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FROM ENVIRONMENTAL RESPONSIBILITIES TO GREEN MANAGEMENT: CASE OF TURKEY AND A COMPARATIVE ANALYSIS

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Abstract
In the world where the natural resources are not limited and the fact that balance is worsen at a fast pace has led businesses to develop new strategies. Green management is not a management style; it is rather restructuring business processes. Restructuring has to include many business' processes. In this study, the largest 100 industrial companies traded on Istanbul Stock Exchange (XU Index) and Canada's 100 largest industrial companies traded on Toronto Stock Exchange were examined on their annual reports, financial statements and disclosures, along with official websites on the information of the seven operations related to the environmental issues were collected. These companies of two different countries were compared based on the information gathered.

Keywords: Green Management, Environmental Responsibilities, Sustainability

ÇEVRESEL SOSYAL SORUMLULUKTAN YEŞİL YÖNETİME: TÜRKİYE ÖRNEĞİ VE KARŞILAŞTIRMALI BİR ANALİZ

Özet
Dünyada doğal kaynakların sınırlı olmadığı ve zaman içinde dengenin hızla bozulduğu gerçeği işletmeleri yeni stratejiler geliştirmeye yöneltmiştir. Yeşil yönetim bir yönetim tarzı değil, işletme süreçlerinin yeniden yapılandırılmasıdır. Yeniden yapılandırma işletme içindeki pek çok süreci kapsamak zorundadır. Çalışmada IMKB'de işlem gören en büyük 100 sanayi şirketi ile Kanada Toronto Menkul Kıymetler Borsası'nda işlem gören en büyük 100 sanayi şirketi faaliyet raporları, finansal tabloları ve açıklamaları ile web sayfaları incelenerek çevreyle ilgili yedi faaliyete ilişkin bilgiler toplanmıştır. Bu bilgiler doğrultusunda iki ülke şirketleri kıyaslanmıştır.

Anahtar kelimeler: Yeşil Yönetim, Çevresel Sorumluluklar, Sürdürülebilirlik

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INTRODUCTION

The concept of corporate social responsibility has been the subject of academics working in the field of management for a long while. Although there are different opinions about what should be the responsibilities, environmental pressures force companies to fulfill these responsibilities. Today, it is possible that the most important focus among the social responsibilities is the environmental responsibilities.

Increasing pressure on the social responsibilities of companies towards natural environment is not without a reason. So to say natural resources are treated as boundless, with the effect of industrialization, advances in technology, decline in the prices of products leading the result of increase in consumption rate have resulted feared decline in natural resources. Not only the decrease in natural resources, but the deterioration of the balance of global climate changes also threatens life on earth in the long run. With regard the European Union's definition of corporate social responsibility, "a concept whereby companies integrate social and environmental concerns in their business operations and in their interaction with their stakeholders on a voluntary basis" (European Commission, 2002; 5) social and environmental responsibilities should be treated as collaboratively.

GREEN MANAGEMENT AND ENVIRONMENTAL SUSTAINABILITY

One of the competitive advantages of companies in this century is the concept of green management and business activities will be made toward this sense. Factors that cause businesses to operate in accordance with the concept of green management are; (Düren, 2000; 192-193.);

- Increasing pressure of public opinion,

- Introducing new laws and regulations, increase in companies' environmental and social responsibilities,

- The prevention of environmentally harmful activities leading to an increase of companies' savings,

- Pollution prevention methods, technologies and gradually growing demands for the products produced by these methods creating new sectors,

- Studies conducted in this area leading to an increase in firms' reputation can be listed.

Today, green management and sustainability-related activities for businesses have become beyond a voluntary social responsibility and have become the most important factor in the strategy making process. When formulating a strategy companies should focus on factors that create competitive advantage. According to Hart's a natural based view of the firm conceptual model, companies should focus on the relationship between

its competitive advantage and the natural environment. The conceptual framework of the natural-resource based theory focusses on strategy's correlation of pollution prevention, product stewardship and sustainable development. (Hart, 1995; 991-1007) Empirical studies in this regard supported the theory.

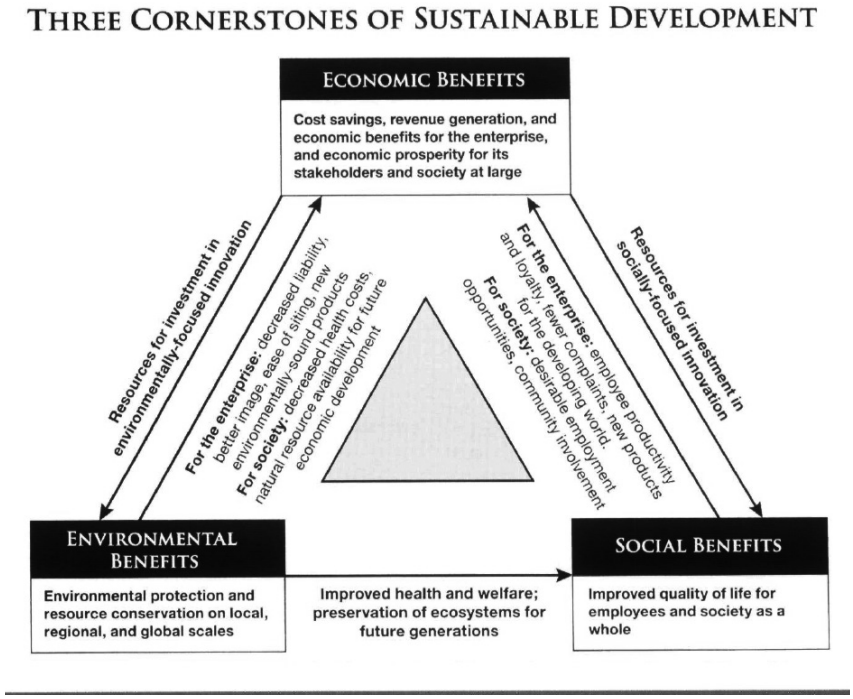

Figure1: Three Cornerstones of Sustainable Development

Source: Marylyn Placet, Roger Anderson, Kimberly M Fowler, (2005), "Strategies for Sustainability", *Research Technology Management*; Sep/Oct, Vol.48, No.5, p.34.

Sustainability-related activities and positive results obtained from such activities not only provide benefits on the company level, they also create synergy by mutual influence of social and economic benefits of these activities. Figure 1 shows the effect of sustainable development and the relationship among each.

It is possible to sum up green management practices in seven groups. (Düren, 2000; 205-206):

- Promote the use of renewable resources,

- Investment in environmentally conscious clean technologies,

- Reduction in environmentally hazard waste,

- Improvement in recovery and recycling process and methods,

- Green audit,

- Green marketing,

- Green businesses and creating green workplace.

Green management is not a concept expresses a new management style; it is rather a concept that expresses restructuring of business processes. Therefore reconstructing of business processes should be multi-faceted. Conceptually, strategic sustainability is the integration of the principles of sustainability with corporate strategic management processes, structures, cultures, systems and technologies, enabling both competitive and functional level strategies. This situation is required in corporate decision making to create sustainable solutions for the future (Borland, 2009, p.554). Some forces try to give a shape sustain strategies. Figure 2 shows these forces. According to Figure 2, the forces which are organizational competencies, cross-industry capabilities and stakeholder integration are very important when the companies want to create sustainable strategies.

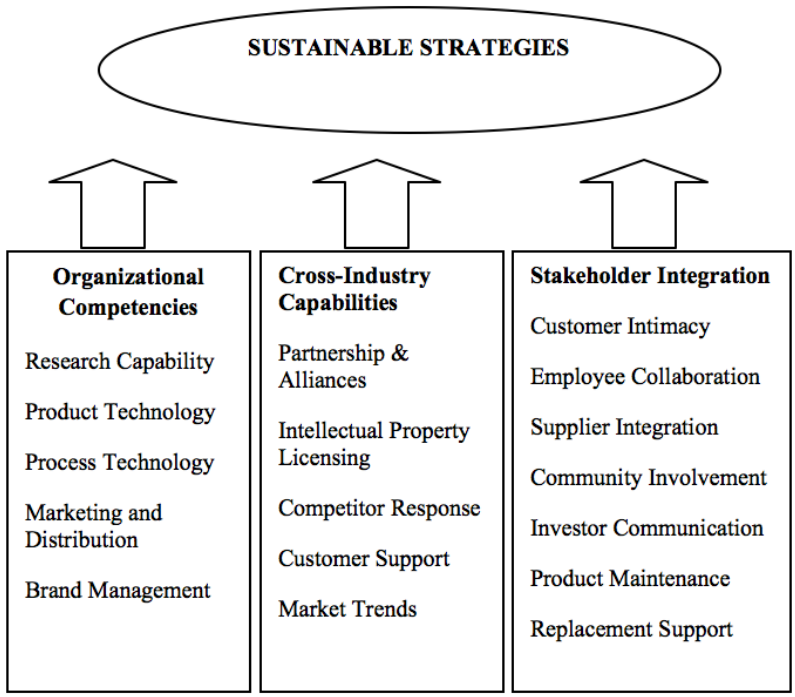

Figure 2: Forces from operational integration that sustain strategies

Source: Eric G. Olson, (2006), "Not by technology alone: sustaining winning strategies", *Journal of Business Strategy*, Vol.27, No:4, p.28.

Numbers of the companies which develop sustainability and green management strategies and take these concepts to constitute their corporate strategies are growing. For example in Turkey, Türk Telekom has worked on sustainability in many different areas which are as follows (Türk Telekom Annual Report 2011):

- Türk Telekom held a training program on the environment and climate for 1200 executives across Turkey.

- 25000 Türk Telekom employees have received online training on climate change and its risks.
- Türk Telekom has begun to use telepresence, video-conference, eco font, paper recycling, e-learning, smart light bulbs, thermal insulation and sheathing in terms of sustainable office environment.

- Türk Telekom started to implement new projects such as solar panels, energy transformation, new generation switchboards, free cooling air conditioners, smart metering, fuel oil savings, using electrical cars in the princes' islands, waste management and food waste management.

- Türk Telekom signed Durban declaration, and it has become member of international organizations which are working on environmental issues.

EFFECTS OF GREEN MANAGEMENT AND ENVIRONMENTAL SUSTAINABILITY PRACTICES ON BUSINESSES

Without any doubt, implementation of social, environmental and financial objectives together constitutes a serious paradox. Some scholars argue that there are two options available for businesses. According to this view, businesses either, lower their price and increase their market share or they emphasize on environmental and social responsibilities and produce at a higher cost and sell at a higher price. In this case it is argued that since consumers do not have sufficient awareness, high prices will lead to failure and companies fall behind the competition. (Malovics, Csigene, Kraus, 2008; 915).

One of the important reasons why some companies do not take the necessary steps towards the environmental sustainability is that such practices currently lack any effect on earnings of the shareholders.

Feldman, Soyka and Ameer's research based on the actual data of more than three hundred of America's largest publicly traded companies resulted as environmental practices didn't create any positive distinction on community perception of the companies or created any affirmative difference on relationship with its shareholders and concluded that ultimately causing an increase in earnings may be at most 5% . (Feldman, Soyka, Ameer,1996; 11-12). However, it has been advocated by many scholars that with the social pressures, legal practices and effective implementation of monetary penalties, the issue will be taken into consideration by many shareholders.

> "Munich Re, a large German insurance company, estimates that the effects of climate change could cost companies $300 billion annually by 2050 in weather damage, pollution and agricultural losses…Companies may also face unexpected expenses from future taxes, regulations, fines and caps on products that produce greenhouse gases." (Werther, Jr. and Chandler, 2006; 171).

Some environmentally focused practices performed by companies, can create high costs and long term results. In this case, companies are required to establish a balance between its short-term financial objectives, the long-term benefits and social benefits. Different companies may use different methods to solve the complex problems that arise. For example, Procter and Gamble, brings a solution through a value-based, innovative product practices, whereas Nike Company reduces the emergence of waste by using many different environment friendly raw materials and supplies in other words creates a balance between various objectives by focusing on environment friendly design(Epstein, Buhovac and Yuthas,2010; 44).

Current concepts related to the green management and sustainability includes corporate ethics and corporate governance. Corporate ethics, social responsibility and corporate governance concepts are nested, mutually supportive and form the basis for the development of concepts. Especially since the beginning of 2000's, legal regularizations made on the concept of corporate governance in order to fulfill the four core principles of corporate governance; transparency, accountability, responsibility and fairness and also it's been tried to withdraw public attention on these issues.

U.S. Environmental Agency, Environmental Capital Markets Committee "Green Dividends? The Relationship Between Firms' Environmental Performance and Financial Performance" entitled report focuses on the effect of environmental strategy related increase on financial performance and obstacles facing such practices, it suggests that promoting environmental strategies will lead to an increase in firm's value (EPA, 2000; 14).

Many scientists and organizations working in the field of environmental and social responsibilities, green management and sustainability, brought different proposals regarding the issues how to change their carbon emissions strategies in order to reduce climate changes and global warming. In order to reduce carbon emissions, they should be measured effectively. There are researchers who have developed different proposals in this regard. On measurement of carbon emissions some authors such as Borial stands on different evaluations, Jeswani and his colleagues focus on internal and external factors (Weinhofer and Hoffmann, 2010; 78).

One of the most practices partaking green management implementation within company is the efforts made in the reduction or zeroing of air pollution. 3M has achieved successful results with its project 3P (Pollution Prevention Pays) that started in 1975. Between 1975and 1990, 3M reduced their total pollution by over 530,000 tons (a 50% reduction in total emissions and, according to company sources, saved over $500 million through lower raw material, compliance, disposal and liability costs. In 1990, 3M embarked on 3P+ (Hart and Ahuja, 1996; 30).

According to a research conducted by Hart and Ahuja of the 500 companies implementing emission reduction listed in Standard and Poors' between the years of 1989-1992 indicated,

> "Efforts to reduce emissions through pollution prevention appear to drop to the bottom line within one to two years after initiation. Operating performance (ROS, ROA) is significantly benefited in the following year, whereas it takes about two years before financial performance (ROE) is affected." (Hart and Ahuja, 1996;34-35).

A similar study to Hart and Ahuja was conducted by King and Lenox. In this study, a positive correlation has emerged between the financial performance and reducing pollution. In other words, the financial performance is affected positively. Study shows that cleaner (environmentally safe) businesses have a higher rate of Tobin's Q. (King and Lenox, 2001; 110-113).

Despite the high costs that companies bear from time to time, researches demonstrate in the field of management that making environmental expenditure visible and sharing with stakeholders, it increases value of the stock and positively affects the financial performance. According to a research conducted by Klassen and McLaughlin environmental management practices increases firms environmental performance, and an increase in environmental performance leads to an increase in market share, along with a higher product contribution margin, it also provides cost reduction and allows overall increase in financial performance (Klassen, McLaughlin,1996; 1212). Similarly Dowell, Hart and Yeung attempted to measure the impact of the global environmental standards on market share of businesses, found a positive and significant relationship between firms' usage of environmental standards and Tobin's Q measured market share. (Dowell, Hart, Yeung, 2000; 1065-1068).

In a survey conducted by Marcus Wagner, corporate sustainability performance effect on economic performance was analyzed with the advertisement moderator impact. According to the results of the study, environmental performance return vary according to the degree of firms informing its' stakeholders. In other words, when a company publicly displays ads in regard to its activities, it reflects an increase in earnings. Otherwise these studies only increase costs (Wagner, 2010; 1557-1559). In another survey conducted by Accenture, 64% of consumers worldwide expressed that they are willing to pay higher prices for goods and services that produce lower emissions of greenhouse gases (Tran, 2009; 23).

According to the findings Vaccaro and Echeverri's research, the customer-company relationship was affected by the transparency of the environmentally related practices. In other words, as companies' transparency of environmentally related practices gradually increases, customers support also increases toward such proactive environmental strategies (Vaccaro, Antonino and Echeverri, Dalia P., 2010; 494-497). 79% of consumers in the United States say that environmental practices affect the products and services offering to others (Tran, 2009; 23).

It is possible to find many literature researches on the subjects of companies in compliance with the principle of transparency, the increase of firm's image, stakeholders' support to environmental practices and profitability increase. Companies must declare its activities in order to inform and fulfill the accountability duty to its stakeholders. Undoubtedly the most important instruments in this regard are the financial statements, annual reports and press releases. Our study is grounded on these reports.

RESEARCH METHOD

The purpose of this study is to identify green management and sustainability activities of industrial firms in Turkey and to determine if the cost of such activities they incur is being disclosed to its' stakeholders. For this purpose, annual reports of 2010, financial statements and web pages of top 100 industrial companies traded on Istanbul Stock Exchange (ISE) were investigated. In order to better define the situation in Turkey the green management and sustainability issues were compared with Canadian companies that have good reputations (Basila and Erlandson, 2008; 134). Also annual reports of 2010, financial statements and web pages of top 100 industrial companies traded on Toronto Stock Exchange (TSX) were investigated to make comparison meaningful.

Environment-related activities of the companies involved in this study are discussed according to the following topics.

- Design Eco-product,
- Reduce Energy consumption,
- Reduce Carbon Emission,
- Reduce Water Consumption,
- Reduce Waste,
- Recycling,
- Member of International Organizations.

FINDINGS

100 largest industrial companies traded on Istanbul Stock Exchange (ISE) and Canada's Toronto Stock Exchange (TSX) are classified in 8 main groups. Table 1 shows the distribution of the companies traded on ISE in terms of sectoral distribution. As it can be

seen in Table 1, most companies are listed in the sectors of Fabricated Metal, Machinery and Equipment industry, sectors of Manufacture of Chemicals and Manufacture of None Metallic Products follows respectively. In Table 2 we can see the list of sectoral distribution of industrial companies in Canada's 100 largest traded on the Toronto Stock Exchange. The only sectoral difference in both exchange markets is that in ISE Stock Exchange Textile, Clothing and Leather sector are listed whereas in Toronto Stock Exchange unlike Istanbul Stock Exchange Paper, Paper Products and Printing industry are listed.

As it can be seen from Table 2, in this research the companies analyzed in the Toronto Stock Exchange the largest market share accounts for Manufacture of Chemicals industry, Basic Metal Industries and Fabricated Metal, Machinery and Equipment sectors follows respectively.

Table 1: 100 Largest Industrial Companies Traded on ISE by Sectors

Sectors	**Numbers**
Manufacture of Food Beverage and Tobacco	11 11,0 %
Textile, Clothing and Leather	8 8,0 %
Manufacture of Wood and Wood Product	11 11,0 %
Manufacture of Chemicals	19 19,0 %
Manufacture of None Metallic Products	18 18,0 %
Basic Metal Industries	9 9,0 %
Fabricated Metal, Machinery and Equipment	21 21,0 %
Other Industries	3 3,0 %
TOTAL	100 100,0 %

Table 2: 100 Largest Industrial Companies Traded on TSX by Sectors

Sectors	Numbers
Manufacture of Food Beverage and Tobacco	11 11,0 %
Manufacture of Wood and Wood Product	2 2,0 %
Paper, Paper Products and Printing	4 4,0 %
Manufacture of Chemicals	39 39,0 %
Manufacture of None Metallic Products	2 2,0 %
Basic Metal Industries	25 25,0 %
Fabricated Metal, Machinery and Equipment	14 14,0 %
Other Industries	3 3,0 %
TOTAL	100 100,0 %

- Design Eco-Product; One of the issues examined in this research is the proactive approach named as the eco-product design. Both of the surveyed companies on the stock exchange the releases and announcements on eco- product design attributes are shown in Table 3 and Table 4.

Table 3: Design Eco-Product (B1) Statements of 100 Largest Industrial Companies Traded on ISE

Sectors	B1		Total
	1	2	
Manufacture of Food Beverage and tobacco % within Sector % within B1	10 90,9 % 11,5 %	1 9,1 % 7,7 %	11 100,0 % 11,0 %
Textile, Clothing and Leather % within Sector % within B1	6 75,0 % 6,9 %	2 25,0 % 15,4 %	8 100,0 % 8,0 %
Manufacture of Wood and Wood Product % within Sector % within B1	11 100,0 % 12,6 %	0 ,0 % ,0 %	11 100,0 % 11,0 %
Manufacture of Chemicals % within Sector % within B1	17 89,5 % 19,5 %	2 10,5 % 15,4 %	19 100,0 % 19,0 %
Manufacture of None Metallic Products % within Sector % within B1	17 94,4 % 19,5 %	1 5,6 % 7,7 %	18 100,0 % 18,0 %
Basic Metal Industries % within Sector % within B1	8 88,9 % 9,2 %	1 11,1 % 7,7 %	9 100,0 % 9,0 %
Fabricated Metal, Machinery and Equipment % within Sector % within B1	15 71,4 % 17,2 %	6 28,6 % 46,2 %	21 100,0 % 21,0 %
Other Industries % within Sector % within B1	3 100,0 % 3,4 %	0 ,0 % ,0 %	3 100,0 % 3,0 %
TOTAL % within Sector % within B1	87 87,0 % 100,0 %	13 13,0 % 100,0 %	100 100,0 % 100,0 %

1: There is no statement, 2: There is a statement, 3: There is a statement and financial information is provided.

Once we take a look at the sectors in Table 3, sectors with a rate of 28,6% declaration of eco-product design are Fabricated Metal, Machinery and Equipment sector along with 25,0% in the Textile, Clothing and Leather industry.

Table 4: Design Eco-Product (B1) Statements of 100 Largest Industrial Traded Company Traded on TSX

Sectors	B1			Total
	1	2	3	
Manufacture of Food Beverage and Tobacco	8	3	0	11
% within Sector	72,7 %	27,3 %	,0 %	100,0 %
% within B1	11,06 %	10,0 %	,0%	11,0 %
Manufacture of Wood and Wood Product	1	1	0	2
% within Sector	50,0 %	50,0 %	,0 %	100,0 %
% within B1	1,4 %	3,3 %	,0 %	2,0 %
Paper, Paper Products and Printing	1	3	0	4
% within Sector	25,0 %	75,0 %	,0 %	100,0 %
% within B1	1,4 %	10,0 %	,0 %	4,0 %
Manufacture of Chemicals	26	12	1	39
% within Sector	66,7 %	30,8 %	2,6 %	100,0 %
% within B1	37,7 %	40,0 %	100,0 %	39,0 %
Manufacture of None Metallic Products	1	1	0	2
% within Sector	50,0 %	50,0 %	,0 %	100,0 %
% within B1	1,4 %	3,3 %	,0 %	2,0 %
Basic Metal Industries	24	1	0	25
% within Sector	96,0 %	4,0 %	,0 %	100,0 %
% within B1	34,8 %	3,3 %	,0 %	25,0 %
Fabricated Metal, Machinery and Equipment	7	7	0	14
% within Sector	50,0 %	50,0 %	,0 %	100,0 %
% within B1	10,1 %	23,3 %	,0 %	14,0 %
Other Industries	1	2	0	3
% within Sector	33,3 %	66,7 %	,0 %	100,0 %
% within B1	1,4 %	6,7 %	,0 %	3,0 %
TOTAL	69	30	1	100
% within Sector	69,0 %	30,0 %	1,0 %	100,0 %
% within B1	100,0 %	100,0 %	100,0 %	100,0 %

1: There is no statement, 2: There is a statement, 3: There is a statement and financial information is provided

Besides the above mentioned sectors, the number of companies who declares eco-product design is extremely rare including Manufacture of Wood and Wood Product sector and other sectors outside mentioned sectors do not provide any statement on such practices.

A conclusion can be drawn from Table 4 is that companies within the Paper, Paper Products and Printing industry listed on Toronto Stock Exchange's Top 100 Industrial Companies give statement with a rate of 75% on eco-product design, and industries in Manufacture of Wood and Wood Product, Manufacture of None Metallic and Fabricated Metal Products, Machinery and Equipment sectors follows with a rate of 50% respectively.

What catches the most attention is that there are only 26 companies from Manufacture of Chemicals sector within the given list, 12 of each gives statement on the issue where one of such provides information regarding on the costs and savings of these practices .In other words, 40% of the companies engaged in eco-product design declaration is in Manufactures of Chemicals sector. However, a similar research in the Basic Metal Industries sector, which is the second largest sector within the list, is missing. Only one of the 25 companies of this industry provided statement.

- **Reduce Energy Consumption;** One of the issues within the scope of the research is reduce energy consumption. Besides the gearing towards the renewable energy, reducing the used energy levels also plays an important role in sustainability and green management practices. The companies within the sectors involved in this research provided in Table 5 and Table 6 on the basis of the subject.

Once we examine Table 5 it is possible to say that ongoing efforts to reduce energy consumption are more intense than the efforts made towards eco-product design. It appears that details from Basic Metals and Fabricated Metal Industries in this area denser than the others. Financial information related to the research executed in this area, only one company provided information within the Manufacture of None Metallic Products.

Table 5: Reduce Energy Consumption (B2) Details of 100 Largest Industrial Company Traded on ISE

Sectors	B2			Total
	1	2	3	
Manufacture of Food Beverage and Tobacco	8	3	0	11
% within Sector	72,7 %	27,3 %	,0 %	100,0 %
% within B2	10,7 %	12,5 %	,0 %	11,0 %
Textile, Clothing and Leather	7	1	0	8
% within Sector	87,05 %	12,5 %	,0 %	100,0 %
% within B2	9,3 %	4,2 %	,0 %	8,0 %
Manufacture of Wood and Wood Product	10	1	0	11
% within Sector	90,9 %	9,1 %	,0 %	100,0 %
% within B2	13,3 %	4,2 %	,0 %	11,0 %
Manufacture of Chemicals	14	5	0	19
% within Sector	73,7 %	26,3 %	,0 %	100,0 %
% within B2	18,7 %	20,8 %	,0 %	19,0 %
Manufacture of None Metallic Products	15	2	1	18
% within Sector	83,3 %	11,1 %	5,6 %	100,0 %
% within B2	20,0 %	8,3 %	100,0 %	18,0 %
Basic Metal Industries	5	4	0	9
% within Sector	55,6 %	44,4 %	,0 %	100,0 %
% within B2	6,7 %	16,7 %	,0 %	9,0 %
Fabricated Metal, Machinery and Equipment	13	8	0	21
% within Sector	61,9 %	38,1 %	,0 %	100,0 %
% within B2	17,3%	33,3 %	,0 %	21,0 %
Other Industries	3	0	0	3
% within Sector	100,0 %	,0 %	,0 %	100,0 %
% within B2	4,0 %	,0 %	,0 %	3,0 %
TOTAL	75	24	1	100
% within Sector	75,0 %	24,0 %	1,0 %	100,0 %
% within B2	100,0 %	100,0 %	100,0 %	100,0 %

1: There is no statement, 2: There is a statement, 3: There is a statement and financial information is provided.

Table 6: Reduce Energy Consumption (B2) Details of 100 Largest Industrial Company Traded on TSX

Sectors	B2			Total
	1	2	3	
Manufacture of Food Beverage and Tobacco	4	6	1	11
% within Sector	36,4 %	54,5 %	9,1 %	100,0 %
% within B2	8,2 %	12,8 %	25,0 %	11,0 %
Manufacture of Wood and Wood Product	2	0	0	2
% within Sector	100,0 %	,0 %	,0 %	100,0 %
% within B2	4,1 %	,0 %	,0 %	2,0 %
Paper, Paper Products and Printing	1	3	0	4
% within Sector	25,0 %	75,0 %	,0 %	100,0 %
% within B2	2,0 %	6,4 %	,0 %	4,0 %
Manufacture of Chemicals	19	17	3	39
% within Sector	48,7 %	43,6 %	7,7 %	100,0 %
% within B2	38,8 %	36,2 %	75,0 %	39,0 %
Manufacture of None Metallic Products	1	1	0	2
% within Sector	50,0 %	50,0 %	,0 %	100,0 %
% within B2	2,0 %	2,1 %	,0 %	2,0 %
Basic Metal Industries	14	11	0	25
% within Sector	56,0 %	44,0 %	,0 %	100,0 %
% within B2	28,6 %	23,4 %	,0 %	25,0 %
Fabricated Metal, Machinery and Equipment	7	7	0	14
% within Sector	50,0 %	50,0 %	,0 %	100,0 %
% within B2	14,3 %	14,9 %	,0 %	14,0 %
Other Industries	1	2	0	3
% within Sector	33,3 %	66,7 %	,0 %	100,0 %
% within B2	2,0 %	4,3 %	,0 %	3,0 %
TOTAL	49	47	4	100
% within Sector	49,0 %	47,0 %	4,0 %	100,0 %
% within B2	100,0 %	100,0 %	100,0 %	100,0 %

1: There is no statement, 2: There is a statement, 3: There is a statement and financial information is provided

Table 6 is in regards to the statements on reducing energy consumption of 100 large industrial company traded on Canada Toronto Stock Exchange. Reduce energy consumption as can be seen from the table ISE companies, statements on reduce energy consumptions is higher that eco product design and we can see an increased financial amounts related to the subject. It is interesting to note that 75% of the companies in the sector of the Paper, Paper Products and Printing industry provided statements; however, there is not any information in terms on savings or costs related to such savings. This sector is followed by Manufacture of Food Beverage and Tobacco sector. Similarly, from 17 companies within the chemical industry only 3 of each provided any financial statement and these companies constitute 75% of the whole list of companies who provided such financial statement.

- **Reduce Carbon Emission;** Companies who show awareness towards to the climate change prioritize carbon emission reduction. Statements of the companies included in this research on carbon emissions, are shown in Table 7 and Table 8.

Once we examine Table 7, we can concluded that 19 companies out of 100 companies traded on ISE provided statements regarding carbon emission reduction and only one of listed companies also provides financial disclosure regarding its activities.

However, on the other hand 47% of 100 companies traded on Toronto Stock Exchange provide statement on this issue. 4 out of 100 companies declared the magnitude of its monetary spending. It is not wrong to draw a conclusion that companies in Turkey do not appear to express such sensitivity towards this issue as of yet.

Table 7: Reduce Carbon Emission (B3) Disclosures of the 100 Largest Industrial Company Traded on ISE

Sectors	B3			Total
	1	2	3	
Manufacture of Food Beverage and Tobacco	9	2	O	11
% within Sector	81,8 %	18,2 %	,0 %	100,0 %
% within B3	11,2 %	10,5 %	,0 %	11,0 %
Textile, Clothing and Leather	6	2	0	8
% within Sector	75,0 %	25,0 %	,0 %	100,0 %
% within B3	7,5 %	10,5 %	,0 %	8,0 %
Manufacture of Wood and Wood Product	11	0	0	11
% within Sector	100,0 %	,0 %	,0 %	100,0 %
% within B3	13,8 %	,0 %	,0 %	11,0 %
Manufacture of Chemicals	16	3	0	19
% within Sector	84,2 %	15,8 %	,0 %	100,0 %
% within B3	20,0 %	15,8 %	,0 %	19,0 %
Manufacture of None Metallic Products	14	3	1	18
% within Sector	77,8 %	16,7 %	5,6 %	100,0 %
% within B3	17,5 %	15,8 %	100,0 %	18,0 %
Basic Metal Industries	7	2	0	9
% within Sector	77,8 %	22,2 %	,0 %	100,0 %
% within B3	8,8 %	10,5 %	,0 %	9,0 %
Fabricated Metal, Machinery and Equipment	14	7	0	21
% within Sector	66,7 %	33,3 %	,0 %	100,0 %
% within B3	17,5 %	36,8 %	,0 %	21,0 %
Other Industries	3	0	0	3
% within Sector	100,0 %	,0 %	,0 %	100,0 %
% within B3	3,8 %	,0 %	,0 %	3,0 %
TOTAL	80	19	1	100
% within Sector	80,0 %	19,0 %	1,0 %	100,0 %
% within B3	100,0 %	100,0 %	100,0%	100,0 %

1: There is no statement, 2: There is a statement, 3: There is a statement and financial information is provided.

Table 8: Reduce Carbon Emission (B3) Disclosures of the 100 Largest Industrial Company Traded on TSX

Sectors	B3			Total
	1	2	3	
Manufacture of Food Beverage and Tobacco	7	4	0	11
% within Sector	63,6 %	36,4 %	,0 %	100,0 %
% within B3	14,3 %	8,5 %	,0 %	11,0 %
Manufacture of Wood and Wood Product	1	1	0	2
% within Sector	50,0 %	50,0 %	,0 %	100,0 %
% within B3	2,0 %	2,1 %	,0 %	2,0 %
Paper, Paper Products and Printing	1	3	0	4
% within Sector	25,0 %	75,0 %	,0 %	100,0 %
% within B3	2,0 %	6,4 %	,0 %	4,0 %
Manufacture of Chemicals	15	20	4	39
% within Sector	38,5 %	51,3 %	10,3 %	100,0 %
% within B3	30,6 %	42,6 %	100,0 %	39,0 %
Manufacture of None Metallic Products	1	1	0	2
% within Sector	50,0 %	50,0 %	,0 %	100,0 %
% within B3	2,0 %	2,1 %	,0 %	2,0 %
Basic Metal Industries	15	10	0	25
% within Sector	60,0 %	40,0 %	,0 %	100,0 %
% within B3	30,6 %	21,3 %	,0 %	25,0 %
Fabricated Metal, Machinery and Equipment	8	6	0	14
% within Sector	57,1 %	42,9%	,0 %	100,0 %
% within B3	16,3 %	12,8 %	,0 %	14,0 %
Other Industries	1	2	0	3
% within Sector	33,3 %	66,7 %	,0 %	100,0 %
% within B3	2,0 %	4,3 %	,0 %	3,0 %
TOTAL	49	47	4	100
% within Sector	49,0 %	47,0 %	4,0 %	100,0 %
% within B3	100,0 %	100,0 %	100,0 %	100,0 %

1: There is no statement, 2: There is a statement, 3: There is a statement and financial information is provided.

- **Reduce Water Consumption;** Due to current issues of global warming, rapid population growth, industrialization and so many others, reduction of water usage, utilizing collected rain water in various activities and recycling have become one of the important issues of today.

Table 9: Reduce Water Consumption (B4) Details of the 100 Largest Industrial Company Traded on ISE

Sectors	B4		Total
	1	2	
Manufacture of Food Beverage and Tobacco	9	2	11
% within Sector	81,8 %	18,2 %	100,0 %
% within B4	9,8 %	25,0 %	11,0 %
Textile, Clothing and Leather	8	0	8
% within Sector	100,0 %	,0 %	100,0 %
% within B4	8,7 %	,0 %	8,0 %
Manufacture of Wood and Wood Product	11	0	11
% within Sector	100,0 %	,0 %	100,0 %
% within B4	12,60%	,0 %	11,0 %
Manufacture of Chemicals	17	2	19
% within Sector	89,5 %	10,5 %	100,0 %
% within B4	18,5 %	25,0 %	19,0 %
Manufacture of None Metallic Products	18	0	18
% within Sector	100,0 %	,0 %	100,0 %
% within B4	19,6 %	,0 %	18,0 %
Basic Metal Industries	8	1	9
% within Sector	88,9 %	11,1 %	100,0 %
% within B4	8,7 %	12,5 %	9,0 %
Fabricated Metal, Machinery and Equipment	18	3	21
% within Sector	85,7 %	14,3 %	100,0 %
% within B4	19,6 %	37,5 %	21,0 %
Other Industries	3	0	3
% within Sector	100,0 %	,0 %	100,0 %
% within B4	3,3 %	,0 %	3,0 %
TOTAL	92	8	100
% within Sector	92,0 %	8,0 %	100,0 %
% within B4	100,0 %	100,0 %	100,0 %

In Table 9 the surveyed 100 largest industrial companies traded on ISE reduce water consumption data is provided.

Table 10: Reduce Water Consumption (B4) Details of the 100 Largest Industrial Company Traded on TSX

Sectors	B4			Total
	1	2	3	
Manufacture of Food Beverage and Tobacco	6	5	0	11
% within Sector	54,5 %	45,5 %	,0 %	100,0 %
% within B4	12,0 %	10,4 %	,0 %	11,0 %
Manufacture of Wood and Wood Product	2	0	0	2
% within Sector	100,0 %	,0 %	,0 %	100,0 %
% within B4	4,0 %	,0 %	,0 %	2,0 %
Paper, Paper Products and Printing	2	2	0	4
% within Sector	50,0 %	50,0 %	,0 %	100,0 %
% within B4	4,0 %	4,2 %	,0 %	4,0 %
Manufacture of Chemicals	16	22	1	39
% within Sector	41,0 %	56,4 %	2,6 %	100,0 %
% within B4	32,0 %	45,8 %	50,0 %	39,0 %
Manufacture of None Metallic Products	2	0	0	2
% within Sector	100,0 %	,0 %	,0 %	100,0 %
% within B4	4,0 %	,0 %	,0 %	2,0 %
Basic Metal Industries	11	13	1	25
% within Sector	44,0 %	52,0 %	4,0 %	100,0 %
% within B4	22,0 %	27,1 %	50,0 %	25,0 %
Fabricated Metal, Machinery and Equipment	9	5	0	14
% within Sector	64,3 %	35,7%	,0 %	100,0 %
% within B4	18,0 %	10,4 %	,0 %	14,0 %
Other Industries	2	1	0	3
% within Sector	66,7 %	33,3 %	,0 %	100,0 %
% within B4	4,0 %	2,1 %	,0 %	3,0 %
TOTAL	50	48	2	100
% within Sector	50,0 %	48,0 %	2,0 %	100,0 %
% within B4	100,0 %	100,0 %	100,0 %	100,0 %

1: There is no statement, 2: There is a statement, 3: There is a statement and financial information is provided

When Table 9 and Table 10 are examined together, we can say that companies examined in this research between the companies operating in Turkey and Canada shows significant differences. 92% of companies in the Istanbul Stock Exchange have no statement regarding to their activities on reduction of water consumption, only 8 of listed companies gave a statement on this issue. Of these 8, 3 companies operate in Fabricated Metal, Machinery and Equipment sector. On the contrary, 100 companies traded on Toronto Exchange surveyed in this research, 48 of the listed have declared statement on reduction of water consumption. 22 of 48 companies operate in Manufacture of Chemicals sector.

- **Reduce Waste;** It appears that recycling and reduction of waste in terms of environmental and social responsibility and sustainability efforts is an extremely important issue. Statements of the companies included within the scope of the research on this subject are located in Table 11 and Table 12.

Table 11 shows that in Turkey waste reduction practices have draws the most attention among the other research topics covered in this research. According to the table 60% of companies declare statements, and 1 of such provides magnitude of its financial disclosure of its activities. As it can be seen in Table 12, 52% of the Canadian companies within this research declare statements on waste reduction, one of such provided details as monetary value.

Table 11: Reduce Waste (B5) Details of the 100 Largest Industrial Company Traded on ISE

Sectors	B5			Total
	1	2	3	
Manufacture of Food Beverage and Tobacco	3	8	0	11
% within Sector	27,3 %	72,7 %	,0 %	100,0 %
% within B5	7,7 %	13,3 %	,0 %	11,0 %
Textile, Clothing and Leather	4	4	0	8
% within Sector	50,0 %	50,0 %	,0 %	100,0 %
% within B5	10,3 %	6,7 %	,0 %	8,0 %
Manufacture of Wood and Wood Product	7	4	0	11
% within Sector	63,6 %	36,4 %	,0 %	100,0 %
% within B5	17,9 %	6,7 %	,0 %	11,0 %
Manufacture of Chemicals	8	11	0	19
% within Sector	42,1 %	57,9 %	,0 %	100,0 %
% within B5	20,5 %	18,3 %	,0 %	19,0 %
Manufacture of None Metallic Products	7	10	1	18
% within Sector	38,9 %	55,6 %	5,6 %	100,0 %
% within B5	17,9%	16,7 %	100,0 %	18,0 %
Basic Metal Industries	3	6	0	9
% within Sector	33,3 %	66,7 %	,0 %	100,0 %
% within B5	7,7 %	10,0 %	,0 %	9,0 %
Fabricated Metal, Machinery and Equipment	5	16	0	21
% within Sector	23,8 %	76,2 %	,0 %	100,0 %
% within B5	12,8 %	26,7 %	,0 %	21,0 %
Other Industries	2	1	0	3
% within Sector	66,7 %	33,3 %	,0 %	100,0 %
% within B5	5,1 %	1,7 %	,0 %	3,0 %
TOTAL	39	60	1	100
% within Sector	39,0 %	60,0 %	1,0 %	100,0 %
% within B5	100,0 %	100,0 %	100,0%	100,0 %

1: There is no statement, 2: There is a statement, 3: There is a statement and financial information is provided.

Table 12: Reduce Waste (B5) Details of the 100 Largest Industrial Company Traded on TSX

Sectors	B5			Total
	1	2	3	
Manufacture of Food Beverage and Tobacco	3	8	0	11
% within Sector	27,3 %	72,7 %	,0 %	100,0 %
% within B5	6,8 %	15,4 %	,0 %	11,0 %
Manufacture of Wood and Wood Product	1	1	0	2
% within Sector	50,0 %	50,0 %	,0 %	100,0 %
% within B5	2,3 %	1,9 %	,0 %	2,0 %
Paper, Paper Products and Printing	1	3	0	4
% within Sector	25,0 %	75,0 %	,0 %	100,0 %
% within B5	2,3 %	5,8 %	,0 %	4,0 %
Manufacture of Chemicals	22	16	1	39
% within Sector	56,4 %	41,0 %	2,6 %	100,0 %
% within B5	50,0 %	30,8 %	250 %	39,0 %
Manufacture of None Metallic Products	0	2	0	2
% within Sector	,0 %	100,0 %	,0 %	100,0 %
% within B5	,0 %	3,8 %	,0 %	2,0 %
Basic Metal Industries	7	15	3	25
% within Sector	28,0 %	60,0 %	12,0 %	100,0 %
% within B5	15,9 %	28,8 %	75,0 %	25,0 %
Fabricated Metal, Machinery and Equipment	8	6	0	14
% within Sector	57,1 %	42,9%	,0 %	100,0 %
% within B5	18,2 %	11,5 %	,0 %	14,0 %
Other Industries	2	1	0	3
% within Sector	66,7 %	33,3 %	,0 %	100,0 %
% within B5	4,5 %	1,9 %	,0 %	3,0 %
TOTAL	44	52	4	100
% within Sector	44,0 %	52,0 %	4,0 %	100,0 %
% within B5	100,0 %	100,0 %	100,0 %	100,0 %

1: There is no statement, 2: There is a statement, 3: There is a statement and financial information is provided.

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Recycling; Recycling allows companies to have financial gain while on the other hand it also makes a significant contribution to the reduction of waste. Therefore, the issue of recycling is also very common in the daily life.

Table 13: Recycling (B6) Details of the 100 Largest Industrial Company Traded on ISE

Sectors	B6		Total
	1	2	
Manufacture of Food Beverage and Tobacco	7	4	11
% within Sector	63,6 %	36,4 %	100,0 %
% within B6	7,8 %	40,0 %	11,0 %
Textile, Clothing and Leather	8	0	8
% within Sector	100,0 %	,0 %	100,0 %
% within B6	8,9 %	,0 %	8,0 %
Manufacture of Wood and Wood Product	8	3	11
% within Sector	7,7 %	27,3 %	100,0 %
% within B6	8,9 %	30,0 %	11,0 %
Manufacture of Chemicals	18	1	19
% within Sector	94,7 %	5,3 %	100,0 %
% within B6	20,0 %	10,0 %	19,0 %
Manufacture of None Metallic Products	18	0	18
% within Sector	100,0 %	,0 %	100,0 %
% within B6	20,0 %	,0 %	18,0 %
Basic Metal Industries	8	1	9
% within Sector	88,9 %	11,1 %	100,0 %
% within B6	8,9 %	10,0 %	9,0 %
Fabricated Metal, Machinery and Equipment	20	1	21
% within Sector	95,2 %	4,8 %	100,0 %
% within B6	22,2 %	10,0 %	21,0 %
Other Industries	3	0	3
% within Sector	100,0 %	,0 %	100,0 %
% within B6	3,3 %	,0 %	3,0 %
TOTAL	90	10	100
% within Sector	90,0 %	10,0 %	100,0 %
% within B6	100,0 %	100,0 %	100,0 %

1: There is no statement, 2: There is a statement, 3: There is a statement and financial information is provided

Table 14: Recycling (B6) Details of the 100 Largest Industrial Company Traded on Toronto Stock Exchange

Sectors	B6		Total
	1	2	
Manufacture of Food Beverage and Tobacco	6	5	11
% within Sector	51,5 %	45,5 %	100,0 %
% within B6	612,2 %	9,8 %	11,0 %
Manufacture of Wood and Wood Product	2	0	2
% within Sector	100,0 %	,0 %	100,0 %
% within B6	24,1 %	,0 %	2,0 %
Paper, Paper Products and Printing	1	3	4
% within Sector	25,0 %	75,0 %	100,0 %
% within B6	2,0 %	5,9 %	4,0 %
Manufacture of Chemicals	18	21	39
% within Sector	46,2 %	53,8 %	100,0 %
% within B6	36,7 %	41,2 %	39,0 %
Manufacture of None Metallic Products	1	1	2
% within Sector	50,0 %	50,0 %	100,0 %
% within B6	2,0 %	2,0 %	2,0 %
Basic Metal Industries	11	14	25
% within Sector	44,0 %	56,0 %	100,0 %
% within B6	22,4 %	27,5 %	25,0 %
Fabricated Metal, Machinery and Equipment	8	6	14
% within Sector	57,1 %	42,9%	100,0 %
% within B6	16,3 %	11,8 %	14,0 %
Other Industries	2	1	3
% within Sector	66,7 %	33,3 %	100,0 %
% within B6	4,1 %	2,0 %	3,0 %
TOTAL	49	51	100
% within Sector	49,0 %	51,0 %	100,0 %
% within B6	100,0 %	100,0 %	100,0 %

1: There is no statement, 2: There is a statement, 3: There is a statement and financial information is provided

Table 13 is displays an unpleasant image for Turkey. It is due to fact that even though the number of companies with a written statements on reduction of waste displays 60 out of 100, it is substantially lower on the matter of recycling with 10 companies. On the contrary, 51% of the Canadian companies declared statement on the subject matter.

- **Member of International Organizations;** International organizations create awareness with their activities and in a way it plays a leading role in this area. In order to become a member of such organizations, some rules must be met. For this reason, companies by becoming a member of such international organizations can find guidance along with some pressure. In addition, membership to such organizations also creates a positive impact on firm reputation. On Table 15 and 16 displays information related to the international organizations membership of the companies which are included on our research that are traded on the Istanbul Stock Exchange and Toronto Stock Exchange As it can be seen from the tables, Turkish businesses place great emphasis on this issue. While 15% of the Turkish companies are members of international organizations, only 9% of Canadian firms stated that they were members of such organizations.

Table 15: Member of International Organizations (B7) Details of the 100 Largest Industrial Company Traded on ISE

Sectors	B7		Total
	1	2	
Manufacture of Food Beverage and Tobacco	9	2	11
% within Sector	81,8 %	18,2 %	100,0 %
% within B7	10,6 %	13,3 %	11,0 %
Textile, Clothing and Leather	6	2	8
% within Sector	75,0 %	25,0 %	100,0 %
% within B7	7,1 %	13,3 %	8,0 %
Manufacture of Wood and Wood Product	10	1	11
% within Sector	90,9 %	9,1 %	100,0 %
% within B7	11,8 %	6,7 %	11,0 %
Manufacture of Chemicals	18	1	19
% within Sector	94,7 %	5,3 %	100,0 %
% within B7	21,2 %	6,7 %	19,0 %
Manufacture of None Metallic Products	17	1	18
% within Sector	94,4 %	5,6 %	100,0 %
% within B7	20,0 %	6,7 %	18,0 %
Basic Metal Industries	6	3	9
% within Sector	66,7 %	33,3 %	100,0 %
% within B7	7,1 %	20,0 %	9,0 %
Fabricated Metal, Machinery and Equipment	16	5	21
% within Sector	76,2 %	23,8 %	100,0 %
% within B7	18,2 %	33,3 %	21,0 %
Other Industries	3	0	3
% within Sector	100,0 %	,0 %	100,0 %
% within B7	3,5 %	,0 %	3,0 %
TOTAL	85	15	100
% within Sector	85,0 %	15,0 %	100,0 %
% within B7	100,0 %	100,0 %	100,0 %

1: There is no statement, 2: There is a statement, 3: There is a statement and financial information is provided

Table 16: Member of International Organizations (B7) Details of the 100 Largest Industrial Company Traded on TSX

Sectors	B7		Total
	1	2	
Manufacture of Food Beverage and Tobacco	10	1	11
% within Sector	90,9 %	9,1 %	100,0 %
% within B7	11,0 %	11,1 %	11,0 %
Manufacture of Wood and Wood Product	2	1	2
% within Sector	50,0 %	50,0 %	100,0 %
% within B7	1,1 %	11,1 %	2,0 %
Paper, Paper Products and Printing	4	0	4
% within Sector	100,0 %	,0 %	100,0 %
% within B7	4,4 %	,0 %	4,0 %
Manufacture of Chemicals	37	2	39
% within Sector	94,9 %	5,1 %	100,0 %
% within B7	40,7 %	22,2 %	39,0 %
Manufacture of None Metallic Products	2	0	2
% within Sector	100,0 %	,0 %	100,0 %
% within B7	2,2 %	,0 %	2,0 %
Basic Metal Industries	21	4	25
% within Sector	84,0 %	16,0 %	100,0 %
% within B7	23,1 %	44,4 %	25,0 %
Fabricated Metal, Machinery and Equipment	13	1	14
% within Sector	92,9 %	7,1%	100,0 %
% within B7	14,3 %	11,1 %	14,0 %
Other Industries	3	0	3
% within Sector	100,0 %	,0 %	100,0 %
% within B7	3,3%	,0 %	3,0 %
TOTAL	91	9	100
% within Sector	91,0 %	9,0 %	100,0 %
% within B7	100,0 %	100,0 %	100,0 %

1: There is no statement, 2: There is a statement, 3: There is a statement and financial information is provided.

Results of the Research

The financial statements of companies, annual reports, and the description of these reports along with web sites indicate that companies are on track of passing the inside information to stakeholders. If the information provided in these sources can be read and interpreted correctly, it is possible to reach important conclusions about the companies. Therefore, this information should be utilized more often, especially when working on descriptive researches. On our research we attempted to utilize content analysis when using these resources. Within this study, the 100 largest industrial companies traded on Istanbul Stock Exchange and the 100 largest industrial companies traded on Toronto Stock Exchange are examined.

We can say that Turkish companies included in the scope of this research only show higher rates than companies in Canada in terms of waste reduction and being member of international organizations. Undoubtedly the waste reduction is an important issue, however is not enough. Especially, design and production of environmentally friendly products should be a method for prevention occurrence of negative outcomes instead of eliminating such consequences. Thus, a proactive strategy is extremely effective in terms of green management activities. Turkish companies engage in more activities in terms of energy consumption, carbon emissions and waste reduction issues. However, it is possible to say that Canadian companies engage in almost all areas that are subject to this research at a certain level. Particularly companies in the chemical industry that are subjected to social pressure in terms of environmental hazard topics, it can be said that they have more advanced practices in green management implementation and environmentally social responsibility issues.

The degree of the elaboration of the financial aspects of such practices, measurement methods and financial value of benefits along with declarations of statements will ease the auditing efforts of practices and also help the stakeholders to learn the true size of a firm's activities.

CONCLUSION

Diminishing natural resources, degradation of the natural balance and climate change have led today's companies to undertaken responsibilities either on a voluntary social responsibility basis or with a growing public pressure, also by means of new laws and regulations that put into effect, and the positive correlation of corporate reputation with awareness of environment, pushed companies to apply certain methods and techniques in order to reduce pollution and decrease costs, such practices have become mandatory. In today's changing business environment, environmentally related activities play a critical role when achieving success.

Efforts in terms of green management and sustainability provide economic, social and environmental benefits. However, it is important to note that developing multifaceted strategies and making changes in many processes within the company is a must.

Many companies in terms of green management activities focus on cost-effective efforts. These activities often do not require large investment and they are presented by simple solutions. However, many of these activities can be easily implemented by competitors. Activities that provide a competitive advantage are from the activities spanning a longer period of time and require a company to bear certain cost. It is possible for companies to act proactively and develop leading practices and later converting such capabilities to gain competitive advantage.

Sustainability and green management practices of companies create significant opportunities in various areas especially in terms of financial performance, corporate reputation, improvement of product performance and new product development and so on. However in order to be successful in above mentioned areas, companies are required to share its activities with its stakeholders in these areas. This should not be perceived as a proposal, rather a necessity in terms of corporate governance.

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