companies' costs are significantly increasing with low financial returns, due to environmental projects. Even though win-win solutions exist, they are still very rare. Saving the environment is generally expensive and most of the great environmental goals have high costs. However, this is a cost that must be incurred in order to achieve sustainable development which was defined by United Nations World Commission on Environment and Development as the "development that meets the needs of the present without compromising the ability of future generations to meet their own needs" (Brundtland Commission, 1987). Managers should select the options of

environmental management which have the most beneficial impacts on environmental performance while utilizing as minimum resources as possible. Therefore, they must search and investigate for better systems continuously (Walley & Whitehead, 1994). Simpson, Taylor and Barker's research also supported Walley & Whitehead's idea. Their questionnaire resulted that, SMEs generally do not believe that costs can be cut and it is very hard to gain competitive advantage by environmental innovations. Moreover, most of them in that study had failed to achieve a competitive advantage over their competitors by adopting environmentally sensitive practices (Simpson, Taylor & Barker, 2004).

On the contrary, Porter indicated that win-win situations are quite possible with thorough analysis and careful work. Proper environmental plans can lead to decreased costs or increase the value of the products. Moreover, pollution can be considered as an economic waste that leads to inefficiency. In 1995, Porter and van der Linde claimed that companies should use productivity instead of pollution control and problems should not be solved by end of pipe solutions. Furthermore, companies should consider environment as a competition factor rather than a cost. Even though most companies do not believe in the benefits of environmental investments, reality is that there are many benefits of improving environmental performance and integrating environmental impacts into strategic management decisions (Porter & van der Linde, 1995(a); Porter & van der Linde, 1995(b); Epstein, 1996). Finally, Epstein and Roy's research showed that in order to maintain competitiveness, SMEs need to consider environmental issues while making capital investment decisions. Moreover, going beyond compliance and being proactive is getting popularity among large firms, since it is the most cost effective and environmentally responsible strategy (Epstein & Roy, 2000).

2.3 Categorization of Firms According to Environmental Commitment

The approaches which are taken towards environmental (green) issues are being described and classified in many ways in literature, but there is not a significantly accepted model that exists in environmental management area. Therefore, a widely accepted description is needed and it can be achieved by the evaluation of the most common environmental management strategy models (Hass, 1996). One of the environmental management strategy models is the Hunt and Auster model which was developed in 1990. Later, the model was used by other researchers for classifying environmental management strategies (Hass, 1996; Henriques & Sadorsky, 1999).

Hunt and Auster divided corporate environmental strategies into five levels according to several criteria, which are: beginner, fire fighter, concerned citizen, pragmatist and proactivist (see Table 1.2). “Beginners” try to escape from environmental problems and turn their back to them. They usually give responsibilities to high level employees in case of an environmental issue. Small companies commonly fit in to this class. Companies falling into this category generally do not define any policies on environmental requirements and none or very little formal reporting is made. Hunt and Auster claimed that there is surprisingly large number of corporations belonging to this class. Finally, companies which do not carry significant environmental risks also fall into this category (Hunt & Auster, 1990).

Table 2.1: Development Stage of Corporate Environmental Management Programs of Hunt and Auster

Criteria	Stage One "Beginner"	Stage Two "Fire Fighter"	Stage Three "Concerned Citizen"	Stage Four "Pragmatist	Stage Five "Proactivist"
Degree to which Program Reduces Environmental Risk	No Protection	Minimal Protection	Moderate Protection	Comprehensive Protection	Maximum Protection
Commitment					
General Mindset of Corporate Managers	Environmental management is unnecessary	Environmental issues should be addressed only as necessary	Environment management is a worthwhile function	Environmental management is an important business function	Environmental management is a priority item
Resource Commitment	Minimal resource commitment	Budgets for problems as they occur	Consistent, yet minimal budget	Generally sufficient funding	Open-ended funding
Support and Involvement of Top Management	No involvement	Piecemeal involvement	Commitment in theory	Aware and moderately involved	Actively involved
Program Design					
Performance Objectives	None	Resolve problems as they occur	Satisfy corporate responsibility	Minimize negative environmental impacts	Actively manage environmental matters
Integration with Company	Not integrated	Involved with other departments on piecemeal basis	Minimal interaction with other departments	Moderate integration with other departments	Actively involved in other departments
Reporting to Top Management	No reporting	Exceptions reporting only	Generates voluminous reports that are rarely read	Consistent and targeted reporting	Personal meetings with managers and board of directors
Reporting Structures	None	Exceptions reporting only	Internal reporting only	Mostly internal with some external reporting	Formalized internal and external reporting mechanisms
Involvement with:					
Legal Counsel	None	Moderate	Moderate	High	Daily
Public Relations	None	None	Moderate	High	Daily
Manufacturing / Production	None	None	None	Moderate	Daily
Product Design	None	None	None	Minimal	Daily

***Source*: Hunt, C.B., & Auster, E.R. (1990). Proactive environmental management: Avoiding the toxic trap. *Sloan Management Review, 31(2),* 7-18.**

Second group, the “fire fighters” may have some employees who pay attention on environmental matters and spend their time on this concern or they may have a small crew for environmental crises. Due to inadequate funding many companies fall into this group. These companies remain in risk because the small crew only has time to deal with top priority items. In other words, things need to be broken first in order to be fixed. According to Hunt and Auster, a large number of small and medium enterprises who face possibilities of damaging the environment fall into this group, because of the fact that they have to do something for environmental problems but with the least resources possible. Moreover, there are some large companies falling into this group because their managers do not believe that environmental matters should be a top priority.

“The concerned citizen” group has good plans about environment; however they have some problems in practice and implementation. Environmental departments with low levels in hierarchy and little power exist, but there are no effective environmental programs. Lack of authority and high level managers’ involvement are the main problems for the concerned citizens. Media pressure forced some companies to care for the environment and spend money for programs, which were later left alone without support from upper level management.

Companies belonging into the “the pragmatist” group do not give instant responses to environmental issues but investigate their problems in detail and manage them carefully. They have environmental departments with enough funding which provide trainings and educations for employees. Pragmatist companies spend their resources in order to avoid any possible environmental problems. The main deficiency in these companies is that environmental management is not a top priority in business strategy, there may be some problems with funding sometimes and the power of the department may be a little bit low in the organization. These companies, being few in number, generally enter in to this group after some costly pollution problems which they or their competitors suffer. Many of these companies are chemical and manufacturing companies.

The final and fifth group is the “proactivist”. The environmental department is well developed with high-qualified personnel. These companies carry the environmental protection concept beyond the compliance with regulations and

prevention by training all of their employees about environmental awareness. Environmental protection is a top priority among the firm with clear goals of environmental performance. Successful systems are employed and spread all around the company. Along with the strong involvement of upper level management, periodic meetings are held and direct reporting relationships exist (Hunt & Auster, 1990).

In their organizing framework, Rugman and Verbeke described the impact of environmental regulations on the firm by a two by two matrix. One dimension of the matrix is the impact of environmental regulations on industrial versus environmental performance which can be conflicting, meaning that industrial performance is hard to satisfy along with the success in environmental quality, and complementary, when they go hand in hand. The other dimension is about whether the firm is dynamic (implements a longitudinal approach and evaluates the impacts of environmental regulations in detail) or static (immediate actions are taken, impacts are considered briefly). The two by two matrix is divided into four quadrants (see figure 1.1) which are static-conflicting (quadrant 1), dynamic-conflicting (quadrant2), static-complementary (quadrant3), dynamic-complementary (quadrant 4) (Rugman & Verbeke, 1998).

The first quadrant belongs to firms which only comply with environmental regulations and do not invest into environmental performance because they do not believe that there are any advantages related to green technologies. They can be considered as beginners or fire fighters in terms of Hunt and Auster's classification. However, markets pressure and benefits may shift them to the fourth quadrant (Clarke & Esty,1994 as cited by Rugman & Verbeke, 1998).

Second quadrant reflects Walley and Whitehead's perspective, where companies do not seek for development of green capabilities because of the conflicts between industrial and environmental performance. The companies that fall into this quadrant commonly try to minimize their negative impacts of the environment, instead of integrating environmental concerns in their value chain.

Third quadrant is where the most of the win-win solutions in the literature is captured. These companies invest in environmental plans, to increase both their industrial and environmental performances. Fourth quadrant is similar to what Porter

claimed about win-win situations being possible with comprehensive analysis and careful work. Companies implement environmental plans and programs with thorough analysis and reach a better level in terms of both industrial and environmental performance.

Impact on industrial versus environmental performance / Time horizon of managerial response	CONFLICTING	COMPLEMENTARY
STATIC	1	3
DYNAMIC	2	4

Figure 2.1: The impact of environmental regulations on firms

CHAPTER 3

HYPOTHESES

When the literature about managerial responses is examined, it is evident that there are many external and internal factors that affect the responses of managers of SMEs to environmental issues. If the general factors that affect a manager to improve his firm's environmental performance be found, then these factors can be used or developed to increase the environmental sensitivity of SMEs. Managerial point of view is a fundamental part of environmental performance, given that managers have the authority to integrate environmental concerns into manufacturing processes, further reduce pollutants, implement environment management plans, etc. Thus it is very important to determine the factors that affect the decisions given by managers about the environment. The aim of this study is to examine what factors make a difference in the behaviors of SME managers regarding environmental issues. Literature suggests that managers who are faced with more external (i.e. media, government regulations, etc.) and internal (i.e. employees, suppliers, top managers, etc.) pressures tend to show greater levels of responsiveness. However, these findings are confined only to the managers in developed countries. A study to replicate or even enhance the findings of previous research is needed in a developing country like Turkey. This study aims to find which of these factors are most effective in the Turkish sample.

Although similar hypotheses to the following hypothesis H_{1a} were rejected several times in the literature (Hutchinson & Gerrans; 1997; Petts et al., 1998; Schaper, 2002; McKeiver & Gadenne, 2005), as mentioned in previous section, it is also argued that small businesses reflect their managers' personal values. Therefore, the effects of the personal beliefs on the environmental commitment of the company should be examined and that leads to the research's first hypothesis.

Hypothesis 1a (H_{1a}): There is a positive association between a managers' personal beliefs about the relationship between natural environment and mankind and their firms' commitments to the environment.

Studies in the topic suggest that external pressures have considerable effects on the environmental commitments and the EMS implementation performance of the firms (Ludevid Anglada, 2000; Biondi et al., 2000) and the following hypothesis can be claimed.

Hypothesis 2a (H_{2a}): There is a positive association between the social and institutional pressures on managers and their firms' commitments to the environment.

Since SMEs are small companies by definition, their abilities play an important role in controlling their impact on the environment. Neglecting their own environmental impact and relating their failures to their resource problems are the main getaway points of SMEs from environmental debates (Gerrans & Hutchinson, 1998; Petts et al., 1998; Smith et al., 2000; Hillary, 2000; Biondi et al., 2000; Schaper, 2002; McKeiver & Gadenne, 2005). The beliefs of managers about their ability and capacity to control their environmental activities are therefore important.

Hypothesis 3a (H_{3a}): There is a positive association between the managers' confidence in their and their firms' ability to control its impact on the environment and their firms' commitments to the environment.

The accepted environmental governance principles of a manager show his beliefs about the environment and its stakeholders and how environmental governance ought to be. It is important to understand how the managers' way of thinking about the relationships between natural environment and industrial activities influence their firms' commitment to environment. It is anticipated that if managers have strict environmental governance principles, then they are more sensitive to environment as well.

Hypothesis 4a (H_{4a}): There is a positive association between the managers' accepted environmental governance principles, sensitiveness to environment and natural resources and their firms' commitments to the environment.

After the accepted environmental governance principles of the manager are analyzed, the perceived responsibilities of the manager and his firm for the environment, whether he thinks that his responsibilities are only at the company level or not and whether it is the government's job to protect the environment or not should be investigated for an effect on commitment.

Hypothesis 5a (H_{5a}): There is a positive association between the managers' perceived personal and firms' responsibilities for the environment and natural resources and their firms' commitments to the environment.

As Nakamura et al. had done in 2001, this study also aims to investigate the relationship between environmental commitment and environmental certification and whether the same determinants are effective when obtaining environmental certifications or not.

Hypothesis 1b (H_{1b}): As the managers' personal beliefs about the relationship between natural environment and mankind gets more positive, the likelihood of their firms' getting an environmental certification is higher.

Hypothesis 2b (H_{2b}): As the social and institutional pressures get more intense on the managers, the likelihood of their firms' getting an environmental certification is higher.

Hypothesis 3b (H_{3b}): As the managers' confidence in their and their firms' ability to control its impact on the environment increases, the likelihood of their firms' getting an environmental certifications is higher.

Hypothesis 4b (H_{4b}): As the managers' accepted environmental governance principles get stricter, more sensitive to environment and aim more to save the

natural resources, the likelihood of their firms' getting an environmental certification is higher.

Hypothesis 5b (H_{5b}): As the managers' personal and firms' responsibilities for the environment get intensive and more comprehensive according to themselves, the likelihood of their firms' getting an environmental certification is higher.

A firm holding an environmental certificate should be more committed and more responsible to environment. On the other hand, the reverse relationship is also likely, since a firm which is committed to the environment would want to have an environmental certification to both authenticate its performance and to develop its relationship with public and other companies. Therefore, this leads to the final hypothesis of this research:

Hypothesis 6 (H_6): As the firms get more committed to environment, the likelihood of their firms' getting environmental certifications is higher.

CHAPTER 4

METHOD

The determinants of environmental commitment of the small and medium enterprises (SMEs) were the primary subject of research in this study. In addition to that, the determinants that affect a SMEs ownership probability of a certification related to environment were also investigated.

4.1 Sample

The owners, general managers, partners and high level managers of SME's are dealt with in the analysis. The responses of managers, who have the authority to manage their firm's environmental strategy and who have detailed knowledge about the company's impact on the environment were received. The main purpose was to investigate the relationship between the environmental commitment of the firm and the demographic structure of the manager, manager's beliefs and perceived abilities, the social pressures on the firm, the governmental regulations and the responsibilities of the manager.

Eighty participants filled out the questionnaire for this study. The participants were recruited from seven manufacturing-related expositions which were made in Ankara through August 2007 to March 2008. The sample comprised of the attending micro, small and medium sized firms which make production or have activities directly affecting environment. The cooperativeness of the managers played an important role in collecting the data. The list of the fairs and the size of the sample is given below in the Table 4.1.

Table 4.1: List of Fairs

Name of the Fair	Total Number of Firms	Participant Firms	Collection Percentage
AYMOF Shoe Fair	104	18	17%
TURKEYBUILD Construction Fair	70	7	10%
AGROTECH Agriculture and Food Products Fair	50	10	20%
ANKATEK'2007 Machinery Production, Metal Casting and Automation Systems Fair and KAYNAK'2007 Welding Machines, Equipments and Related Industries Fair	62	15	24%
Turkey Furniture and Decoration Fair 2007	50	7	14%
Turkey Furniture and Decoration Fair 2008	60	10	17%
2nd City Fairs ANKARA	54	13	24%
TOTAL	**450**	**80**	**18%**

In the expositions, the majority of the firms were SMEs and the large sized enterprises were removed from the sample in order to fit the purpose of this study. Moreover, in all of the expositions, there were at least 10 companies which only made importation, in other words which were not involved in any kind of manufacturing activity. Therefore, those companies were not relevant to our research due to their negligible impact on the environment and were removed from the sample as well.

4.2 Data Collection and Analysis

In the expositions, after providing a brief description of the research and having a conversation with the participants, the researcher distributed the questionnaires to each participant. The aim of the conservation was to assess whether the respondent and the firm were suitable for the research. Some of the participants wanted to answer questions verbally, therefore the researcher himself

filled out the questionnaire according to the answers given by the respondent. However, most of the participants completed the questionnaire unaccompanied and gave it back to the researcher after 15 to 20 minutes.

4.3 Measurement Instrument

Nakamura et al. (2001) used two types of decision models in their research for the determinants affecting Japanese companies to integrate environmental objectives in their decision making processes. The first type, profit maximization model, is related to the financial structure of the firm, which uses the financial consequences of the firm's past decisions related to the environment. In their second decision model type, utility maximization model, in addition to the profit maximization model, Nakamura et al. assumed that a firm's environmental commitment is determined by the manager's basic environmental values, the level of pressure from government and civil society, their confidence in themselves and in their firm's ability to control their firm's impact on the environment, perceived principles of environmental governance and regulations and their perceived responsibilities against environment (Nakamura et al., 2001).

In this research, the Turkish version of the Nakamura et al.'s questionnaire was used to assess the determinants of managerial responses of Turkish SME's to environmental issues (see Appendix). The questionnaire begins with an informed consent which the respondents are expected to read. This informed consent briefly describes the research and its purpose. Afterwards, the questionnaire proceeds with demographical questions such as age, gender and educational levels of the respondent. Subsequently, there are demographic questions specific to the manager and the firm such as the title and tenure of the manager, sector, age, size of the company, whether there exists a union within the company or not, owned certifications, whether they are donating to a non-governmental organization related to environment or not, do they have any environmental protection system such as a wastewater treatment plant, air pollution filter etc. and finally their supply of tap water. These questions are followed with forty-three questions of Nakamura et al.'s research which were translated into Turkish one by one. In their research, these

forty-three questions were divided into 6 different variables through factor analysis. In this research, according to the factor analysis results of Nakamura et al.'s research, the first sixteen questions are classified as the environmental commitment of the company, which is the dependent variable. The succeeding questions represent the dependent variables which are personal beliefs about the environment and its relationship with mankind, institutional and social pressures, self-confidence of managers in their abilities to control their firms' impact on the environment, accepted government principles, their own and their firms' environmental responsibilities from their point of view.

The translation was made by the researcher and then reviewed by the thesis advisor. Since the original questionnaire was designed for large sized enterprises, some minor changes were made in the questions in order to adapt them to our research which is about SMEs. The word "senior executives" was changed to "top managers/senior employees" because of the fact that, SMEs generally have a single manager and it is hard to talk about senior executives especially for small and micro-sized companies. A great effort was spent in order to make questions easy to understand, since many SME managers are elementary school graduates. In addition to that, each word was selected thoroughly so that the items would not lose any meaning during translation. After the translation, valuable opinions of Hayri Beygü Solmaz, the manager of the ODTÜ-KOSGEB Technology Development Center were received. His feedbacks were generally positive, though some minor changes were made in line his suggestions particularly in the cover page which includes the informed consent. Finally, the approval of Middle East Technical University Human Subjects Ethics Committee was taken. The committee agreed that the questionnaire is ethical and applicable to human subjects.

Participants responded to questionnaire items on a 6 point Likert scale in which 1 represents Strongly Disagree and 6 represents Strongly Agree. Some questions were reversed in the original questionnaire, therefore in Turkish version, they were used as reversed as well. The reversed items, which have negative meanings about the environment and company policies, are the 16^{th}, 20^{th}, 28^{th}, 29^{th}, 30^{th}, 31^{st}, 32^{nd}, 38^{th}, 39^{th} and the 40^{th} questions.

4.4 Control Variables

In the research, age, certification ownership, education and size were selected as control variables. These variables were selected based on the previous research that is reviewed in the second chapter and most of the recent studies hypothesize the positive or negative effect of these factors on environmental performance or at least utilize them as control variables. Therefore, by using these variables as control variables, first, their effects on dependent variables are measured and second, the effect of independent variables are assessed without the influence of the control variables.

4.5 Sample Characteristics

4.5.1 Participant Profiles

The researcher has collected data from 80 people from 10 different industries at 7 different fairs. The seven expositions were mainly about shoes, construction, agriculture, furniture, machinery production and landscape architecture industries (see Table 4.2 and Figure 4.1). There are other industries as shown in below that attended fairs even though the fairs were not exactly relevant to them.

Table 4.2: List of Industries in the Sample

Industries	Frequency	Percent
Shoes	16	20.0
Package	2	2.5
Construction	8	10.0
Agriculture	10	12.5
Textile	1	1.3
Furniture	17	21.3
Machinery Production	15	18.8
Iron and Steel	4	5.0
Landscape Architecture	6	7.5
Substructure Production	1	1.3
Total	80	100.0

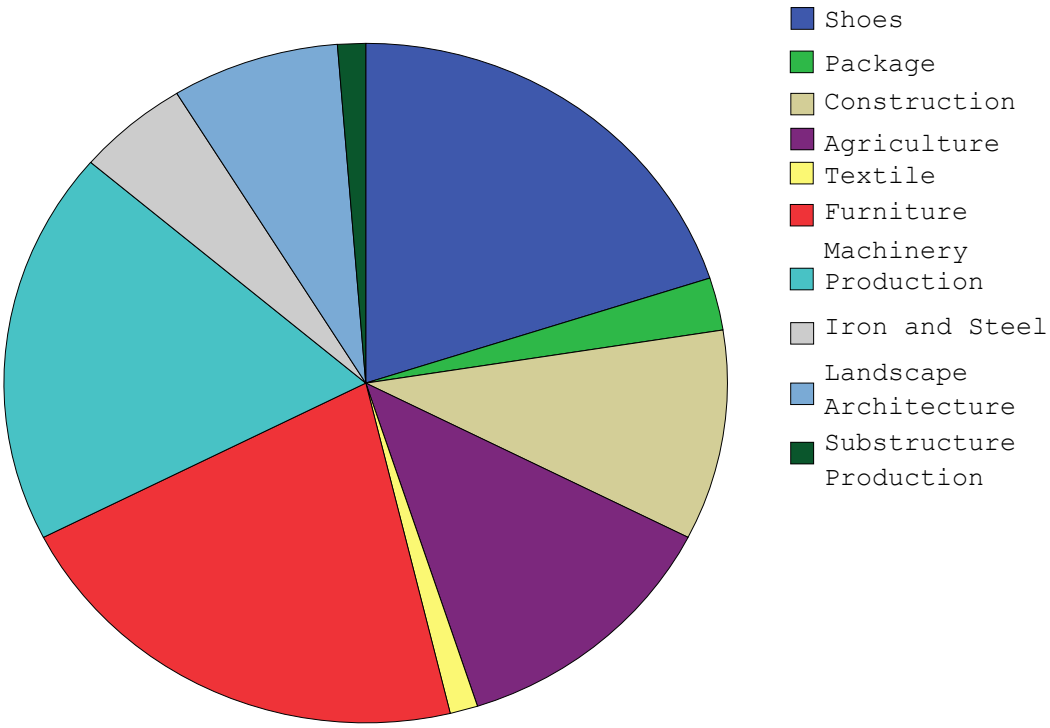

Figure 4.1: Distribution of Sectors

The question about the respondents' title was an unprompted question. Therefore, titles of the participants varied among owner, partner, CEO (General Manager) and high level manager. Since the question was unprompted, there is a possibility that some owners and partners may have filled that question as "general manager". Majority of the respondents was owners and high level managers. The respondents were asked about their awareness of environmental impacts of their firms and whether they had the authority to change environmental plans of their company or not. In order for the research to yield reliable results, an affirmative answer to this question had to be sought among all of the respondents. Further statistics are shown in the Table 4.3.

Table 4.3: Title Statistics

	Frequency	Percent
Owner	32	40.0
CEO	15	18.8
Partner	5	6.3
High Level Manager	28	35.0
Total	80	100.0

Among the 80 respondents in the sample, 67 of them filled the question related with age. Frequency analysis showed that most of the managers' ages are clustered in the region of 35-40 years with a mean of 39.43. Table 4.4 shows the statistics of the ages of the respondents and Figure 4.2 shows the age distribution.

Table 4.4: Age Statistics

	N	Minimum	Maximum	Mean	Median	Std. Deviation
Age	67	23	68	39.43	38.00	10.455

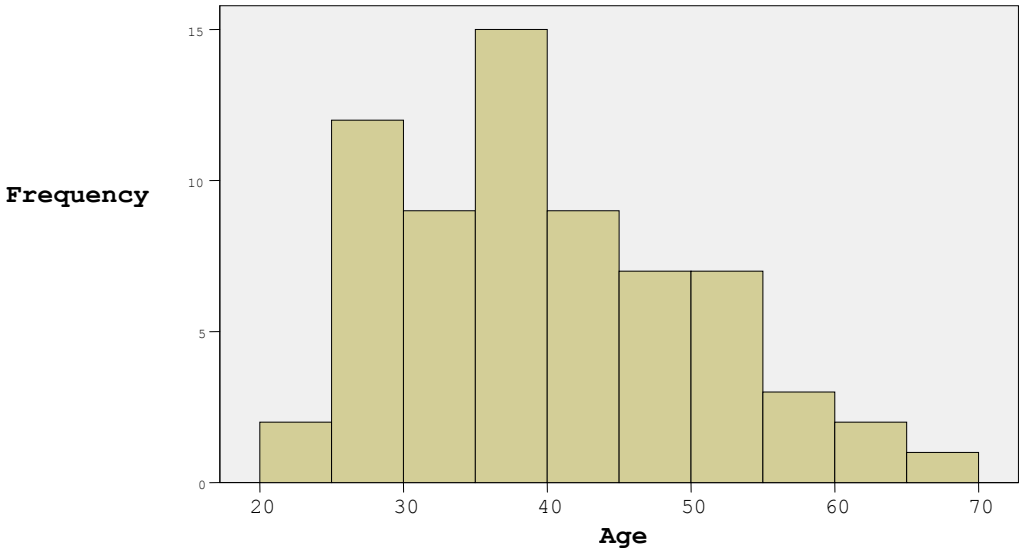

Figure 4.2: Age Distribution

All of the 80 respondents in the sample answered the gender question. 76 of them were male while there were only 4 female participants. Further statistics are given in the Table 4.5.

Table 4.5: Gender Statistics

	Frequency	Percent
Male	76	95,0
Female	4	5,0
Total	80	100,0

All of the 80 respondents in the sample filled in checkboxes appropriate to their education level. Respondents with high level of education were more willing to fill the questionnaire compared to those with lower education level. Therefore, the percentage of the respondents with a higher education degree may be a little elevated than the actual distribution. Table 4.6 shows the statistics of the education level of the respondents.

Table 4.6: Education Level Statistics

	Frequency	Percent
Primary School Graduate	19	23.8
High School Graduate	25	31.3
Bachelor's Degree	23	28.8
Master's Degree	13	16.3
Total	80	100.0

The tenure of the respondents varied from one year to fifty years with a mean of 10.04 years. Table 4.7 shows additional statistics regarding the tenure of the respondents. Moreover, Figure 4.3 demonstrates the distribution of the tenures of the respondents.

Table 4.7: The Length of Work Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Median
Tenure	79	1	50	10.04	9.125	8.000

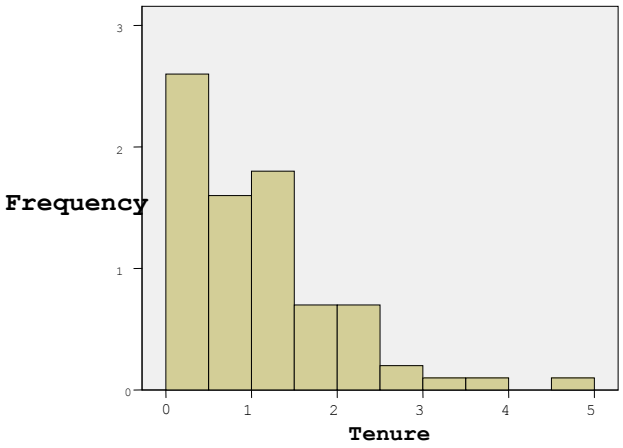

Figure 4.3: Tenure of the Respondents

The companies in the sample represented managers that worked in their companies between a year to 52 years (see Table 4.8).

Table 4.8: Length of Operation

	N	Minimum	Maximum	Mean	Std. Deviation
Operation (Years)	80	1.00	52.00	15.8688	12.13472

According to European Union's breakdown for SME sizes, companies participated can be divided into three segments, as shown in Table 4.9.

Table 4.9: Size of the Companies

	Frequency	Percent
Micro	33	41.3
Small	37	46.3
Medium	10	12.5
Total	80	100.0

Only two companies claimed that they have a union in their company. In addition to that, as Table 4.10 shows 27 of the firms had quality certification, while only one of them had both ISO14001 and ISO9001. 26 of the companies told that they are donating to a non-governmental organization related to environment. Finally, 40 companies had solid waste management systems, 17 told to have air filters and 8 of them had a wastewater treatment plant while 29 companies did not have any systems to reduce their impact on the environment.

Table 4.10: Certifications

	Frequency	Percent
No	53	66.3
Yes	27	33.8
Total	80	100.0

CHAPTER 5

RESULTS

5.1 Reliability Analysis

The data received from the questionnaires was used to find the determinants of the environmental commitment level and the certification ownership status of the firms. However, according to have a stable and consistent result, reliability analyses were made. The Cronbach's Alpha reliability values show the reliability of the factors and usually vary between 0 and 1, although there is no lower limit to the coefficient. As the Cronbach's Alpha reliability value gets closer to 1.0, the internal consistency of the dimension increases. George and Mallery (2003, p.231) explained the meaning of Cronbach's alpha values as: 1.0 – 0.9 Excellent, 0.9 – 0.8 Good, 0.8 – 0.7 Acceptable, 0.7 – 0.6 Questionable, 0.6 – 0.5 Poor and 0.5 > Unacceptable (Gliem & Gliem, 2003).

In this research, the variables having Cronbach's alpha values greater than 0.5, in other words, variables which do not fall in unacceptable region were included in the analysis. Only the last variable "Personal and Firms' Responsibilities for the Environment" had a Cronbach's alpha value lower than 0.5 (0.07) and therefore it was removed from the analysis. Tables 5.1, 5.2, 5.3, 5.4, 5.5 and 5.6 show the reliabilities of the variables, statements, their means and standard deviations. Reversed items are indicated with (rev.), so their means and standard deviations are not the actual values but the values that were calculated from their reversed versions.

Table 5.1: Firm's Environmental Commitments. (COMMIT)

Item No	Statement	Mean	Std. Deviation
E1	My firm has detailed written policies concerned with protecting the environment.	3.5000	1.82111
E2	Environmental protection is an explicit component of my firm's strategic (long-term) plan.	3.9375	1.81655
E3	Most people in my firm are very aware of the need to protect the environment and are well-informed about our environmental policy.	3.5750	1.78443
E4	The people in charge of environmental protection in my firm have sufficient authority.	3.7500	1.69512
E5	Many top managers in my firm are personally and actively involved in developing environmental protection policies and monitoring their implementation.	3.4304	1.70393
E6	My company has a written environmental policy that states goals for improving our environmental performances.	3.1125	1.79305
E7	Clear and strong signals have been sent from our top managers that better environmental management is a requirement in our firm, not a choice.	3.4304	1.77667
E8	The environmental protection department of my enterprise is headed by a senior executive.	3.4051	1.91938
E9	Environmental managers or those chiefly responsible for environmental management in my firm have adequate authority to get involved in and have a say in decision making on the investment plans of my enterprise	3.5125	1.87585
E10	My firm has a long term plan to lower our pollution control costs in order to be more competitive in the market	3.0253	1.75004
E11	Environmental concerns have been integrated into the decision-making of my organization's senior management	3.3500	1.67710
E12	Environmental protection is an integral part of my company's culture	3.9000	1.85281
E13	In my firm we are constantly looking for advances in technology to reduce our pollution levels	3.9750	1.47532
E14	The people in charge of environmental protection in my firm have the authority to stop operations if they perceive a significant risk of environmental degradation	3.8125	1.72174
E15	Ideas on pollution management are shared freely among lower, middle, and upper levels within my firm	3.6625	1.88897
E16 *Rev.*	There is no consensus in my firm about the desirable level for environmental protection	2.9130	.96670

Cronbach's Alpha: 0.95

The first variable (COMMIT) tries to assess the environmental commitment level of the respondent's firm, which is used as a dependent variable in the first two regression models. Environmental commitment level represents whether environmental matters are integrated into the decision making mechanism and the policies of the firm. The existence of employees working for reducing the environmental impacts of the firm and the authority of them in the firm are also important aspects of environmental commitment. Moreover, it is a factor that improves with the involvement of management in environmental issues. The reliability of this variable is excellent. However, the high reliability value may indicate problems. Similarity between the questions may be the reason behind this condition. The questions in this factor are interrelated. For example, when a company has a detailed written policy about the environment, generally environment becomes an important part of their strategic plan or environmental concerns get integrated into the decision making processes of the firm.

Table 5.2: Personal Beliefs about the Relationship between the Natural Environment and Mankind (BELIEFS)

Item No	Statement	Mean	Std. Deviation
E17	When humans interfere with nature it often produces disastrous consequences	5.1013	1.48063
E18	Mankind should live in harmony with nature rather than modify it for its own needs	5.3375	1.28224
E19	The earth is like a spaceship with only limited room and resources	4.7125	1.74439
E20 *Rev.*	Humans have the right to modify the natural environment to suit their needs	4.9333	1.69387
E21	Advances in technology will eventually solve the problem of environmental degradation	2.8861	1.65344

Cronbach's Alpha: 0.50

The second variable (BELIEFS) aims to find a result that indicates the shape of the manager's beliefs about the relationship between natural environment and mankind. As the mean values in this variable increase, it shows that managers believe humans should protect the nature and should not modify it in a careless way. This variable has poor reliability. This may result from the last item (E21) with a lower mean compared to other questions. Apparently, respondents' beliefs are strong, considering the need for living in harmony with nature and limited resources

of the earth, along with believing humans have no right to modify the nature according to their needs. However, it seems that they do not trust in technology, considering its effect on environment.

Table 5.3: Institutional and Social Pressures (PRESSURE)

Item No	Statement	Mean	Std. Deviation
E22	Government has set some pollution production standards, so we have to make sure that we do not violate them	4.5750	1.38505
E23	Newspapers and TV have created a lot of concern about environmental issues, and this has put pressure on our company to improve our environmental performance	3.6375	1.55281
E24	My company's labor union has influenced our environmental practices	3.5000	1.51186
E25	A pollution incident, if reported by the public media, could ruin our corporate image and market, so we must pay full attention to such issues before they become a public concern	4.7179	1.38617
E26	My company is subject to a lot of governmental regulation regarding environmental matters	4.1772	1.42100
E27	My company's environmental practices have been influenced by what other industrial organizations have done	3.6582	1.60605

Cronbach's Alpha: 0.55 (without E24)

This variable (PRESSURE) tries to evaluate how much external pressure (Government, media, competitors, customers etc.) the managers think that they are exposed to. As the mean values of the items gets higher, it indicates that they feel more pressure under those circumstances or by those stakeholders. This variable has poor reliability as well. Item E24 was removed because only two of the respondent firms claimed to have a labor union within the company while eight of them answered the question, even though it was written in the questionnaire that companies without a labor union should not answer that question. To sum up, calculations using this factor were made with five questions, excluding E24.

Table 5.4: Confidence in Their Firm's Ability to Control Its Impact on the Environment (ABILITY)

Item No	Statement	Mean	Std. Deviation
E28 *Rev.*	My firm's contribution to environmental pollution is small and hardly makes a difference	2.7436	1.75338
E29 *Rev.*	I have insufficient knowledge to influence the environmental practices of my firm	3.6026	1.70880
E30 *Rev.*	I have insufficient authority to influence the environmental practices of my firm	4.4000	1.70628
E31 *Rev.*	My firm cannot act on its own to improve the environment because we have insufficient resources	2.6282	1.67717
E32 *Rev.*	My firm cannot act on its own to improve the environment because we must remain competitive	2.7403	1.53773

Cronbach's Alpha: 0.52

The ABILITY variable tries to evaluate how much the respondent manager has confidence on his and his firm's abilities to control its impact on natural environment. As the mean values increase, it indicates that managers are confident that they have full ability to control their effect on environment. All the questions for the ability variable are reversed. It is also interesting that E31 and E32 have lower values, which means managers believe that lack of resources, need of preserving competitiveness are obstacles to overcome through their way to increase their environmental performance. Moreover, they consider their impact on the environment as negligible. As stated before, most of the companies in previous research believe that their contribution is insignificant as well, even though their cumulative impact is considerable. Finally, this independent variable has an poor reliability, due to low inter-item correlations.

Table 5.5: Accepted Environmental Governance Principles (GOVERN)

Item No	Statement	Mean	Std. Deviation
E33	Polluters should pay fully for the damage they cause, and be responsible for cleaning up their pollution	5.2375	1.27531
E34	Those who use natural resources should pay the full cost of using them even though the resources are public	4.6234	1.64616
E35	An activity should only proceed if the risk to the environment from the activity can be fully evaluated and controlled	4.8846	1.31188
E36	Those firms which use energy inefficiently are as responsible for the environmental damage as those firms which directly pollute their immediate environment	5.1125	1.24264
E37	Users of goods produced using energy intensive processes should pay for the environmental damage caused by their production	4.8101	1.45024
E38 *Rev.*	A certain amount of environmental damage is tolerated if there is to be economic growth	4.3875	1.62647

Cronbach's Alpha: 0.80

The variable GOVERN aims to measure the strictness of the environmental governance principles of the respondent. As the principles of the manager get more strict and harsh, mean values of the items increase. All of this factor's items have higher means, compared to other variables. This variable has a good reliability. It seems that managers agree that environmental damage should be punished and the resources should be used effectively. However, it should be noted that it is easy to punish unidentified people and these questions are not internal, in other words, they talk about anonymous polluters and firms. Nevertheless it is clear that managers have no problem with believing natural resources have a monetary value.

Table 5.6: Perceived Personal and Firms' Responsibilities for the Environment (RESPONS)

Item No	Statement	Mean	Std. Deviation
E39 *Rev.*	Complying with regulations and preventing environmental incidents are all that is required from a business enterprise like us	2.3500	1.43289
E40 *Rev.*	It is the role of government, not the enterprise, to protect the environment	4.2500	1.57110
E41	It is the role of each individual, no matter what is his or her position, to see to it that the environment is protected	4.9750	1.51762
E42	Government regulation is effective in protecting the environment	2.9740	1.49238
E43	I feel it is my personal responsibility to ensure that my organization improves its environmental performance	4.6795	1.23753

Cronbach's Alpha: 0.07

Table 5.7: Frequency Table of the Variable RESPONS

Item No	Frequencies						Total
	Strongly Disagree	Disagree	Slightly Disagree	Slightly Agree	Agree	Strongly Agree	
E39	4	5	4	18	20	29	80
E40	21	23	10	12	9	5	80
E41	4	6	3	7	15	45	80
E42	17	18	9	19	11	3	77
E43	4	0	6	19	27	22	78

The RESPONS variable intends to evaluate power of the personal responsibilities of the manager and the firm for the environment according to manager's point of view. This variable is the most interesting variable with the lowest and unacceptable reliability. The differences between the means and answer frequencies give some idea about the low reliability. Considering item E39, managers generally believe that complying with regulations and obeying the rules are enough for them. It is arguable in terms of Hunt and Auster's model, they can be considered as fire-fighters or beginners. Since our research is not based on their model, it is difficult to reach an absolute result. Looking at the Table 5.6 and 5.7, managers have a strong belief in the environmental responsibilities of individuals regardless of their position. Even though the managers only try to avoid

environmental incidents, they also believe that it is every individual's job to protect environment and this overlaps with the "SME problem", which is about the poor reflection of the SME managers' beliefs in their actions.

According to these results, one cannot claim whether SMEs and managers are sensitive to environment or not. However, with comparisons between the means, some conclusions can be reached. Similar to past research in Europe and the rest of the world, SME managers seem to have concerns about the environment. This result could be reached through the questionnaire and the researcher's own observations during the research. Despite their care for environment, managers do not believe that they have an impact on it; moreover they are not aware of the consequences of their environmental activities. For example, all of the managers in the furniture industry think that burning the wood shavings is waste management and none of the managers in the shoes industry know that the adhesives used during the process pollute the environment. Instead, they think that aspirators clean the air. Moreover, when it comes to reducing the environmental impact, it seems that they are not aware of their firm's impact because they talk about how they avoid littering and how they plant trees in their village.

As it can be observed from the mean values of the answers, managers tend to have positive beliefs about the environment. Moreover, they believe that those who pollute the environment must compensate their damage to the environment by both cleaning and paying fines. 56 of the 80 respondents agreed/strongly agreed with the question E33. Looking at the variable about accepted governance principles, it can be realized that managers support the penalties related with the environment while thinking that people who use natural resources should pay compensation.

The first challenge facing the SMEs is growing and expanding; therefore the economic problems that they deal with may affect their choices. However, since the financial status of the SMEs that are dealt with in this study is not fully known, such a conclusion cannot be reached, therefore other motives behind their actions must be sought. On the other hand, it can be seen that according to mean values, E31 has the lowest mean value in its group, which indicates lack of resources is an important reason that constrains a firm's abilities of controlling its impacts on the environment. This can be one of the causes of the SME problem. Another reason behind this

dilemma can be the attribution errors of the respondent managers. Since the polluters in the questions about the accepted environmental governance principles of the manager are anonymous and managers use their resource inadequacy as an excuse of their underdeveloped environmental performance, actor-observer effect and external locus of control may operate here.

Actor-observer effect is the combination of two main attributional biases: The fundamental attribution error and self-serving bias. Fundamental attribution error is the tendency to undervalue the affect of external causes and to overvalue the affect of internal causes such as personal factors when evaluating someone else's behavior. Self-serving bias is the tendency to take credit for successes and deny responsibility for failures. Combining these two biases, the actor-observer effect is the tendency to attribute someone else's behavior to internal causes and one's own behavior to internal causes. External locus of control describes people who believe that external factors which are beyond their control such as fate, luck or outside forces are the reasons behind the things that happens to them (George & Jones, 1996; Schermerhorn et al., 2005).

Even though the scale in this research was not built for assessing the external locus of control levels or the attribution errors of the respondents, according to the definitions, it is just an estimation that these results occurred due to external locus of control and the attribution error of the respondents.

Table 5.8: Correlations Matrix

Variables	Cronbach α	Mean	Std. Deviation	1	2	3	4	5	6	7	8	9	10	11	12
1. COMMIT	0.95	3.954	1.2524	1											
2. BELIEFS	0.50	4.594	.8846	.162	1										
3. PRESSURE	0.55	4.153	.8784	.424**	.264*	1									
4. ABILITY	0.52	3.222	.9724	.148	-.043	-.173	1								
5. GOVERN	0.80	4.842	.9907	.057	.565**	.407**	-.092	1							
6. Age		39.43	10.45	-.056	.163	.117	.038	.171	1						
7. Certification		.3375	.4758	.291**	.046	.266*	.101	.062	.090	1					
8. High School		.3125	.4664	.064	.102	-.176	-.088	-.194	.087	-.025	1				
9. Bachelors		.2875	.4554	.070	-.191	.033	-.036	.046	-.310*	.072	-.428**	1			
10. Masters		.1625	.3712	.241*	.125	.218	.235*	.125	.071	.187	-.297**	-.280*	1		
11. Small		.4625	.5017	.168	-.104	-.116	-.010	.007	.043	.239*	-.139	.352**	-.001	1	
12. Medium		.1250	.3328	.212	.062	.104	.062	-.132	-.193	.290**	.153	-.157	.141	-.351**	1

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

5.2 Correlations

As it can be seen from Table 5.8, the correlations between dependent variable (commitment), independent variables (beliefs. pressure. ability. governance) and the control variables (the age of the respondent, whether the company has a quality certification or not, whether the respondents are last graduated from high school or not, whether he or she last got bachelor's degree or master's degree or not, whether his or her company is a small or a medium sized company or not) are calculated. The 8^{th}, 9^{th}, 10^{th}, 11^{th} and 12^{th} variables are coded using dummy variable coding (Miles & Shevlin, 2001). The reason behind using dummy variable coding is that, we cannot use the education level of the respondent in a single variable because there is not a quantitative difference between primary school and high school or other degrees. Therefore, instead, primary school level is considered to be the reference group and new variables are created in order to identify the education level of the respondents. For education, three new variables were created referring to high school graduates, bachelor's degree and master's degree. Primary school graduates are shown with "0" in all of the three variables and others denoted by "1" in only one of them, appropriate to their education level. The dummy variable coding method was also used for company sizes. Companies having less than 10 employees which are micro-sized companies, are indicated by 0's in both of the variables named "small" and "medium". Small companies are indicated by a "1" in the variable "small" and medium sized companies are indicated by a "1" in the variable "medium".

Table 5.7 shows that there is a positive and significant correlation between independent variable PRESSURE ($p<0.01$, two-tailed) and the dependent variable COMMIT. Moreover, having a certification ($p<0.01$, two-tailed) and having a master's degree ($p<0.05$, two-tailed) are correlated with COMMIT as well. It is interesting that, there is also a correlation between PRESSURE and BELIEFS ($p<0.05$, two-tailed), PRESSURE and GOVERN ($p<0.01$, two-tailed) and GOVERN and BELIEFS ($p<0.01$, two-tailed). Moreover, there is also a significant correlation between bachelor's degree and age of the respondents ($p<0.05$, two-tailed). Despite

the correlation, collinearity is not a problem in the model. The collinearity statistics in Table 5.10 show that the variance inflationary factors (VIF) of all the variables are less than 2.5, meaning that they are acceptable. In literature, variables having VIF's greater than 10 are considered to have serious collinearity problems (Montgomery & Peck, 1991). There are also negative correlations between variables indicating the education level of the respondent but since these variables are interrelated, it is understandable that they have collinearity. The same collinearity exists for the size variables which are coded by dummy variable coding and this explains the negative signs on the correlation coefficients as well.

The significant correlations between the independent variable PRESSURE and the dependent variable COMMIT support one of the hypotheses of this study. The questions in the GOVERN factor are related to principles of the respondent. It can be argued that these principles can be affected by institutional and social pressures and that explains the correlation between GOVERN and PRESSURE ($p<0.01$, two-tailed). Since GOVERN is about principles and BELIEFS is related to personal beliefs about environment, it is understandable that they are correlated ($p<0.01$, two-tailed) and given that BELIEFS is correlated with PRESSURE there is no reason for GOVERN not to correlate with PRESSURE. To summarize, social and institutional pressures influence the beliefs and principles of SME managers. A manager under pressure has more positive beliefs about the environment and believes that environment should be saved, polluters should be punished and energy should be used efficiently.

5.3 Hypothesis Testing

Two different regression methods were used for analysis. First method is the standard multiple regression. In this model, all independent variables are entered into the regression equation all at once, and during evaluating each independent variable is considered to be entered after others had been entered (Tabachnick & Fidell, 1996, p.149).

Before using the independent variables, control variables are entered into the equation. These control variables are selected according to the results of previous research in literature. Only the age of the respondent is used as a continuous variable. Other variables are discrete and therefore dummy coded, which are whether the company has a quality certification or not, the education status of the manager and the size of the company. Table 5.9 shows that the total amount of variance in the commitment by the control variables is about 30% and the significance value of the model is 0.003.

Table 5.9: Model Summary (Control Variables)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	.543(a)	.295	.212	1.11154	3.529	0.003

a Predictors: (Constant). Small, Medium. Age. Certification. High School, Master's, Bachelor's

Table 5.10: Coefficients (Control Variables)

Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	2.605	.688		3.789	.000		
Age	.001	.015	.009	.077	.939	.812	1.231
Certification	.428	.327	.160	1.307	.196	.800	1.249
High School	.926	.379	.350	2.440	.018	.581	1.721
Bachelor's	1.000	.425	.368	2.353	.022	.488	2.050
Master's	1.511	.463	.433	3.266	.002	.678	1.474
Small	.411	.325	.165	1.265	.211	.705	1.418
Medium	.681	.496	.178	1.373	.175	.713	1.403

a Dependent Variable: COMMIT

According to the results on Table 5.10, one can observe that only education is significant in the 95% confidence interval. Having a master's degree has the most remarkable significance among the control variables. An interpretation of this result

may be that having a master's degree makes managers more aware of the environmental problems and they manage their companies more environmentally friendly. Another reason can be that managers with higher degrees manage their companies better and have a better financial status; therefore they can invest their time and money in environment. Table 5.10 also shows that, age has no significant influence on the commitment level of the companies.

As mentioned before, considering SME's and their managers, a standard multiple regression was carried out to evaluate the effects of personal beliefs, social and institutional pressures, perceived personal abilities and accepted environmental governance principles on firm's environmental commitments. Moreover, other descriptive variables such as age of the manager, education level of the manager, size of the company and the existence of a certification was also used to control the model. As the independent variables were entered in to the equation, as Table 5.11 shows, the R square, which represents the total amount of variance in the dependent variable due to independent variables, increased to 54% and the significance decreased even further, to less than 0.001.

Table 5.11: Model Summary (Standard Multiple Regression for COMMIT)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	.733(a)	.537	.445	0.93259	5.810	0.000

a Predictors: (Constant). GOVERN. Small. Medium. Age. Certification. ABILITY. High School. Master's. PRESSURE. BELIEFS. Bachelor's

As the results in Table 5.12 shows, only two of the independent variables which are PRESSURE and ABILITY have a significantly positive effect on the dependent variable COMMIT. Except for the variable indicating that manager has a bachelor's degree, variables of different education levels have significant effect on dependent variable. Moreover, companies fitting in small size rather than the micro sized ones have a significant effect on COMMIT.

Table 5.12: Coefficients (Standard Multiple Regression for COMMIT)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	-1.177	1.128		-1.044	.301		
Age	-.010	.013	-.079	-.759	.451	.768	1.302
Certification	-.026	.290	-.010	-.091	.928	.717	1.395
High School	.906	.326	.342	2.780	.007	.554	1.805
Bachelor's	.589	.367	.217	1.606	.114	.460	2.172
Master's	.838	.419	.240	2.000	.050	.582	1.717
Small	.808	.285	.323	2.830	.006	.644	1.553
Medium	.695	.438	.181	1.587	.118	.644	1.552
BELIEFS	.129	.188	.082	.684	.497	.581	1.722
PRESSURE	.803	.161	.556	4.999	.000	.680	1.472
ABILITY	.439	.136	.329	3.222	.002	.805	1.243
GOVERN	-.192	.166	-.151	-1.158	.252	.496	2.015

a Dependent Variable: COMMIT

The second method used to test the hypotheses of this study is the stepwise regression method. Stepwise regression method was selected according to some considerations. When the solutions of the three stepwise-type procedures (forward selection, backward elimination, stepwise regression) are compared, as the literature suggests (Rawlings, Pantula & Dickey, 1998), forward selection and stepwise regression methods give the same model. In using stepwise regression technique, independent variables are added into the equation one by one, relative to their standardized beta values. The equation starts out empty and the independent variable with the highest standardized beta is entered. After that, the variable with the next highest standardized beta value is assessed to see whether it has a significant value or not. This procedure is repeated until no significant variable remains. Up to this point stepwise regression is similar to forward statistical regression method. However, stepwise differs from forward statistical regression, in the sense that after adding new variables, variables which become insignificant and redundant are removed from the model (Montgomery & Peck, 1991).

Table 5.13: Model Summary (Stepwise Regression for COMMIT)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig
1[a]	.657(a)	.432	.353	1.00662	5.508	0.000
2[b]	.725(b)	.526	.451	.92718	7.034	0.000

a Predictors: (Constant). Small. Medium. Age. Certification. High School. Master's. Bachelor's PRESSURE.

b Predictors: (Constant). Small. Medium. Age. Certification. . High School. Master's. Bachelor's PRESSURE. ABILITY

Models 1 and 2 shown on Table 5.13 are used for stepwise regression. These models were built on the model that used control variables. As Table 5.9 shows, control variables are responsible from 30% of the variation in COMMIT. According to stepwise regression rules, the independent variable with the highest standardized beta should be entered into equation. Table 5.12 shows that PRESSURE has the highest standardized beta with a value of 0.556. Therefore, initially the PRESSURE value was entered into the equation. After that the significance of this variable was observed (0.000). Entering PRESSURE increases the R square value to 0.432, in other words raises the variance explained on COMMIT to 43%. Moreover, the F value (5.508) is also increased along with a stronger significance (<0.001).

The next significant independent variable having the highest standardized beta after PRESSURE is ABILITY. Therefore, in compliance with the stepwise regression rules, ABILITY having a standardized beta of 0.329 (see Table 5.12) is inserted. That increased the R square value to 0.526 which means that Model 2 is responsible for 53% change in the COMMIT along with the F value (7.034, sig.<0.000).

After entering the variable ABILITY, first the significance of the variable PRESSURE is checked for the effect of ABILITY. Significance of PRESSURE remained the same after the entrance of ABILITY in the model. According to stepwise regression rules more independent variables were sought. The remaining independent variables were not significant; moreover adding them into the equation decreased the F value. Model 2 is the result that was obtained with the stepwise regression method. Table 5.14 shows the results of both models 1 and 2.

Table 5.14: Coefficients (Stepwise Regression for COMMIT)

Models	Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.541	.833		.650	.518		
	Age	-.007	.013	-.056	-.507	.614	.792	1.263
	Certification	.133	.307	.050	.434	.666	.747	1.338
	High School	1.019	.344	.385	2.958	.004	.578	1.730
	Bachelor's	.765	.390	.282	1.961	.055	.475	2.105
	Master's	1.292	.423	.371	3.053	.003	.665	1.503
	Small	.671	.303	.268	2.217	.031	.668	1.497
	Medium	.719	.449	.188	1.601	.115	.712	1.404
	PRESSURE	.586	.157	.406	3.734	.000	.830	1.206
2	(Constant)	-1.382	.956		-1.445	.154		
	Age	-.010	.012	-.086	-.839	.405	.786	1.272
	Certification	-.042	.287	-.016	-.147	.883	.723	1.383
	High School	.975	.317	.369	3.073	.003	.577	1.733
	Bachelor's	.568	.364	.209	1.561	.124	.463	2.160
	Master's	.871	.409	.250	2.128	.038	.603	1.658
	Small	.829	.283	.332	2.934	.005	.650	1.539
	Medium	.845	.416	.220	2.033	.047	.707	1.415
	PRESSURE	.759	.153	.525	4.946	.000	.737	1.356
	ABILITY	.453	.134	.340	3.371	.001	.817	1.224

Dependent Variable: COMMIT

As Table 5.14 indicates, both the variables PRESSURE and ABILITY are significant in the 95% confidence interval. Similar to the standard multiple regression model, education and size are also significant. In other words, considering the 95% confidence interval level, both regression methods give similar models but the significance of the control variables are lower in the standard regression method because of the presence of insignificant independent variables in the model.

In line with the research of Nakamura et al. (2001), the factors that influence SMEs to obtain a quality certification were also investigated. To get the results, a standard regression model and a stepwise regression model are used in which having a certification is the dependent variable while firms' environmental commitments, the personal beliefs of the manager considering the environment, the social and institutional pressures on the manager, the confidence of manager's in their firm's ability to control their impact on the environment, the accepted environmental

principles of the manager, education level of the manager and the size of the company are the independent variables. Table 5.15 shows the model summary of the standard regression that used certification as a dependent variable.

Table 5.15: Model Summary (Standard Regression for Certification)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	.532(a)	.283	.140	.43351	1.974	.049(a)

a Predictors: (Constant). . Small. Medium. Age. High School. Bachelor's. Master's. COMMIT. PRESSURE. BELIEFS. GOVERN. ABILITY

As Table 5.15 indicates, independent variables are only responsible for 28% of the variance in the dependent variable certification. Considering the model which uses COMMIT as the dependent variable and Certification as the independent, the R square value of the latter model is quite low (54% > 28%).

Table 5.16: Coefficients (Standard Regression for Certification)

Model	Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-1.204	.504		-2.389	.020		
	Age	.004	.006	.084	.641	.524	.766	1.306
	High School	.057	.162	.057	.350	.728	.487	2.054
	Bachelor's	-.014	.175	-.013	-.078	.938	.440	2.274
	Master's	-.048	.202	-.037	-.238	.813	.543	1.840
	Small	.377	.133	.404	2.840	.006	.645	1.551
	Medium	.553	.194	.386	2.845	.006	.707	1.415
	COMMIT	-.006	.063	-.015	-.091	.928	.463	2.162
	BELIEFS	.023	.088	.039	.259	.797	.576	1.735
	PRESSURE	.150	.088	.279	1.714	.092	.492	2.032
	ABILITY	.092	.068	.184	1.349	.183	.699	1.430
	GOVERN	.027	.078	.056	.343	.733	.485	2.060

a Dependent Variable: Certification

Table 5.16 shows that PRESSURE and Size are the significant determinants of Certification. None other determinant such as age of the manager, firm's environmental commitments, manager's beliefs about the environment, perceived ability of the manager's and firm's ability to control its impact on the environment, governance principles that manager accepts and the education level of the manager drive SMEs to obtain environmental certification.

After standard regression process, stepwise regression was used to find the determinants of certification ownership, test the hypotheses and see whether a difference exists from standard regression model or not.

Table 5.17: Model Summary (Stepwise Regression for Certification)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F	Sig.
1	.503(a)	.253	.164	.42738	2.848	.013(a)

a Predictors: (Constant). . Small. Medium. Age. High School. Bachelor's. Master's. PRESSURE.

Table 5.18: Coefficients (Stepwise Regression for Certification)

Model	Variables	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	-.691	.342		-2.020	.048		
	Age	.005	.006	.117	.936	.353	.804	1.244
	High School	.059	.146	.059	.402	.689	.580	1.725
	Bachelor's	.029	.165	.029	.176	.861	.475	2.104
	Master's	.042	.180	.032	.231	.818	.666	1.502
	Small	.349	.120	.374	2.904	.005	.764	1.310
	Medium	.528	.178	.369	2.970	.004	.819	1.221
	PRESSURE	.132	.064	.244	2.045	.045	.888	1.126

a Dependent Variable: Certification

As the Table 5.17 shows, model represents the 25% of the variance in certification. Moreover, the results in the Table 5.18 are similar with standard regression model. However, since unnecessary and insignificant independent variables are removed, the significances of other variables are higher.

5.4 Results of the Hypothesis Testing

Hypotheses 1a and 1b were about the effect of beliefs of the manager's on their firm's environmental commitments and the likelihood of the firm getting an environmental certification, respectively. It appeared, according to the two different standard regression models used in the research, the independent variable BELIEFS is not a significant determinant of the dependent variables COMMIT ($t = 0.684$, $p > .10$) as well as Certification ($t = 0.259$, $p > .10$) in the 90% confidence interval. The results showed that, personal beliefs of the manager about the relationship between the natural environment and mankind have no significant effect on the manager's and

firm's environmental commitments and the chances of that firm having an environmental certification. Therefore, this implies that managers' beliefs about the relationship about the nature and mankind are not reflected into their actions.

Hypotheses 2a and 2b claimed that as the institutional and social pressures on the manager and the firm get more intense, the firm becomes more committed to the environment and its probability of getting an environmental certificate increases, respectively. Considering H_{2a}, PRESSURE is the most significant determinant for COMMIT in both the Standard Regression Model ($t = 4.999$, $p < .001$) and the stepwise regression model ($t = 4.946$, $p < .001$). Since H_{2a} is the strongest hypothesis that yields the best result with the highest significance, it can be concluded that, social and institutional pressures on the manager affect a firm's commitment to the environment. Moreover, PRESSURE is also the strongest and significant determinant of Certification along with Size ($t = 1.714$, $p < .09$).

Hypotheses 3a and 3b predicted that as the manager's confidence in his firm's and his own ability to control its impact on the environment increases, the firm becomes more committed to the environment and the likelihood of his firm's getting an environmental certification increases, respectively. For commitment, ABILITY is the second strongest determinant after PRESSURE in both Standard Multiple Regression ($t = 3.222$, $p < .002$) and Stepwise Regression Models ($t = 3.371$, $p < .001$). However, taking into account certification, ABILITY ($t = 1.349$, $p > .10$) is not a significant determinant like PRESSURE, but comes after it. In other words, the results showed that, manager's confidence in his and his firm's ability to control its impact on the environment has a significantly positive impact on the commitment of the firm to environment but does not increase the chances of that firm having an environmental certification.

Hypotheses 4a and 4b asserted that as the manager's accepted environmental governance principles get stricter, more sensitive to environment and aim to save the natural resources; his firm gets more committed to environment and possibility of his firm getting an environmental certification increases, respectively. For both standard multiple regression models that assess the determinants of COMMIT ($t = -1.158$, $p > .10$) and Certification ($t = 0.343$, $p > .10$), accepted environmental governance principles of the manager are far from having an effect. That is to say, results of the

analyses shows that accepted environmental governance principles of an SME manager has no effect on neither the firm's environmental commitments nor the possibility of that firm having an environmental certification.

Hypotheses 5a and 5b expected that as the managers' personal and their firms' responsibilities for the environment get intensive and more comprehensive according to themselves, their firms get more committed to the environment and the likelihood of the firm having an environmental certification increases, respectively. However the questions that were used in the questionnaire for assessing independent variable RESPONS showed unacceptable reliability. Therefore the hypotheses couldn't be tested.

Hypothesis 6 claimed that as the firm gets more committed to the environment, the likelihood of the firm getting an environmental certification is higher. While the correlations matrix showed a significant correlation at the 99% level, none of the models showed a significant relationship between COMMIT and Certification. Moreover it is one of the weakest relationships, considering the significance values in standard multiple regression that aims to find out the determinants of Certification.

CHAPTER 6

DISCUSSION

6.1 Overview of the Findings

This study aimed to investigate the determinants of SME managers' responses to environmental issues. The main hypotheses were that the personal beliefs of the manager about the relationship between mankind and environment, intensity of the institutional and social pressures on the firm and manager, confidence of the manager in his firm's ability to control its impact on environment, strength of the manager's accepted environmental governance principles and the manager's perceived personal and firm's responsibilities for the environment, all have impacts on the firm's environmental commitment level and the environmental certification ownership of the firm. Needless to say, it is predicted that all these factors increase the environmental commitment and the certification ownership when they are stronger.

The questionnaire of Nakamura et al. (2001) was used for research and it was distributed to 80 SME's which attended fairs in Ankara. After the data collection, results were analyzed and it revealed that all the variables except the variable about the responsibilities of the manager and the firm in the way manager perceives were reliable. Moreover, some variables related to the characteristics of the firm and manager showed some significant effect on the firm's environmental commitments and its certification ownership.

The education level of the manager and the size of the firm have considerable effect on the firm's environmental commitments. Many researchers hypothesized or suggested that managers with higher education level will have stricter concerns about the environment along with their firms (Steel, 1996; Fineman, 1997; Schaper, 2002;

McKeiver & Gadenne, 2005). Especially the results of the study of McKeiver & Gadenne were similar, with a quite significant effect of education level on implementation of an EMS. Previous research showed that higher education level brings higher environmental concern with elevated political activity in environmental issues (Steel, 1996). In this case, this can be a possible reason behind the effect of education level for this study as well. In other words, managers with higher degrees than primary school can be more politically active and more sensitive in environmental issues and this reflects into their firms' commitments related to environment.

According to the results of the research, size of a firm has a significant effect on firm's environmental commitments; in a way that having a small sized enterprise rather than a micro sized one has more effect on environmental commitments than having a medium sized enterprise. Similar to that, size is also a significant determinant of environmental certification ownership. Yet, it is one of the two significant determinants in the models. As mentioned before, the effect of size was argued many times in the literature and there is a consensus that size is an indicator of abundance of resources. As the size increases, the resources of the firm increases as well and these resources can be spent on environment. Since it requires significant amount of resources such as money and time to get an environmental certification, it is plausible that size has a positive effect. Moreover, even though determinants of environmental visibility cannot be simply degraded to size, larger companies are more exposed to public and have more concerns about their image in front of all of their stakeholders and shareholders; thus they are more likely to have environmental certifications (Bowen, 2000). Another idea is, as Hillary discussed in 2000, that most of the SMEs consider their impacts on environment negligible, so they are not in a need of an environmental certification. However, as the firms' environmental impacts increase in proportion to its size, managers become more aware of the environmental damage they cause and then seek a solution. So, all these reasons lead SMEs to have environmental certifications as their size gets larger.

Analyses showed that age of the manager has no significant effect on either the firm's environmental commitments or the environmental certification ownership probability of the firm. However, the literature contains conflicting findings. For

example, the research of Petts et al. (1998) and McKeiver & Gadenne (2005) resulted that age is a significant determinant of environmental concern of individuals and implementation of an EMS respectively. On the other hand, Schaper's study (2002) showed that age is ineffective on environmentally responsible behavior of Australian firms.

6.2 Discussion of Hypotheses

Hypothesis 1a was about the relationship between the personal beliefs of the manager about environmental issues and the effect of humanity on the environment. The hypothesis was rejected by both of the models. A plausible explanation for the rejection is that, like the previous research showed (Hutchinson & Gerrans; 1997; Petts et al., 1998; Schaper, 2002; McKeiver & Gadenne, 2005) and as Hillary claimed in 2000, SME managers tend to have positive beliefs about the environment but they fail to integrate their beliefs in their firm's environmental commitments. Especially McKeiver & Gadenne summarizes this situation in the literature by claiming that positive environmental beliefs do not actually bring higher environmental performance and proactive behavior. Moreover, as stated in the Chapter 2, this problem is identified as the "SME Problem" in the literature. Hypothesis 1b's results were similar to H_{1a}'s as both of them are rejected. When the Hypotheses 1a and 1b are compared, it can be observed that managers' personal beliefs about the relationship between environment and humanity is a stronger determinant for the firm's environmental commitments than certification ownership of the firm. Since only SMEs are dealt with in this research, there are not many firms with certification; therefore it is easier to see the effect on environmental commitments rather than certification. Therefore, it can be said that as other countries' SME managers, SME managers in Turkey have positive attitudes about the environment but they do not reflect their concerns in their firms' actions. Moreover, owning a certification may have commercial concerns rather than a true commitment to environment. Managers can be using their certifications just to improve their public image and market value while ignoring their environmental responsibilities after getting certified. Nevertheless, it can be claimed that manager's

are not reflecting their values, beliefs and attitudes into their behavior. Therefore, there is a contradiction and this is named as cognitive dissonance. However, managers have some excuses for this contradiction and these excuses can be the reasons behind the poor reflection of their beliefs into their behavior. Moreover, these excuses, which hypotheses 4a and 4b deal with, together are a significant determinant of environmental commitments of the firm. However, it should be noted that one of the ways of coping with inconsistencies between attitude and behavior is attempting to find new means for rationalizing this cognitive dissonance such as creating excuses (Schermerhorn et al., 2005).

Hypothesis 2a was based on the effect of institutional and social pressures on firm's environmental commitments. This hypothesis was strongly accepted. As it can be noticed from the results, legal pressures and concerns about public image are the main driving forces behind a positive relationship between a firm and the natural environment. As both Ludevid Anglada (2000) and Biondi et al. (2000) mentioned, legal and government pressures are the most important reasons for adopting EMSs. Although the differences between the particular pressure types were not researched, same studies also showed that, corporate image on public and marketing concerns were inferior compared to legal matters. Hypothesis 2b was also accepted by the standard regression and stepwise regression methods and it was one of the strongest determinants of certification ownership, though the effects of pressures on the commitment levels were higher. Therefore, the power of external pressures cannot be ignored for Turkish SME managers.

Hypothesis 3a was seeking whether the confidence of a manager in his and his firm's ability to control its impact on the environment affects the firm's environmental commitments or not. This hypothesis was also accepted, meaning that firms having more confidence on their ability to control their impacts on nature are more committed to the environment. Nearly every research in the topic claims that the resource inadequacy and the undervaluation of their environmental impact are the main reasons behind the low loyalty of SMEs to the environment (Gerrans & Hutchinson, 1998; Petts et al., 1998; Smith et al., 2000; Hillary, 2000; Schaper, 2002; McKeiver & Gadenne, 2005). Results show that, as the managers get more aware of their impact on environment and have more faith in their and their firms'

abilities such as knowledge, authority and both monetary and non-monetary resources, their firms' environmental commitment increases. On the other hand, different than H_{3a}, H_{3b} was not accepted by the model. Nevertheless, all of the independent variables except size and pressure were found to be insignificant in terms of affecting the certification ownership of the companies. However, this situation can be related to the weak relationship between firm's environmental commitments and certification ownership, which is one of the main findings of this research and which will be discussed later on.

In Hypothesis 4a, the relationship between the manager's accepted environmental governance principles and firm's environmental commitments was investigated. However, this must not be confused with legal pressures, which are external factors. Accepted environmental governance principles are internal factors which are related to manager's own beliefs about what should the regulations and punishment be like. H_{4a} was rejected by the models. Manager's own principles about the environment do not affect his firm's environmental commitments. This can be related to the actor-observer effect which is the combination of fundamental attribution error and self serving bias that were defined previously in Chapter 5 in greater detail. Generally the questions in the survey for this hypothesis are related to the third person and similar to H_{1a} and H_{1b}, managers' positive views are not reflected into their firm's acts. It can be said that, managers believe that people should pay for their damages to the environment (fundamental attribution error) while they complain about their lack of resources and need for competition and it becomes a significant determinant of their environmental performance (self-serving bias). Likewise H_{4a}, H_{4b} is also rejected and the same explanations can be applied to H_{4b} as well.

Hypotheses 5a and 5b was about the relationship between manager's and firm's responsibilities for the environment and firm's environmental commitments, and the certification ownership of the firm respectively. However, the questions for these hypotheses gave unreliable results. Therefore, these questions should be investigated one by one and the reasons behind the unacceptable reliability must be sought.

The questions of the variable (RESPONS) with higher means (E40, E41 and E43) and relatively lower means (E39, E42) and the answer frequencies in the Table 5.7 show that managers generally feel that they are liable of their company's environmental performance and they believe that every individual is responsible of protecting the environment. Besides it can be said that while they have strong beliefs in their and other individuals' responsibilities, they think that complying with rules is enough but they do not believe that protecting the environment is only government's duty. In other words, managers know their individual responsibilities about the natural environment but they do not want to act in macro levels and they prefer to leave the responsibility to the government. Moreover, it is contradictory that they believe complying with regulations is sufficient for them while it is also the role of enterprise to protect the environment. Nevertheless this situation can be examined from the individualism-collectivism point of view.

Individualism and collectivism are determined according to the relationship between an individual and the other individuals around oneself. In societies with loose ties where everybody is pursuing for their own interest, people are individualistic. On the opposite side, when the ties in a society are very tight, when people are looking after the interest of their own group, when thoughts and beliefs are similar among the group and the group protects its members from trouble, this group has a collectivist structure (Hofstede, 1983). According to Hofstede, Turkish people have a slightly low individualism. However, according to the responses given, managers are aware of their responsibilities and duties which will be beneficial for their group whereas they are unwilling to exceed this limit for other members of the community.

Above finding may be explained by vertical and horizontal collectivism differentiation concepts developed by Triandis & Gelfand (1998). In vertical collectivism, people are willing to sacrifice their own goals for the sake of their group's goals. Moreover, when authorities of the group command so, they can do even unpleasant things for the benefit of the group. On the contrary, in horizontal collectivism, people consider the whole group as equal, and have the same goals as others but they do not easily succumb under authority (Triandis & Gelfand, 1998). Since they recognize their duties about the natural environment but do not want to

sacrifice for the sake of the group while believing that every individual in the group is equal with specific responsibilities, with respect to results of the questionnaire, one may claim that participant managers generally fit in the horizontal collectivism group while keeping in mind that this questionnaire was not designed to measure such properties of managers.

To summarize, the slightly lower individualistic structure of the Turkish people (Hofstede, 1983) and arguably horizontally collectivist structure of the answers of the questionnaire can be the possible reasons of the low reliability of the questions about the responsibilities of the manager and firm. When the mean values and the answer frequencies of the questions of this variable are investigated, it can be inferred that, considering their individual duties, managers are responsible. However, they do not want to work harder than anyone else for the greater benefit of the society.

Hypothesis 6 was about the relationship between firm's environmental commitments and certification ownership status. Normally it is expected that a firm with a certification should have better environmental performance with greater environmental commitments than a firm without a certification. However, the results of the research showed no relationship and it brings to mind the questions "Do the companies get certifications only to impress legal authorities, contractors, competitors, customers, media and public and to improve their relationship with other companies?" and "Do the companies only satisfy the minimum requirements of the certifications or is there a lack of auditing?" These two questions can both be correct or wrong. Meaning that, companies may get certifications just for the public image and after obtaining the certifications, companies may stop caring about the environment and just enjoy the benefits of the certification. However, institutions that give certifications also inspect the company periodically, which brings the second question and a third one "How can this happen?" This may mean that SMEs find a way to obtain certifications without improving their environmental commitments or deceive the certification institutions in some way after obtaining certifications.

A totally different perspective is that apart from the companies with certifications, companies without certifications may also have higher environmental

commitments. This means that there are some non-certified companies as committed as environmentally certified companies. There may be possible reasons for that. First, certifications are expensive. SMEs that are typically with little resources might not want to apply for certifications. Second, some firms can be afraid of being audited. Even though they might not have a problem, some managers can be afraid of possible problems that might come out. Third, and maybe the most important one, some firms may not be aware of the benefits of owning an environmental certification. Moreover, the third reason also increases the probability of the other two reasons. A company which does not understand or believe in the benefits of having a certification may think that it does not worth the effort, the money and the time spent as well as may view being transparent risky. However it can still be environmentally committed due to the confidence of the manager in himself and his company's ability to control its environmental impacts and external pressures.

CHAPTER 7

CONCLUSION

7.1 Overview of the Study

Small and medium enterprises constitute 99% (OECD, 2004) of all enterprises in Turkey and 90% of all enterprises in Europe (Hillary, 2000) and this figure is similar all around the world. Therefore, the effect of SMEs on pollution levels is substantial. Small enterprises generally reflect their owners' and managers' individual commitments and values (Fuller, 2003). As a result, determinants of a SME's environmental commitments and certification ownership can be assessed by evaluating its manager's behaviors, beliefs, pressures on the manager, and other factors that can affect the manager's management style and actions against environment. For that reason, in this research, the factors that affect a firm's environmental commitments and certification ownership are investigated by using managers' responses.

Results of the questionnaire showed that the external pressures around the manager are the most important determinants of the environmental sensitivity of a SME. This result is related to the fear of legal punishments and damaged public image. Moreover, external pressures are also a significant determinant of environmental certification ownership of SMEs. Likewise, it is related to developing the image of the company by satisfying the requests of external factors. Second most important determinant is the confidence of the manager in his firm's and his own abilities. These abilities include the authority and the knowledge of the manager, resources of the firm, competitiveness of the industry and the beliefs of the manager about the impact of his company on the environment. It appears that, managers who believe they have considerable impact on the environment and who think that lack of

resources is not a factor on their environmental decisions, adapt more environmentally committed policies. However, different than environmental commitments, this factor is not a determinant of certification ownership.

The beliefs of the managers showed no significant effect on firm's environmental commitments. This was also the result of many studies and considered as the main SME problem. No matter how much the manager cares the environment, most of the SME managers in this research and literature, failed to reflect their positive attitudes in firm's actions. Moreover the environmental governance principles that managers believe to be true also had no effect either. These results were associated with two attributional biases which are fundamental attribution error and self-serving bias, because managers believe that rules should be stricter while they blame their poor environmental performance on resource inadequacy and the need to remain competitiveness. However, it should be noted that this research does not aim to investigate the psychology of the managers and therefore these are just possible explanations for the results. Finally the questions about the perceived responsibility of the manager and the firm to the environment showed unacceptable reliability and this result was tried to be explained by the arguably horizontally collectivist structure of the Turkish people.

Two other factors, education of the manager and size of the company happened to be significant determinants of firm's environmental commitments. Education aspect was linked with the idea that managers with higher education levels are more aware of the environmental problems and have a higher knowledge of the benefits of having an environmentally sensitive company. On the other hand, size effect was related to the resource advantages of the larger firms.

Along with the firm's environmental commitments, the effects of same determinants were investigated on the certification ownership of the firm. Almost none of the variables, including the environmental commitments of the firm, showed an effect on the certification except external pressures and size. The effect of size was connected to the similar reasons which are the abundance of resources and visibility. Since larger firms are more visible in the business environment, there may be more pressure to protect environment, compared to smaller firms. Moreover, large firms have more financial resources, workforce and time which make it easier for

these companies to apply for certifications. However the main interesting point in this part was the non-significant relationship between the commitments and the certification ownership. Two possible explanations were made which are either the certified companies do not obey the rules or the non-certified companies have very high level of environmental commitments. If the first explanation is true then it shows that there is a lack of auditing because the certified companies are not significantly more committed to the environment than non-certified companies. If the latter explanation is correct than it seems that SME managers with strong environmental commitments are not aware of the benefits of having an environmental certification.

The determinants that affect SMEs' environmental performance, in other words, the results of this research can be used while constructing more effective environmental policies which meet the emerging needs of environmental protection. Moreover, the poor environmental performance of SME's can also be improved by using the influencing factors as found in this research. It is evident that managers' beliefs about the environment are positive, therefore it is other stakeholders' responsibility to force managers in converting their beliefs to actions. Since the external pressure is found to be the most important factor, the stakeholders with power and means to put pressure on business should be aware of their duties. Moreover, they should use the power at their disposal wisely. Media, non-governmental organizations and other companies are among those who should try to enforce SMEs to improve their environmental performance.

Given the complaints of managers about lack of ability and resources in solving environmental problems, government may allocate budget to support SMEs to improve their environmental performance. Instructing managers about environmental matters will also elevate their knowledge about their particular environmental impact. Improving their self-assessment skills will not only increase their self-confidence but also show that controlling environmental performance through managing their processes can enhance their firms' ability. Furthermore, inspections done by external institutions can be made stricter in order to detect environmental problems as early as possible; which can lead SMEs to take more proactive actions against environmental issues.

One of the main difficulties faced while controlling and regulating SMEs is handling numerous firms with small size and nonstandard processes. Therefore, the difficulty for government to inspect their activities compared to large firms may be high. Such an approach may also require elevating government's control capacity by increasing the number of inspectors and the intensity of the inspections.

Solving environmental issues can also help to reduce the workplace health and safety problems of SMEs. The micro-sized companies, especially the ones in the shoe industry have a bad record of using child labor. By making detailed audits within shorter intervals and enforcing firms to get certified can also reduce these irregularities considering SMEs. On the other hand, since priority in economic development programs has been economic growth rather than environment and human rights related issues, it would be unreasonable to expect SMEs to increase their environmental performance and obey ethical rules. First of all, the regulatory bodies should be organized to protect deteriorating environment. Secondly, it should be acknowledged that some human rights problems at workplace such as "right to safe and healthy work environment" can be achieved through more sensitivity to environmental problems. However, it is evident that the developing and fragile nature of the Turkish economy makes it difficult to focus on environmental and ethical problems.

To summarize, the education level and the external pressures around the manager, the resources and the size of the firm are the main factors that affect the Turkish SME managers' and their firms' decisions about the environment. Lack of resources is a fact that is impossible to avoid in SMEs and it will always be the case with the SMEs since they are already small by definition. Generally, the research going around SMEs and environment include the disability of SMEs when reaching resources. Since commitment of a firm depends on its resources, and the availability of resources depends on the size of the company, it can be inferred that size has an effect on the level of commitment of a firm. This explains the significant result of the research which shows the effect of size over the environmental commitment of a SME. On the other hand education level and the effect of external pressures are the main points that should be emphasized. Considering the fact that quarter of the respondents are primary school graduates and the university graduates are less than

half, having more educated managers in the SMEs can increase the environmental performance of them. Moreover, research also showed that legal forces and public image concerns are quite effective in increasing commitment levels and leads them to obtain certifications. Maintaining or even increasing the legal obligations can have a deterrent effect on SMEs' environmental attitudes. In addition, media has an important duty on this matter because since managers are afraid of damaging their companies' public images, if media spends more effort on environmental matters and incidents, managers will pay more attention to their firms' environmental behaviors.

7.2 Limitations

This study has some limitations that need to be acknowledged while interpreting findings and making some suggestions about the future research. Generally, the limitations are related to the data collection and sample selection which can constitute some problems to the reliability of the results and the generalizability of the study, respectively.

The first limitation of the study was adapting the English questionnaire that was previously made by Nakamura et al. for large companies in Japan to a Turkish questionnaire to be applied on Turkish SMEs. First, the questionnaire was translated into Turkish and controlled by the researcher, a research assistant at the department and finally by the thesis advisor for its Turkish and applicability to Turkish people. After that, some concepts related to large sized firms were changed to make them applicable to SMEs. Even though after these efforts, some questions were left unanswered by some managers and the missing values were replaced by mean values of the other respondents. Especially for the managers with low education levels, it was harder for them to understand some concepts about the environment, and even the reasons behind saving the environment.

The second limitation took place after a misunderstanding during the translation and adaptation process of the questionnaire. The 16^{th} question of the questionnaire and the independent variable COMMIT was not included in the research for the first 57 companies, while it was added to the questionnaire of the last 13 companies'. Due to the excellent reliability of this variable, this shortcoming is

not expected to lessen the trustworthiness of the results. Moreover, deleting the 16th question increases the Cronbach's Alpha reliability only by 0.03.

The third limitation of the study was resulted due to the sampling method. For the sake of convenience and due to the lack of resources, the SMEs which attend the SME fairs in Ankara were selected as sample and only the ones which have manager's who are willing to answer the questionnaire were included in the research. This limitation reduces the generalizability of the research. Since there is not a relationship defined between the environmental attitudes of the SMEs which attend the fairs and which do not, it is difficult to have a general idea about the environmental commitments of the Turkish SMEs. However, as the fairs were not related with natural environment and commitments of the firms, a significant differentiation between the attending firms to the fairs and the other firms is not expected. In other words, there is no reason that companies that attend the fairs should have different environmental commitments than the ones that do not attend. Still, the small size of the sample constitutes an important problem. Even though it is difficult to conduct such a research with the lack of resources, 80 is a small sample size, when the high number of independent variables and factors that are researched are concerned. Another problem with data collection was the dependency on the willingness of the managers. Some managers got afraid of the questionnaire when they heard that it is about the environment, some of them could not allocate their valuable time and some of them just did not want to answer. There can be some correlations between the willingness of the managers to answer the survey and their firms' environmental commitments which should be investigated to assess its affect on generalizability.

7.3 Implications for Future Research

Though it has its own limitations, this study embodies the path that should be followed by the future researchers about the environmental commitments of the Turkish SMEs. The environmental commitments of the large enterprises are widely investigated in the literature; however the SMEs are not dealt with in much detail, especially in Turkey. Therefore this topic has many areas that are waiting to be examined and researched.

Since for this research, the sample was small and limited, it would be beneficial to have more generalizable results in order to have a more representative research. Nevertheless, it should be noted that, according to the past research along with this one, the results are expected to be close; however it is more advantageous to have strong results to support the hypotheses. Moreover, if resources are available, personal interviews can be conducted with the managers to reach an inner perspective of their environmental commitments.

After conducting a more powerful research, some details about the topic should be investigated. The first part that should be explored in more detail should be the different types of pressures on the managers. This research showed that institutional and social pressures have very significant effect on firms' environmental commitments. However, the differentiation between the legal pressures and concerns about the public image was not the aim of this research. Therefore a study as Henriques and Sadorsky did in 1999 may be repeated for Turkish firms. The separate effects of pressure groups as regulatory stakeholders, community stakeholders, organizational stakeholders and media could be investigated in the future using the research done by Henriques & Sadorsky (1999) as a reference.

One of the most crucial points that need to be focused on is the statistically insignificant relationship between the certification ownership and environmental commitment of a firm. The possible reasons that can be responsible of this situation were discussed in this study previously but the actual causes and the solutions should be researched in more detail to solve this problem.

Another important point that should be emphasized is, even though it is not completely related to the structure of this research, the collective effect of both all SMEs around the world and Turkish SMEs on pollution levels should be quantified. Even though there are some claims about the global results which is around 70% of all pollution (Hillary, 2000), to emphasize the importance of SMEs effect on the environment, some certain results should be reached.

Although there is not a commonly accepted model for classifying SMEs according to their environmental performances (Hass, 1996), in relations with widely used models in the literature (Hunt & Auster, 1990; Roome, 1992) a categorization

can be made among the SMEs and means to make SMEs more environmentally committed can be researched.

REFERENCES

Arora, S., & Cason, T. N. (1996). Why do firms volunteer to exceed environmental regulations? Understanding participation in EPA's 33/50 Program. *Land Economics, 72(4),* 413–432.

Biondi, V., Frey, M., & Iraldo, F. (2000). Environmental Management Systems and SMEs. *Greener Management International, 29*, 55-70.

Boiral, O., & Sala, J. M. (1998). Environmental management: Should industry adopt ISO 14001. *Business Horizons, 41(1),* 57-64.

Bowen, F. E. (2000). Environmental visibility: a trigger of green organisational responsiveness? *Business Strategy and the Environment, 9(2),* 92–107.

Brundtland, G. H., (1987). Our Common Future. United Nations World Commission on Environment and Development (Brundtland Commission). Oxford University Press: Oxford.

Child, J. (1972). Managerial and organizational factors associated with company performance. *Journal of Management Studies, 11(1),* 13-27

Clarke, R. A. (1994). The challenge of going green. *Harvard Business Review, 72(4),* 37–38.

DeCanio, S. J., & Watkins, W. E. (1998). Investment in energy efficiency: do the characteristics of firms matter? *Review of Economics and Statistics, 90(1),* 95–107.

Epstein, M. J. (1996). Measuring corporate environmental performance: Best practices for costing and managing an effective environmental strategy. Chicago: Irwin.

Epstein, M. J., & Roy, M. J. (2000). Strategic evaluation of environmental projects in SMEs. *Environmental Quality Management, 9(3),* 37-47.

Esty, D. C. (1994). The challenge of going green. *Harvard Business Review, 72(4),* 41–42.

Fineman, S. (1997). Constructing the Green Manager. *British Journal of Management,8,* 31-38.

Fuller, T. (2003) If You Wanted to Know the Future of Small Business what Questions would You Ask? *Futures 35(4),* 305–322.

Gerrans, P.A., Hutchinson, W.E. (1998, June). *EMS and SMEs: Current and Likely Impact of Environmental Management Systems (EMS) on Small to Medium Enterprises (SMEs)*. Paper presented to the 43rd ICSB World Conference on Entrepreneurship, Nanyang Technological University, Singapore.

George, M. J., & Jones, G. R. (1996) *Understanding and Managing Organizational Behaviour*. New York: Addison-Wesley.

George. D., & Mallery, P. (2003). *SPSS for Windows step by step: A simple guide and reference. 11.0 update*. Boston: Allyn & Bacon.

Gliem, J. A., & Gliem, R. R. (2003, October). *Calculating, interpreting, and reporting Cronbach's alpha reliability coefficient for Likert-type scales*. Paper presented at the Midwest Research-to-Practice Conference in Adult, Continuing, and Community Education, Columbus, OH, USA.

Hambrick, D., & Mason, M. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of Management Review, 9,* 195-206.

Hass, J. L., (1996). Environmental ('green') management typologies: An Evaluation, operationalization and empirical development. *Business Strategy and the Environment, 5,* 59-68.

Henriques, I., & Sadorsky, P. (1996). The determinants of an environmentally responsive firm: an empirical approach. *Journal of Environmental Economics and Management, 30,* 381–395.

Henriques, I., & Sadorsky, P., (1999), The relationship between environmental commitment and managerial perceptions of stakeholder importance. *The Academy of Management Journal, 42,* 87-99.

Hofstede, G. (1983). The cultural relativity of organizational practices and theories. *Journal of International Business Studies, 14(2),* 75–90.

Hunt, C.B., & Auster, E.R. (1990). Proactive environmental management: Avoiding the toxic trap. *Sloan Management Review, 31(2),* 7-18.

Hutchinson, W.E., & Gerrans, P.A., (1997). *Awareness And Perceptions Of Small To Medium Enterprise Of Environmental Management Processes And Standards In Western Australia*. Perth: Faculty of Business, Edith Cowan University.

Johnstone, N., Scapechhi P., Ytterhus, B., & Wolff R. (2004). The Firm, Environmental Management and Environmental Measures: Lessons from a Survey of European Manufacturing Firms. *Journal of Environmental Planning & Management 47(5),* 685-707

Junquera, B., & Ordiz M. (2002). Influence of managerial characteristics on the environmental performance of Spanish companies. *Environmental Quality Management,* 12(1), 35-51.

Lakshman, C. (2001). A theory of leadership for quality: Lessons from TQM for leadership theory. *Total Quality Management & Business Excellence, 17(1),* 41-60.

Lefebvre, É., Lefebvre, L. A., & Talbot, S. (2003). Determinants and impacts of environmental performance in SMEs. *R&D Management, 33(3),* 263-283.

Ludevid Anglada, M. (2000). Small And Medium-Sized Enterprises' Perceptions of the Environment. R. Hillary (Ed.): *Small and medium-sized enterprises and the environment*. (61-74) Sheffield: Greenleaf Publishing.

McKeiver, C., & Gadenne, D. (2005). Environmental Management Systems In Small And Medium Businesses. *International Small Business Journal, 23(5),* 513-537

Merritt, J. Q. (1998). EM Into SME Won't Go? Attitudes, Awareness and Practices in theLondon Borough of Croydon. *Business Strategy and the Environment. 7(2),* 90–100.

Miles, M.P., Munilla, L. S., & McClurg, T. (1999). The impact of ISO 14000 environmental management standards on small and medium sized enterprises. *Journal of Quality Management 4(1),* 111-122.

Miles, J., & Shevlin, M. (2001). *Applying Regression and Correlation; A Guide for Students and Researcher*. London: Sage Publications.

Montgomery, D.C., Peck, E.A. (1991). *Introduction to linear regression analysis*. (2nd ed.) USA: Wiley

Mousa, F.M. (2000). Determinants, process, and consequences of personal goals and performance. *Journal of Management, 26(6),* 1259-1285.

Nakamura, M., Takahashi, T., & Vertinsky, I. (2001). Why Japanese firms choose to certify: A Study of managerial responses to environmental issues. *Journal of Environmental Economics and Management, 42*, 23-52.

Noci, G., & Verganti, R. (1999). Managing 'green' product innovation in small firms, *R&D Managements, 29(1),* 3-15.

OECD (2002). *OECD Reviews of regulatory reform: Regulatory Reform in Turkey government capacity to assure high quality regulation.* OECD, Paris

OECD (2004). *Small and medium enterprises in Turkey: Issues and policies*. OECD, Paris.

OECD (2006, October). *Economic survey of Turkey, 2006*. *Policy Brief* [online] http://www.oecd.org/dataoecd/50/53/37529636.pdf

OECD Working Party On Environmental Performance (1999), *Environmental performance reviews (1st Cycle)*. [online]
http://www.oecd.org/dataoecd/1/15/2433378.pdf

Ottesen, G.G., Foss L., & Grønhaug, K. (2004), Exploring the accuracy of SME managers' network perceptions, *European Journal of Marketing. 38,* 593-607.

Petts, J., Herd, A., & O'hEocha, M. (1998). Environmental Responsiveness, Individuals and Organisational Learning: SME Experience, *Journal of Environmental Planning and Management. 41(6),* 711–731.

Petts, J., Herd, A., Gerrard, S., & Horne, C. (1999). The climate and culture of environmental compliance within SMEs. *Business Strategy and the Environment 8(1),* 14-30.

Porter, M. E., & van der Linde, C. (1995a) Green and competitive: Ending the stalemate. *Harvard Business Review, 73(5),* 120–134.

Porter, M. E., & van der Linde C. (1995b). Toward a new conception of the environment–competitiveness relationship. *Journal of Economic Perspectives, 9(4),* 97–118.

Rawlings, J. O., Pantula S. G., & Dickey D. A. (1998). *Applied Regression Analysis: A Research Tool.* New York: Springer-Verlag.

REC (2002). *Turkey's Environment: A Review And Evaluation Of Turkey's Environment and Its Stakeholders*. Szentendre, Hungary: The Regional Environmental Center for Central and Eastern Europe.

Reed, R., & Reed, M. (1989). CEO experience and diversification strategy fit. *Journal of Management Studies, 26(3),* 251-270.

Roome, N. (1992). Developing environmental management strategies. *Business Strategy and the Environment,1(1),* 11-24.

Rugman, A. M., & Verbeke, A. (1998). Corporate strategies and environmental regulations: An organizing framework. *Strategic Management Journal, 19,* 363 375.

Schaper, M. (2002a). Small Firms and Environmental Management: Predictors of Green Purchasing in Western Australian Pharmacies. *International Small Business Journal, 20(3),* 235–49.

Schaper, M. (2002b). The challenge of environmental responsibility and sustainable development: Implications for SME and entrepreneurship academics. In U. Füglistaller, H.J. Pleitner, T. Volery and W. Weber (Eds.) *Radical Changes in the World: Will SMEs Soar or Crash?* (St Gallen, Switzerland: Recontres de St Gallen): 541-553.

Schermerhorn, R. R. Jr., Hunt, J. G., & Osborn, R. N. (2005). *Organizational behavior (9th ed.).* New York: Wiley.

Smith, A., Kemp, R. and Duff, C. (2000). Small Firms and the Environment: Factors that Influence Small and Medium-sized Enterprises' Environmental Behaviour. In R. Hillary (Ed.) *Small and Medium-sized Enterprises and the Environment: Business Imperatives,* 24–34. Sheffield: Greenleaf.

Steger, U. (2000). Environmental management systems: empirical evidence and further perspectives. *European Management Journal 18,* 23–37.

Simpson, M., Taylor, N., & Barker, K. (2004). Environmental responsibility in SMEs: Does it deliver competitive advantage? *Business Strategy and the Environment, 13,* 156-171.

Steel, B. S. (1996). Thinking Globally, Acting Locally? Environmental Attitudes, Behavior and Activism. Journal *of Environmental Management 47,* 27-36

Tabachnick, B.G., & Fidell, L.S. (2001). *Using Multivariate Statistics*. Boston: Allyn & Bacon.

Taymaz, E. (1997). *Small and Medium-Sized Industry in Turkey*. Ankara: State Institute of Statistics.

Triandis, H. C., & Gelfand, M. J. (1998). Converging measurement of horizontal and vertical individualism and collectivism. *Journal of Personality and Social Psychology, 74,* 118–128.

Waldman, D.A., & Yammarion, F.J. (1999). CEO Charismatic Leadership: Level-Of-Management and Levels-Of-Analysis Effects. *Academy of Management Journal, 24(2),* 266-285.

Walley, N., & Whitehead, B. (1994). It's not easy being green. *Harvard Business Review, 72(3),* 46 52.

APPENDICES

APPENDIX A

Turkish Version of the Questionnaire

Sayın Yönetici,

Ekte; firma yönetiminizin çevreye karşı tutum ve uygulamalarını etkileyen faktörleri değerlendirmek için oluşturulmuş bir anket bulunmaktadır. Bu anket; "Yöneticilerin Çevre ile İlgili Tutumlarının Belirleyicileri" konulu tez çalışması için veri toplamak amacıyla kullanılacaktır. Çalışmanın sonunda, Ankara'daki küçük ve orta ölçekli şirketlerin sahibi/yöneticilerinin çevre ile ilgili duyarlılıklarını etkileyen faktörler ile ilgili yararlı bilgiler elde etmeyi umuyoruz.

Bu araştırmada yer almak için seçilmenizin sebebi, küçük veya orta ölçekli bir şirketin sahibi veya yöneticisi olarak çalışıyor olmanızdır. Anketi doldurmak için en fazla 30 dakikanızı ayırarak ve doldurduğunuz anketi zarf içerisinde anket uygulayıcısına vererek bize yardımcı olmuş olacaksınız.

Ankete verdiğiniz cevaplar sadece araştırma amaçları için değerlendirilecek ve katılan firma isimleri gizli tutulacaktır. Cevaplarınız bireysel olarak değerlendirilmeyecek, anketin sonunda toplanan tüm veriler toplu olarak istatistiksel analiz için kullanılacaktır. Anket uygulayıcısı Can Ünver'e zaman ayırarak yardımcı olduğunuz için teşekkür eder, saygılarımızı sunarız.

Araş. Gör. Can Ünver ve Doç. Dr. Semra Aşçıgil
ORTA DOĞU TEKNİK ÜNİVERSİTESİ
İŞLETME BÖLÜMÜ

Yaşınız: _____

Cinsiyetiniz: □E □K

Eğitim Düzeyiniz:
□ İlköğretim
□ Lise
□ Lisans
□ Yüksek Lisans
□ Doktora

Şirketteki Unvanınız: _____

Kaç yıldır bu şirkette çalışmaktasınız? _____

Şirketiniz hangi sektörde yer almaktadır? _____

Şirketiniz kaç yıldan beri faaliyettedir? _____

Şirketinizdeki çalışan sayısı nedir? _____

Şirketinizde sendika var mıdır? □Evet □Hayır

Lütfen şirketinizin çevre ile ilgili almış olduğu sertifikaları işaretleyiniz
□ ISO 9001
□ ISO 14001
□ Diğer: _____

Şirket olarak çevre ile ilgili bir sivil toplum örgütüne bağış yapıyor musunuz?:
□E □H

Aşağıdaki çevreyi korumaya yönelik sistemlerden hangilerini şirketinizde uyguluyorsunuz?:

□ Katı atık yönetimi
□ Hava kirliliği filtresi
□ Atık su arıtma ünitesi
□ Diğer: _____

Şirketiniz kullandığı suyu nereden temin ediyor?:
□ ASKİ
□ Diğer:_____

Çevre ile ilgili aşağıda yer alan konulara firmanızın faaliyetleri açısından ne derece katıldığınızı işaretleyiniz.

		Kesinlikle Katılmıyorum	Katılmıyorum	Biraz Katılmıyorum	Biraz Katılıyorum	Katılıyorum	Kesinlikle katılıyorum
1	Çevrenin korunmasıyla ilgili olarak, firmam ayrıntılı yazılı prosedürlere (politikalara) sahiptir.	1	2	3	4	5	6
2	Çevrenin korunması, firmamın stratejik (uzun dönemli) planında açıkça vurgulanan bir unsurdur.	1	2	3	4	5	6
3	Firmamdaki çoğu çalışan, çevrenin korunmasının gerekliliğinin farkındadır ve çevre politikalarımız hakkında detaylı bilgi sahibidir.	1	2	3	4	5	6
4	Firmamda çevre korumasıyla görevli olarak çalışanlar yeterli yetkiye sahiptir.	1	2	3	4	5	6
5	Firmamdaki çoğu yönetici/kıdemli çalışan, çevreyi koruma politikalarının geliştirilmesine ve uygulamaların izlenmesine bizzat aktif olarak katılırlar.	1	2	3	4	5	6
6	Şirketim, çevre konusundaki performansın geliştirilmesi ile ilgili amaçları belirten yazılı bir çevre politikasına sahiptir.	1	2	3	4	5	6
7	Daha iyi bir çevresel yönetimin firmamızda bir seçim değil, gereksinim olduğuyla ilgili olarak yöneticilerimiz/kıdemli çalışanlarımız, açık ve güçlü mesajlar vermektedir.	1	2	3	4	5	6
8	Şirketimde çevrenin korunması konuları kıdemli bir çalışan/yönetici tarafından yönetilmektedir.	1	2	3	4	5	6
9	Firmamda çevre yönetiminden sorumlu kişiler, firmanın yatırım planlarını gerçekleştirme konusunda görüş belirtme hakkına ve alınacak kararlara katılım konusunda yeterli yetkiye sahiplerdir.	1	2	3	4	5	6
10	Firmam, piyasada daha rekabetçi olabilmek için çevre kirliliği kontrol maliyetlerini azaltmayı amaçlayan uzun dönemli bir plana sahiptir.	1	2	3	4	5	6

		Kesinlikle Katılmıyorum	Katılmıyorum	Biraz Katılmıyorum	Biraz Katılıyorum	Katılıyorum	Kesinlikle katılıyorum
11	Çevre ile ilgili konular, yönetimin karar alma süreçleri ile bütünleşmiştir.	1	2	3	4	5	6
12	Çevreyi korumak, şirket kültürünün ayrılmaz bir parçasıdır.	1	2	3	4	5	6
13	Firmamızda, çevre kirlilik düzeylerini azaltmak için teknolojideki ilerlemeleri sürekli olarak takip ederiz.	1	2	3	4	5	6
14	Firmamızdaki çevreyi korumakla görevli kişiler, eğer çevre ile ilgli önemli bir kötüleşme algılarlarsa, faaliyetleri durdurma yetkisine sahiptirler.	1	2	3	4	5	6
15	Kirlilik yönetimi konusundaki fikirler, firmamızın her seviyedeki yöneticileri arasında serbestçe paylaşılır.	1	2	3	4	5	6
16	Firmamda, arzu edilen çevre koruma düzeyi konusunda bir fikir birliği bulunmamaktadır.	1	2	3	4	5	6
17	İnsanların doğaya müdahalesi çoğu zaman yıkıcı sonuçlar ortaya çıkartır.	1	2	3	4	5	6
18	İnsanlar doğayı kendi ihtiyaçları doğrultusunda değiştirmek yerine onunla uyum içerisinde yaşamalıdırlar.	1	2	3	4	5	6
19	Dünya, sınırlı kaynaklara ve imkanlara sahip bir uzay gemisi gibidir.	1	2	3	4	5	6
20	İnsanlar, doğal çevreyi kendi ihtiyaçlarına uyacak şekilde değiştirme hakkına sahiptir.	1	2	3	4	5	6
21	Teknolojideki gelişmeler, sonunda çevrenin kötüleşmesi sorununu çözecektir.	1	2	3	4	5	6
22	Devletin belirlediği kirlilik standartları vardır, bunları ihlal etmediğimizden emin olmalıyız.	1	2	3	4	5	6
23	Gazeteler ve televizyonun çevresel konular üzerinde yarattığı duyarlılık şirketimizin üzerinde çevresel performansımızı iyileştirmek için bir baskı oluşturmuştur.	1	2	3	4	5	6

		Kesinlikle Katılmıyorum	Katılmıyorum	Biraz Katılmıyorum	Biraz Katılıyorum	Katılıyorum	Kesinlikle katılıyorum
24	Şirketimizdeki işçi sendikası, çevreye karşı olan davranışlarımızı etkilemiştir. (Şirketinizde sendika yoksa bu soruyu cevaplamayınız)	1	2	3	4	5	6
25	Bir çevre kirliliği olayı eğer medya tarafından haber yapılırsa, kurumsal imajımızı ve pazarımızı bozabilir, bu nedenle bu tip konulara kamuyu ilgilendiren bir sorun haline gelmeden önce azami dikkatimizi vermeliyiz.	1	2	3	4	5	6
26	Şirketim, çevrenin korunması ile ilgili bir çok düzenlemeye tabidir.	1	2	3	4	5	6
27	Şirketimin çevresel uygulamaları, diğer endüstriyel kuruluşların yaptıkları uygulamalardan etkilenmektedir.	1	2	3	4	5	6
28	Firmamın çevre kirliliğine olan katkısı küçüktür ve nadiren bir fark yaratır.	1	2	3	4	5	6
29	Firmamın çevresel uygulamalarını etkilemek için yeterli bilgiye sahip değilim.	1	2	3	4	5	6
30	Firmamın çevresel uygulamalarını etkilemek için yeterli yetkiye sahip değilim.	1	2	3	4	5	6
31	Yeterli kaynaklara sahip olmadığımız için firmam çevreyi geliştirmek için tek başına hareket edememektedir.	1	2	3	4	5	6
32	Rekabet gücünü korumak zorunda olduğumuz için, firmam çevreyi geliştirmek için tek başına hareket edememektedir.	1	2	3	4	5	6
33	Çevreyi kirletenler, neden oldukları zararın tümünü karşılamalı ve yarattıkları kirliliği temizlemekten sorumlu olmalıdır.	1	2	3	4	5	6
34	Doğal kaynakları kullanan kişiler, kaynaklar kamu malı olmasına rağmen, kullanım bedelinin tümünü ödemek zorundadır.	1	2	3	4	5	6
35	Bir faaliyet ancak çevreye vereceği risk tamamıyla değerlendirilebildiği ve kontrol edilebildiği durumda sürdürülmelidir.	1	2	3	4	5	6

		Kesinlikle Katılmıyorum	Katılmıyorum	Biraz Katılmıyorum	Biraz Katılıyorum	Katılıyorum	Kesinlikle katılıyorum
36	Enerjiyi verimsiz kullanan şirketler, çevreyi doğrudan doğruya kirleten şirketler kadar çevreye verilen hasardan sorumludur.	1	2	3	4	5	6
37	Enerji-yoğun süreçler kullanarak üretilen ürünlerin kullanıcıları, üretimleri nedeniyle çevreye verilen zararı ödemek zorundadırlar.	1	2	3	4	5	6
38	Eğer ekonomik büyüme olacaksa, çevreye belirli bir miktar hasar verilmesi hoş görülebilir.	1	2	3	4	5	6
39	Bizim gibi işletmelerden beklenen, yönetmeliklere uymak ve çevreye hasar verecek vakaları önlemekten ibarettir.	1	2	3	4	5	6
40	Çevreyi korumak, şirketin değil devletin görevidir.	1	2	3	4	5	6
41	Firmadaki mevkisi ne olursa olsun, çevrenin korunması her çalışanın işidir.	1	2	3	4	5	6
42	Devlet yönetmelikleri çevreyi koruma konusunda etkindir.	1	2	3	4	5	6
43	Firmamın çevresel performansını geliştirdiğinden emin olmanın benim kişisel sorumluluğum olduğunu düşünürüm.	1	2	3	4	5	6

Anketimiz sona ermiştir. Zamanınızı ayırdığınız için teşekkür ederiz.