

**Defining Green Business Ethics and Exploring Its Adoption within the Textile Industry of Pakistan****Sidra Pervez***Iqra University - Islamabad Campus, Pakistan***Abstract**

The main objective of this research paper is to propose a newly introduced concept of Green Business Ethical Practice (GBEPs) which is a composite set of 18 practices include consisting of elements that can be grouped under the following actions: repurposing & reusing, recycling, remanufacturing, reverse logistic, emergency preparedness plan, maintenance and continuation of emergency system, philanthropy, fair dealing, child labor, essential healthcare, women rights, paternal leaves, compliance to transgender laws, carbon dioxide footprint reduction, water waste management, air pollution, dust pollution, and noise pollution. This qualitative study has been conducted on twenty-five textile firms which are recognised as 'green' by international authorities and are engaged in export of textile good. The key findings of the study reveal that adoption of GBEPs not only enhances a company's reputation at the international level in terms of its responsiveness toward environment and international society but also helps it in boosting its ecological enactment by managing its environmental obligations in an efficient manner. The study recommends to formulate a comprehensive policy and regulation package for companies trying to be green and intending to the part of global value chain. There should be a universal and composite set of codes encompassing practices of social, environmental under one umbrella like GBEP to simplify the way to become internationally active. Collective steps like awareness campaigns, social recognition workshops towards conservation of environment and human integrity should be taken in order to achieve collaborated sustainable growth.

**Keywords:** GBEP, GBE, Textile, Business, Environment

Climate change, depletion of natural resources (especially non-renewable) and increase in pollution has heightened environmental awareness across the globe. Consumers, governments and environment groups are mounting pressure on modern businesses to adopt measures for reducing their damage inflicted on the environment. Such measures are loosely referred to as green practices. The increase in the demand for green practices has resulted in the formulation of new environmental policies and modification of existing environmental protocols of organizations and governments (Smith & Perks, 2010).

Global warming has heightened social awareness of green practices of organizations especially within the context of their international sourcing (Abbasi, 2012; Lun, 2011; Miroshnychenko, Barontini, & Testa, 2017). With rapid globalization in the last three decades, green business practices now determine the competitiveness of firms in international trade such that firms must meet certain benchmarks (both nationally and internationally) in order to even participate in it (Lun, 2011). Thus an increasing number of firms are implementing green business practices not only to minimize their negative impacts (such as carbon monoxide emissions, discarded packaging materials, scraped toxic materials, traffic congestion, industrial pollution etc.) on the environment but also to improve their trade volumes and profits (Miroshnychenko et al., 2017) (Sunket et al., 2017).

Green business ethics constitute an important component of green practices. The phenomenon of globalization compels us to explore and understand the green business ethics of firms not as a standalone system of norms and values but as a progression of norms within a shared system of various international organizations that constitute a particular industry- as the practices and norms can vary fundamentally among industries. This is important because today's globalized market is complex, technologically advanced, geographically dispersed with extremely integrated mechanisms of communication, production and consumption of products and services. Furthermore, quantification of the economic activities of global organizations that are reputable for their green practices is extremely difficult (Schechterle & Senxian, 2008). Yet, recent studies show

that even small improvements in green business ethics is positively correlated to improved environmental practices, social support and higher quality of the overall supply chain (Abbasi, 2012). Thus there is a need for an all-inclusive code of green business ethics for organizations. Organizations can no longer engage in deceptive marketing due to technological enhancements in information accumulation and dissemination that is prevalent nowadays (Best & Levitt, 2009).

Past research studies show (Worthington et.al, 2008; Yu et.al, 2009; Lopez-Rodriguez, S. 2009) that little consideration has been given to investigate the thought processes behind the reception and execution of green business ethics, with the exception of Corporate Social Responsibility (CSR). Developing countries that participate in international trade have historically engaged in production and thus mostly constitute first tier or second-tier suppliers within supply chains of developed country organizations. It has been observed that while these suppliers have implemented CSR, they view it as a difficult yet necessary expense that must be incurred in order to participate in supply chains of global firms (Lund-Thompson and Pillay 2012). Recent studies show a shift in this traditional view such that CSR is considered a financially beneficial practice since consumers are willing to pay higher prices for ethical products (Luna and Sharmin 2015; Acquier, Valiorgue and Daudigeos 2016). This study builds on this new view and studies green business ethics within the context of the textile industry of Pakistan.

The textile industry of Pakistan plays a significant role (9%) in the GDP of the country and occupies an important position in international trade. According to World Trade Organization the country is ranked number 10<sup>th</sup> in the list of top apparel exporters ("Changing trends in world textile and apparel trade", 2018). Its textile and clothing, which accounts for 57% of export earnings and contributes 9.5% to GDP, contributes significantly to Pakistani economy. This being the largest sector constitutes about 27% of total industrial output and employs 37% of industrial labor (Ministry of Textile Industry, 2014; TDAP, 2014). While evidence suggests that Pakistan textile units are adopting green business ethics, there is a lack of literature on what socially and environmentally responsible practices these firms are implementing.

This study explores two fundamental questions: first, what are green business ethics and second to what extent has the textile industry of Pakistan adopted green business ethical practices?

Therefore, this study aims to understand green business ethics and explore those practices within the textile industry that help textile organizations participate in trade networks of developed country firms. Relevant literature is reviewed in the next section, followed by methodology of this study and then findings and discussion. In the end, conclusions and recommendations are provided.

## Literature Review

According to literature, businesses adopted green practices in the second half of the twentieth century and this was evident on their emphasis of going green in their mission statements as well as global operations (King et.al., 2010). Rise in energy prices and governmental regulations on environmental issues developed an awareness of the environmental context among organizations, especially within their strategic initiatives. Major catastrophes such as the Bhopal incident in India (1984), the Chernobyl incident in Ukraine (1986) and the Exxon Oil Spill (1989) also fueled pro-environmental movements (Karliner 1997). Within a decade, the passive response of an organization towards the environment transformed into a proactive cooperative stance that also included accountability of its both its financial and environmental performance (Moon and Leon, 2007; Dwyer, 2009; Brown D. 2008).

Green business practices are characterized as utilizing assets to solve current problems without damaging the environment. Various authors have coined similar definitions such as to "address the issues of the present without trading off the capacity of future eras to address their own particular issues" (Daly, Cobb, & Cobb, 1994). In this context it falls under the umbrella of sustainable development and covers a wide variety of corporate, environmental and social concerns aimed at minimizing damages rather than eradicating them altogether (Vachon & Mao, 2008) (Ottman, Stafford and Hartman 2006). The idea of green business practices is not relatively novel and can be traced back in literatures on philosophy and economics, yet it entered into mainstream business literature in the 1990s. (Hueting, 1990; Humphrey & Schmitz, 2000; Linton, Klassen, & Jayaraman, 2007).

In business literature, early research on green business practices primarily focused on reduce, recycle and reuse techniques in production and waste management (Handfield, Walton, Sroufe, & Melnyk, 2002; Refsgaard & Magnussen, 2009; Zhu, Sarkis, & Lai, 2008; Zia & Devadas,

2007). Reduce technique aims at minimization of materials and energy, recycle refers to recovery of materials from discarded products whereas reuse centers on using parts of discarded products in production (Farahani, & Asgari, 2009). Waste management focuses on the treatment of, storage and disposal of waste generated during the production process and also considers minimization of waste at the production source (Marguglio, 1991).

The focus within the last decade broadened such that in recent literature entire supply chains (green supply chain management) and product life cycles (including product development) were studied for environmental and societal impacts, and emphasize a change in management mindset towards environmental management (Huge Brodin & Anderson, 2008; Linton et al., 2007) (Neto & Bloemhof- Ruwaard, 2009). This management mindset to "contribute, ensure, safeguard and enhance the nature of the earth and ensure vitality protection" is still vague in terms of its definition and materialness (Hassini, Surti, & Searcy, 2012; Linton et al., 2007), yet this is where the green business ethics originate.

The word *ethics* is derived from the Greek philosophy 'ethos' and implies a person's fundamental moral orientation toward life. Therefore, ethics can be defined as a theory of morality that attempts to systematize moral judgments that serve humans and their relationships (Garret, 1970). Applying ethics in business or *business ethics* represents the study of the activities and decisions of a business in normative context of right or wrong (Collins 1994; Shaw and Barry, 1995). In earlier literature, the term *business ethics* was depicted as an oxymoron, as businesses were not subjected to the same moral standards as the rest of society (Carr 1968). Accidents such as the collapse of the Rana Plaza in Bangladesh (Motlagh, 2014), the factory fires in Karachi (C.J, 2012), the collapses of factory building in Mumbai (Shah & Virk, 2013), wage issues and poor work conditions for employees in Cambodia (Tolson, 2014) and Sri Lanka (Kelegama & Eparachchi, 2002) led global textile units to build and maintain their reputation, integrity and social responsibility towards workers and consumers. Whereas, the "environmental movements, as Black 2008 sees, which gained popularity in 1960s forced many businesses to incorporate "some elements of ecology in their advertising campaigns" (Black 2008). This change in corporations behaviour became more prominent following incidents such as Bhopal India's deadly chemical gas leakage killing some 9,000 people in 1984, Catastrophe at Chernobyl Ukraine, where a nuclear reactor had a meltdown in 1986 killing around 4,000 with cancerous radiation, and later the Exxon Valdez oil spill in 1989. These man made tragedies resulted in a rise of the pro-environmental movements (Karliner 1997).

When organizations convert their green business practices into corporate fundamentals such that regardless of size or industry, they incorporate these approaches into their mission statements thus indicating a clear focus on going green, then such organizations engage in green business ethics (King et.al., 2010). Therefore, green business ethics can be viewed as a shift in organizational behavior towards a more proactive, inclusive and cooperative approach towards the environment (Moon and Leon 2007). This enables businesses to be more responsive towards not only their environmental but also their fiscal responsibility and accountability towards going green (Dwyer, 2009; Brown D. 2010).

Green business ethics posit various benefits for businesses. When businesses improvise innovative solutions to their environmental problems, they reduce production waste, and increase their productivity and corporate reputation. This implies higher profits because it enhances their competitiveness when faced with increasing international environmental protection regulations and higher environmental consciousness of target markets. Green business ethics directly affects a company's credibility within the society in which it operates and for this reason, "enterprises should not only be concerned about making a profit, they also should be engaged in actions that appear to further some social good, beyond the interests of the firm and what is required by law" (Garcia, 2005). Furthermore, from the viewpoint of organizational management, creating a positive climate within an organization is more effective than formal social contrail as it is less intrusive and more cost effective (Monks 2002). Thus going green covers being responsible in social, environmental and ethical terms and such "responsibility implementations" are an important discourse within the literatures of CSR and business ethics (Worthington et.al., 2008).

CSR, is a broad concept that includes stakeholder interests, social impressions, corporate governance and environmental protection (Yu et.al., 2009). Recent studies show that financial markets assign more value-reference to environmental information thus more than 50% of the largest global corporations publish their CSR and/or environmental reports periodically (Nousiainen, & Junnila, 2008; Guenster et.al., 2005). However, this also shows that there is considerable room for improvement, as many global firms are not quite there yet. Organizations can thus be positioned in three ways based on their environmental engagement: those that have achieved "green status",

those who are struggling to achieve it and those that have not yet embarked on their environmental journey (Biloslavo, & Trnavcevic, 2009; Saha, & Darnton, 2005). Thus as Biloslavo and Trnavcevic (2009) rightly pointed out that, "in consequence, companies need to make more effort to persuade customers, business partners and the public that they are green and therefore positively distinct from competitors."

The concept of Green Supply Chain Management (GSCM) integrates environmental considerations into supply chain management. Therefore, GSCM is environmental management of a supply chain that encompasses activities of product design, material sourcing and selection, manufacturing processes, delivery, end-of-life management of the product such as reuse, recycle, and reverse logistics (Srivastava, 2007; Farahani, & Asgari, 2009; Mckinnon, Cullinane, Browne & Whiteing, 2010). Reverse logistics includes all those activities within a supply chain that allow the cost-effective flow of materials from consumers to organizations for the sole purpose of recapturing value or disposal (Rogers, & Tibben, 1998).

The concept of GSCM focuses on 'green logistics' a term that represents the activities in freight transport, city logistics and even corporate environmental strategies towards logistics. Green logistics can lower supply chain costs and thus can be a source of competitive advantages by reducing risk, improving productivity and public image, and creating healthier environments for suppliers (Farahani, & Asgari, 2009). There is a need for supplier firms of developing countries to adopt green business ethics because empirical evidence suggests that green business practices have become a de facto criterion for participating in international trade with reputable global firms (Sakr, Sherif, Ahmed & El-Haggar, 2010). Such suppliers need to develop strategies for strengthening their fit in global supply chains.

While ethics has been the subject of scholarly debate for a while now, green business ethics in an understudied area, especially within the context of international trade. Thus there is a need to study the conceptualization of green business ethics and its adoption by suppliers in developing countries such as Pakistan. There is currently little published literature available that how green practices help Pakistanis textile companies in entering into global value chain and how this inclusion affect their trade volume and export profit.

#### **Textile Sector in Pakistan:**

The textile value chain is very complex and consists of different types of firms. For example, in 2013, there were 1,221 ginning units, 442 spinning units, 124 large spinning units and 425 small units which produced textile in Pakistan. The sector contributes up to 57% to the country's exports (Textile Division, 2018). The Pakistan textile industry total exported 1,006,639 US\$ in July 2017 which were greater than the export of 979,414 US\$ in the same month a year ago. The increase was 2.78%. Which means textile exports made 62% of the country's total exports. In July 2017, according to TDAP "Textiles and Garment sector showed a positive growth of 2.7%" (TDAP, 2019). Export of Textile and Garments value were US\$ 1 billion, which was US\$ 979 million during the same month last year." In May 2018 the Pakistan Bureau of Statistics (PBS) reported "the sector saw a Exports of textile and clothing products recorded an eight per cent growth year-on-year to \$11.2 billion in the 10 months of 2017-18" (shown in Figure 1 below - Dawn, 2018).

## EXPORT COMPOSITION JULY 2017

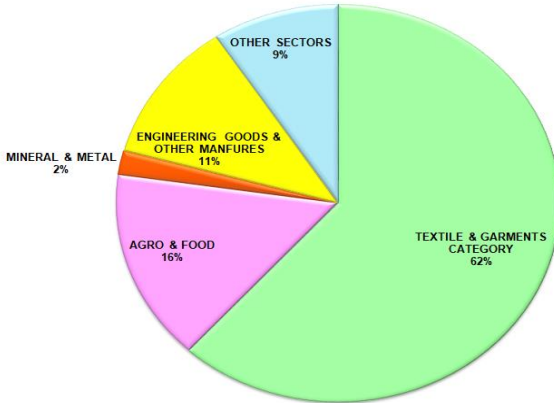


Figure 1. National Export of various Products (Source: (Dawn, 2018)).

The textile industry faces several challenges such as the energy crisis, image of the country linked to terrorism, inflation of yarn prices in the local market and low competitiveness of textile suppliers compared to the players in India and China among a few (Khan, 2017); Siddique and Shaheen 2011). The textile industry needs to streamline green practices and produce green products in order to gain an edge over regional competitors especially since Pakistan is the third largest consumer and fourth largest producer of the cotton in the world (Doom, 2011; Maria Dangelico and Pujari, 2010).

Green practices within the textile industry can occur by recycling of by-products (cotton and fiber) into raw materials for paper, automotive, furniture and construction industries; using renewable sources of energy in production, reduction in environmental pollution through reuse of water, and nontoxic dyes and fixing agents. Even though the textile industry recycles a very large amount of its waste, almost 93% by an estimate that includes waste reclaimed by other markets, yet it still ends up producing tons of discarded final products, and non-biodegradable waste products that end up contributing to landfill waste (Ekström, & Salomonson, 2014; Hawley, 2006).

Even in developed countries such as the United States recycling of textiles has become more complex in the past few decades due to the use of synthetic fibers that makes the fiber difficult to shred and recycle (Hawley, 2006). According to Environmental Protection Agency of the United States, the per capita daily disposal rate of solid waste in the United States has increased to 4.48 pounds per person in 2015 compared to 2.7 pounds in 1960 (Environmental Protection Agency, 2003). Annually, the United States denim industry deposits more than 70 million pounds of scrap denim in landfills and even though the textile industry recycles approximately 2.5 billion pounds of post-consumer waste from the waste stream, overall this represents only 30 percent of the total annual textile waste (Brill, 1997; McCurry, 1996).

There is a growing body of empirical evidence which suggests that firms in the developing countries are gradually adopting green business ethics (Gereffi & Lee, 2016) and Pakistani firms are no exception (Nadvi & Halder, 2002). It has been observed that a number of firms from different sectors involved in the world trade are adopting green business ethics in Pakistan. Of all such sectors, the textile sector is the largest sector in term of its contribution to foreign trade of the country. Though this sector is increasingly adopting green business ethics in response to the GVCs requirements in this regard, it has not attracted adequate scholarly attention in comparison to some other sectors, including surgical instruments, sports goods (Khattak & Stringer, 2017), electronic goods, football manufacturing in Sialkot (Lund-Thomsen et al., 2012) products, surgical instruments (Nadvi & Halder, 2002) etc. In fact, the adoption of green business ethics and its impacts in different areas of the textile sector of Pakistan have received scant scholarly attention. The two most neglected areas in this regard to look into the share of trade and profit of the textile firms which have adopted green business ethics.

In the available literature, one can glean different theoretical viewpoints on the adoption of green business and business ethics by business firms in the developed and developing countries. According to most researchers, the adoption of these practices benefited such firms in the long run (Guenster et.al., 2005). These benefits included retention of customers, attracting new customers, increase in the goodwill and reputation of the brand, and consequent financial profit (Luna and Sharmin 2015) and (Miroshnychenko et al., 2017). According to another group of scholars, the suppliers in the global value chain perceive the adoption of these practices as an extra cost which is likely to reduce their margin of profit and hurt their businesses in the short run (Acquier, Valiorgue, & Daudigeos, 2016).

There are two basic issues with the available theoretical literature on the subject. First, most of the available literature focuses either on green business or business ethics; it does not focus on the combination of the two areas in business practices of the firms and its impact on their businesses. Since some supplier firms have adopted both green business and business ethics, it is worthwhile to study the impact of the combination of both practices, termed as green business ethics, on their businesses. Second, the existing literature though studied the general performance of the supplier firms in relation to green business and business ethics, it paid little attention to the impact of the combination of such practices on specific areas such as volume of trade and profits of such firms.

It is viewed that a systematic examination of the impact of the combination of basic parameters of both the green business and business ethics on the specific areas of the volume of trade and profit of the supplier firms is a worthwhile exercise.

## **Research Methodology**

This study uses a qualitative research method in order to understand and explain the phenomena of green business ethics. The research adopts the constructivist view (Merriam, 2002), that there can be multiple interpretations of green business ethics within the textile industry, and the extent to which these ethics are practiced will emerge through the interactions of individuals and firms within this industry.

### **Sample and Data Collection**

Ministry of Textiles was approached for information regarding the top textile exporters of Pakistan for the year 2014-2017. The Ministry provided a list of 35 largest textile exporters on the basis of their volumes of trade. Email and phone contact was established with all these 35 firms. The sample size was twenty-five textile firms. Individuals working in top management positions in these firms were contacted to gather information on a twenty-four point questionnaire. The selected units, as they demonstrated through their publicly available record, were apparently able to provide rich insight and detailed experiences about going green and practicing green business ethical practices, all or some, and meeting ISO standards, thereby enabling the researcher to acquire the first hand information to understand the phenomena (Crabtree & Miller, 1992).

The 35 firms were studied and 25 firms that were among top exporters and had some sort of national or international social responsibility or environment-related certifications were selected because the researcher assumed that they will be able to contribute to this study by sharing their experiences and the practices they have adopted (Crabtree & Miller, 1992; Marshall, 1996). Therefore, the sample size of this study is 25 and the sampling technique applied is judgmental sampling. As Marshall and McLeod pointed out that "in qualitative research, the exact number of participants cannot be specified before the study is conducted and the number of participants is informed by the extent to which the research question has been addressed (Marshall, 1996).

The fieldwork took place in two stages. In the first stage, all the firms were sent requests for conducting interviews with their top management and owners. In-depth interviews were carried out with the two textile owners who agreed to participate. These two informants owned three (bleaching, spinning, and dyeing) and four (i.e. bleaching, spinning, dyeing, and weaving) textile units respectively. These textile units were located in Bhai Phero, Lahore, Faisalabad, and Karachi. Each interview lasted at least 45 minutes approximately. The interviews were digitally recorded and later transcribed. Based on these interviews, an open-ended questionnaire in English was designed for stage two of the study. The questionnaire was not completely adopted from any source, however, partial components were extracted from the study conducted by Zhu (Zhu, Sarkis, & Geng, 2005)

In stage two of the study, the questionnaire was administered to all the 25 firms. It is important to note that for the first question the researcher collected data from library research as

whose justification can be given in Walliman's (2011) words who see it as a "process dealing with the analysis of evidences such as historical records and documents" meaning data collected from library materials including books, journals, dissertations, theses, reports and conference proceedings. This collection also included data collected virtually, through internet sources including e-books, online journals, and soft copies of dissertations, theses, reports and conference proceedings.

Furthermore, online public records of these 25 firms such as websites and social media pages were also studied to gain insights into the green ethical practices of these firms. In the first contact established with the firms, the purpose and process of the research was communicated to all the firms. Upon receiving the verbal consent by a focal informant to become a part of the study, an appointment was scheduled and the questionnaire was administered. This data collection phase took approximately 12 months. On average it took between 1- 2 hours for the completion of the questionnaires.

### **Data Analysis**

Data obtained from the in-depth interviews as well as the questionnaires was analyzed using discourse analysis methodology, a commonly used method in the social constructivist paradigm that is used to understand a phenomenon better by breaking it down into its constituent parts (Mouton and Marais, 1991; Burns, 2006).

The data was analyzed for patterns and emergent themes. Though, no new themes emerged, similarities amongst the 25 firms in terms of the most and least adopted green ethical practices were observed. Next, the findings were analyzed in the light of existing literature to enhance understanding why some practices were adopted more over others. Furthermore, confidentiality of the data and identities of the informants was ensured by the researcher in conducting and reporting the findings of the research (Silverman, 2009; Babbie & Mouton, 2001).

### **Findings and Discussion**

The findings of this study are based on two main questions of the research that explore first, what are green business ethics; Seeing the limited utility of concepts i.e. business ethics and green business, the researcher introduced an integrated concept of green business ethics (GBE) by combining the compatible parts of the green business and business ethics. The concept includes practices consisting of elements that can be grouped under pragmatic actions including; repurposing and reusing, recycling, remanufacturing, reverse logistic, emergency preparedness plan, maintenance and continuation of emergency system, philanthropy, fair dealing, child labor, essential healthcare, women rights, carbon dioxide footprint reduction, water waste management, pollution (air, dust, noise) management, paternal leaves and compliance to transgender laws. A business that follows takes these actions is one in compliance with GBE and one that does not take these actions is not in compliance with GBE. And second, to what extent has the textile industry of Pakistan adopted such green business ethical practices?

The researcher found that the Pakistani textile industry has adopted green business ethical practices to a significant extent. To be precise the 60% of the surveyed company adopted repurposing and remanufacturing, 72% of such adopted recycling. 76% adopted remanufacturing, and 60% adopted reverse logistics.

Under corporate social responsibility, a 100% of studied companies have an emergency preparedness plan (EPP), maintenance, and continuation of EPP, philanthropy, fair dealing, child labor, essential health, women rights. However, none of the surveyed companies are in compliance with parental leaves and transgender laws.

As far as the environment is concerned 80% of the surveyed companies are in compliance with CO2 footprint reduction and 80% had water waste management system. More than 50% (56%) of the studied companies have dust pollution management and 50% of the surveyed companies have noise pollution reduction systems. However, only 20% of the studied companies have an air pollution management system.

#### **Company Profile**

The textile units selected for this research were spatially dispersed in Lahore, Islamabad, Faisalabad, and Karachi. These companies (textile units) exports cotton yarn, fiber, cloths, apparel, knitwear, and other textile products. Their contribution to the economy is commendable as they have taken into consideration the need of the hour and addresses the global environmental issues via getting environmental certifications, and socially responsive activities. The companies' size was

variable but the sample does not include small size units rather medium and large size units were taken into consideration. The number of employees varied from 350 to 1000 employees. These units have visible three tiers hierarchy where there was no open door policy and had proper SOPs starting from middle to top management.

**What are green business ethics (GBE)?**

The first research question attempts to define green business ethics (GBE) by integrating existent literature with the findings of the fieldwork. In essence, ‘going green’ implies ethical behavior because it engages initiatives for societal welfare. Literature depicts two conceptualizations of the term ‘green business’. Some studies define it in terms of a business’s environmental and social impacts (Makower and Pyke 2004; Brown and Ratledge 2010) and/or practices (G. Croston 2006; K. Slovik 2013) without ignoring its economic goals. This is a very broad generalization that blurs the boundaries between an organization’s economic, social and environmental commitments. Other researchers take a narrow approach and only consider environmental commitments (Green Times, 2013; Calling Green, 2011).

Though the utility of the ‘green’ concept is evident from its global acceptance, yet the ambiguity of the term has given organizations to implement only what is sufficient rather than what is necessary. This ambiguity of the concept coupled with varying cultural, political and economic environments of countries has led to an un-even proliferation of green business practices in the world today (K. Slovik 2013). Business that put forward false claims regarding their green practices are said to engage in ‘greenwashing’; the history of greenwashing is as old as that of ‘going green’ (Black, 2008; Ćwik 2015).

Business ethics has been traditionally studied from a normative perspective and the descriptive and explanatory approach towards the concept is fairly recent (Garret, 1970; Collins, 1994; Shaw and Barry, 1995; Alzola, 2008). Business ethics is described as a descriptive corporate practice that guides the conduct of organizations in all aspects of the business, especially in non-economic social values (Warren, 2011; Enderle, 2014; Enderle & De George, 2014; Hayibor, 2017). The study of business ethics involves describing the behavior of organizations (and its employees) as well as the standards and values (primarily moral) they claim to follow such as honesty integrity, loyalty, fairness, responsibility and citizenship (Müller et al., 2014; Moylan & Walker, 2012).

Within this context Green Business Ethics (GBE), involves describing the green practices of organizations as well as the standards and values they exhibit towards their customers and employees. We define GBE as “an integrated concept that includes practices consisting of elements that can be clustered under pragmatic actions including; reusing & repurposing, recycling, remanufacturing, reverse logistic, emergency preparedness plan, maintenance and continuation of emergency system, philanthropy, fair dealing, child labor, essential healthcare, women rights, carbon dioxide footprint reduction, water waste management, pollution (air, dust, noise) management, paternal leaves and compliance to transgender laws.”



Figure 2. Green Business Ethics.



### Green Ethical Practices in Textile Industry of Pakistan

The second research question attempts to explain to what extent the textile industry of Pakistan has adopted green business ethical practices. This question is answered using data collected from the questionnaires.

The researcher's survey shows that the textile industry of Pakistan has adopted a number of green business ethical practices that are being followed in international textile industry. Some of these practices are being practiced by up to 100% of surveyed companies and some are being practice by as low as 0% of surveyed units. The practices included elements that can be grouped under the following actions; recycling, remanufacturing, reverse logistic, access to compliance obligation, emergency preparedness plan, maintenance and continuation of emergency system, philanthropy, fair dealing, social responsibility, child labor, essential healthcare, women rights, carbon dioxide footprint reduction, water waste management, air pollution, dust pollution noise pollution paternal leaves and compliance to transgender laws.

Figure 1 shows the adoption of these practices by all surveyed textile units (as mentioned above). It can be noted from the graph that a good number of companies making efforts to take appropriate actions to be part of the global community who believe on the GBEPs. The following sections show further analysis on these parameters.

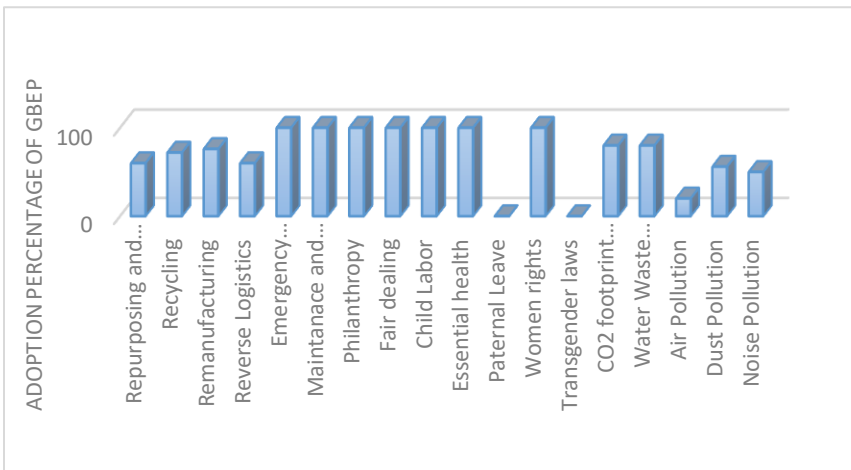


Figure 3. Pakistan Textile firms practicing GBEP  
Source: Prepared by the Author.

In Figure 3, it is clearly seen that the transgender law and paternal leaves are not embraced in the Pakistani textile industry. It is shown in the figure above that emergency preparedness plan, maintenance and continuation of these systems, philanthropy, fair dealing, child labor, essential healthcare, and women rights, are the most practiced GBEP. The treatment of air to curb air pollution is among the least practiced GBEP, followed by noise pollution, and dust pollution which are second and third least practiced practices of GBEP in the sample textile units of Pakistan.

The perception and extent to which the surveyed textile units have adopted GBEP is shown in the tables below. Whereas, Table 1 tells us about their perception on the impact of GBEP adoption on the trade volume, while Table 3 prevails their perception of the impact of this adoption on the export profit.

Table 1. Adoption of GBEPs in Surveyed Textile Units of Pakistan.

Name	Rep & Reuse	Recycling	Remanufacturing	R L	EP	M&C of EPP	Philanthropy	F D	C L	E H	W R	P L	T L	CO <sub>2</sub>	W M	Air P	Dust P	Noise P	Avg GBEP
ABC	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	✓	x	72.2%
DEF	x	✓	x	x	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	✓	✓	66.7%
GHI	x	x	x	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	x	✓	61.1%
JKL	✓	✓	x	x	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	✓	✓	77.8%
MNO	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	✓	x	77.8%
PQR	x	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	x	x	61.1%
STU	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	✓	✓	83.3%
VWX	x	x	x	x	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	✓	✓	55.6%
YZA	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	✓	✓	88.9%
AAB	x	x	x	x	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	x	✓	55.6%
BBC	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	✓	x	72.2%
CCD	x	x	x	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	x	x	55.6%
DDE	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	✓	✓	88.9%
EEF	x	✓	x	x	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	✓	✓	66.7%
FFG	✓	✓	x	x	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	x	x	61.1%
GGH	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	x	x	61.1%
HHI	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	✓	✓	88.9%
IIJ	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	✓	✓	88.9%
JKK	✓	✓	x	x	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	x	✓	66.7%
KKL	x	x	x	x	✓	✓	✓	✓	✓	✓	✓	x	x	✓	✓	x	✓	x	55.6%
LLM	x	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	x	x	x	x	x	x	x	50%
MNN	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	x	x	x	x	x	✓	x	61.1%
NNO	✓	✓	x	✓	✓	✓	✓	✓	✓	✓	✓	x	x	x	x	x	x	x	55.6%
OOP	✓	✓	x	x	✓	✓	✓	✓	✓	✓	✓	x	x	x	x	x	x	✓	55.6%
PPQ	x	x	x	✓	✓	✓	✓	✓	✓	✓	✓	x	x	x	x	x	x	x	44.4%
Total	15	19	6	15	25	25	25	25	25	25	25	0	0	20	20	5	14	12	

Table 1 reveals that there are seven GBEPs, i.e. emergency preparedness plan, maintenance and continuation of the system, philanthropy, fair dealing, child labor, essential healthcare, and women rights, which are adopted by all 25 surveyed textile units. However, no textile unit has adopted two practices, namely paternal leave and transgender laws. The reluctance of the units to adopt these two practices results in ignoring a segment of society. The table further shows that CO<sub>2</sub> footprint reduction and water waste management have been adopted by 80% of the sample textile units. Recycling is practised among 76% of the units surveyed, whereas reuse and repurposing and reverse logistics are adopted by 60% of them. The above table also shows that remanufacturing is practiced by 24% of the textile units; however among air pollution, dust pollution (56%) and noise pollution, air pollution stands at the bottom in terms of adoption. Only 20% of the surveyed textile units practise air pollution.

Table 2 is indicative of the perceptions of leaders of the surveyed textile units about the impact of GBEPs adoption on their trade volume. The majority of the surveyed textile units perceive that there is either a direct or indirect positive impact of these practices on the trade volume. The leaders of these firms perceive that the adoption of air pollution, noise pollution and dust pollution has a positive impact on the trade volume. In their view, remanufacturing, emergency preparedness plan, continuation and maintenance of emergency system, philanthropy, paternal leave, transgender laws, CO<sub>2</sub> footprint reduction, and water waste management have no impact on the trade volume. Reverse logistics is the only practice about which the informants were uncertain about the nature of its impact on the trade volume.

In other words, they were not sure whether this practice has a positive or a negative impact on the trade volume. However, the remaining four practices, essential healthcare, fair dealing, child labor and women rights, have an indirect impact on trade volume of these textile units. A small

number of surveyed textile units perceive that only one practice, repurposing and reusing, exercises a negative impact on the trade volume.

Table 2. *Impact of GBEPs on Trade Volume: Perception of Surveyed Textile Units*

Name	Rep & Reus	Recyc	Reman	RL	EP	M&N of EPP	Phila	F C	C L	E H	W R	P L	T L	CO 2	WW M	A P	Dust P	Noise P
ABC	Green			Yellow														
DEF																		
GHI				Yellow														
JKL	Red																	
MNO	Green	Green		Yellow		Grey	Green						Yellow		Light Blue			Green
PQR																		
STU	Red	Green		Yellow														
VWX							Green											
YZA	Green	Green		Yellow														
AAB																		
BBC				Yellow														
CCD							Green											
DDE	Green	Green		Yellow												Light Blue		Green
EEF																		
FFG																		
GGH	Red																	
HHI	Green	Green														Light Blue		Green
IJJ	Green	Green		Yellow														Green
JJK																		
KKL	Yellow		Yellow	Light Green	Yellow												Yellow	
LLM	Green	Green																
MMN		Yellow		Light Green		Yellow	Green										Yellow	
NNO	Green	Green																
OOP	Red		Green	Yellow														Yellow
PPQ	Green	Green	Light Green	Yellow														

Source: Based on Data Collected Through Interviews

Positive Impact	Maybe	No Impact	Indirect Impact	Negative Impact	No Data
-----------------	-------	-----------	-----------------	-----------------	---------

In Table 3, the perceptions of the leaders of the surveyed textile units about the impact of the adoption of GBEPs on the export profit are presented. The leaders of these firms conceded that some of the practices like fair dealing, essential healthcare, child labor and women’s rights have an indirect impact on the profit earned from the export of textile products of these firms. However, seven of the GBEPs, in their opinion, have no impact on their export profit. These seven practices include remanufacturing, emergency preparedness plan, maintenance and continuation of emergency system, philanthropy, paternal leave, transgender laws, and CO<sub>2</sub> footprint reduction. According to their perception, the water waste management, treatment of air pollution, dust pollution and noise pollution have a positive impact on their export profit. The practice of repurposing and reusing received a mix response over its impact on the profit. In other words, according to some textile units it has a positive impact on their trade profit; while others perceive that it exercises a negative impact on their trade profit. This mixed response requires an explanation which may attract the attention of future researchers. It is worth mentioning that eleven out of

fifteen textile units which adopted the practice of repurposing and reusing offered no response about the impact of this adoption on their trade profit.

Table 3. Impact of GBEP on Export Profit: Perception of Surveyed Textile units

Name	Rep & reus	Recyc	Reman	RL	EPP	M&C of EPP	Philan	FD	CL	EH	WR	PL	TL	CO2	WWM	Air P	Dust P	Noise P
ABC																		
DEF																		
GHI																		
JKL																		
MNO																		
PQR																		
STU																		
VWX																		
YZA																		
AAB																		
BBC																		
CCD																		
DDE																		
EEF																		
FFG																		
GGH																		
HHI																		
IJJ																		
KKL																		
LLM																		
MMN																		
NNO																		
OOO																		
PPQ																		

Source: Based on Data Collected Through Interviews

Positive Impact	Maybe	No Impact	Indirect Impact	Negative Impact	No Data
-----------------	-------	-----------	-----------------	-----------------	---------

### Repurposing and remanufacturing

The researcher found out that fifteen out of twenty-five Pakistani textile companies are currently practicing reuse and repurposing. Whereas the remaining ten companies are not practicing it. This means that 60% of surveyed companies are practicing reuse and repurposing in one way or the other. Of these, six companies reported an increase in their trade volume and export profit. Whereas, three companies reported a decrease in their trade volume, profit and export. However, sixteen other companies did not provide any data that how reuse / repurposing affected their trade volume, profit or export.

### Recycling

Seventy-two percent of the surveyed textile units reported that they are practicing recycling in their operations. Out of these seventy-two percent, almost cent percent are practicing reprocessing used clothing, fibrous material and clothing scrap from the manufacturing process. Mostly the spinning and weaving units were observed to be practicing the recycling of cotton, wool, nylon fiber, polyester fiber, and synthetic fiber. These fibers and material were used in filling, car insulation, panels making and matterussing of the products. None of these units reported any considerable impact on the trade volume and export, however, six out of eighteen units, those who reported having recycling practices also reported an increase in their profit. Whereas, nineteen out of twenty-five companies did not report any impact of recycling practices on their profit.

### Remanufacturing

It was observed in the investigation that only small number of textile units in Pakistan are practicing remanufacturing. Data shows that a larger chunk as big as seventy-six percent of the surveyed textile units does not practice remanufacturing. Therefore, no impact on trade volume, profit and export was reported. Even though the six companies who have been practicing remanufacturing could not identify or provide any data on their remanufacturing processes.

### Reverse Logistics

Though reverse logistics saves handful amount of resources however, only 60% textile units are practically engaged in reverse logistics. On the other hand, forty percent of the textile units surveyed have not been utilizing the reverse logistics and have shown no impact on their trade volume, profit and export. Furthermore, the units who are practicing reverse logistics are of the view that their profit has increased regardless of the increase in their trade volume or export.

### Environmental Issues from textile industry perspective

The respondents of the survey reported the following environmental issues in textile industry. Five out of 25 respondents that was related to spinning pointed out noise and dust as main issues. Ten respondents that were related to weaving reported dust and fluff as main issues, whereas, 4 respondent of bleaching reported chemicals like Corbin dioxide and water waste as main issue. The remaining five respondents, three related to printing and two related to finishing also reported the similar issues. No textile unit reported any impact of these environmental issues on their trade volume and profit from the export though, eighty-four percent of the surveyed companies reported that they are taking measures or they have implemented system to manage these issues.

Only four out of twenty-five companies reported that they do not foresee the need for any system to tackle the environmental issues on their part. Out of these eighty-four percent, majority textile units among the wet manufacturing have had installed waste heat recovery boilers, husk boilers, caustic recovery plant, effluent treatment plant and better cotton initiative as main means to counterfeit their respective environmental issues. However, none of the textile units reported that how the implementation or maintenance of these systems impact on their trade volume and profit from the export.

#### **Emergency Preparedness Plan**

A hundred percent positive response was recorded when the surveyed units were asked about determining and access to the compliance obligations related to their environmental aspect. The respondents identified practices as a part of ISO 14001, Warp, Oeko-Tex protocols. However, no impact on the trade volume and export profit was reported. A hundred percent positive response was recorded when the surveyed units about their emergency preparedness plan. The respondents identified practices as a part of ISO 14001, Warp, Oeko-Tex<sup>®</sup> Protocols. However, no impact on the trade volume and export profit was reported.

#### **Maintenance and continuation of emergency system and Philanthropy**

A hundred percent positive response was recorded when the surveyed units about the maintenance and continuation of emergency system. The respondents identified such practices as prerequisite of ISO 14001, Warp, Oeko-Tex protocols. However, no impact on the trade. As per the research, eighty percent of the surveyed companies donates money, products, and services to social causes and their corporate social responsibility. Their philanthropic actions targets education, healthcare, and community welfare largely. Though no direct significant impact was reported, these give back to community programs, however, seems to be would have contributed to their reputation at local and global arena.

#### **Fair dealing**

A hundred percent positive response was reported when these textile units were inquired on their employees' rights. The respondents reported that they have Human resource development departments where they keep their employee track record and have their performance appraisals filled time to time to reward their employees fairly. In addition to this, the respondents reportedly have facilities including welfare department, children education, maternal leaves, etc. However, no impact of such practices was reported to have an impact on the trade volume and profit of the textile units. A hundred percent positive response was recorded from the respondents when it came to social responsibility. The respondents were asked whether they support any specific social cause or a nongovernmental organization (NGO)? Interestingly, cent percent respondents supports causes of spreading education, providing food, good health and shelter in some cases. However, this has no impact on their trade volume and profit.

#### **Child Labor and Essential Healthcare**

All twenty-five respondents showed compliance to child labor laws and reported that they do not engage children in their factory chores in any way. Since noncompliance to the child labor has a negative impact on the reputation of any organization, its compliance has no significant positive impact on the trade volume and profit from the international business. All twenty-five respondents reported provision of essential healthcare to their employees. The surveyed textile units reported the availability of first aid, ambulances and financial assistance at hospital for employees and their families either directly or through third-party insurer. Though the respondents did not report any direct and significant impact of provision of essential healthcare to their employees but it is understandable that this practice is a part of basic protocols and measures, and if violated, and could have serious impact on the company's reputation and trade volume and export.

#### **Carbon Dioxide Footprint Reduction and Water waste management**

Twenty out of twenty-five textile units reported that they take steps to minimize carbon dioxide footprint, whereas the remaining five did not respond to this question. Those who responded positively were not able to identify any specific steps to minimize the carbon dioxide footprint. However, the units reported no impact of these steps on their trade volume and export profit. An eighty percent positive response was recorded when the surveyed units were asked whether they manage water wastes? Only four out of twenty-five companies passed on this question. Those who said they are taking steps to manage their water waste said this practice did not impact their trade volume however it had increased their export profit. No particular measures were identified by the respondent to manage their water wastes.

### **Air Pollution, Dust Pollution and Noise Pollution**

Only twenty percent respondents said they are managing air pollution. An overwhelming 80% number of surveyed units denied to response on this or responded negatively. Those who responded positively did not identify any specific system for air pollution reduction. However, no impact on the trade volume and export profit was reported. Almost half, 56%, of the surveyed units reported that they are managing their dust pollution by dust sucking machines and by providing their workers with masks. Even units did not respond on this question. Those who reported having a system in place did not report an impact of this on their trade volume and export profit. A 50% positive response was recorded when the surveyed units were inquired on the management of noise pollution. Twelve out of twenty-five did not respond to the question. Those who responded positively, said that they update their machines regularly and provide their employees with noise cancelling headphones. However, no impact on the trade volume and export profit was reported.

### **Paternal Leaves and Women Rights**

A hundred percent negative response was reported on availability of paternal leaves in the surveyed units. The surveyed units reported availability of general leaves but no particular leaves. The respondents did not identify any impact of this practice on their trade volume or export profit. A hundred percent positive response was recorded when the surveyed units were asked about women rights. Since in most cases the textile industry has female workers, so it is vital that they must respect women right to show compliance with international protocols. The respondents reported having strong protective measures to make sure women rights and identified such practices as prerequisite of ISO 14001, Warp, Oeko-Tex protocols. However, no impact on the trade volume and export profit was reported.

### **Compliance to transgender laws**

A hundred percent negative response was reported when these textile units were asked whether they hire third genders. The surveyed units said they respect transgender laws but do not hire third genders. The respondents did not identify any impact of this practice on their trade volume or export profit.

### **Conclusion and Recommendations**

Social and environmental awareness brought businesses to ponder and act proactively to address the concerns of the stakeholder such as going green and being ethically responsive. Likewise, the government institutions too started taking interest in responding to the challenges faced by the mother earth due to its industrial hazards- beside its fruitful gains. While exploring new avenues for progress, organizations became more responsive to taking the aforementioned initiatives i.e. environment friendly and ethically responsive. Hence, the performance credibility and accountability could be maintained on global level. However, having drawbacks or misuse of the concept of going green like green-washing and false social responsive activities lead to the integrated concept of Green Business Ethics while keeping in consideration the utmost elements of supply chain management, ISO 14001 and ISO 26000. Thence, a set of green business ethical practices has been introduced to lead the companies to be at par with international standards and become more competent in the global market. Such practice increases a company's trade volume and export profit by making it visible in the international market with more profound strategic position and effectively market itself in the fast paced global market. It is believed that adoption of GBEPs will lead to repositioning in the international market and will enhance reputation and goodwill.

This research has its usual limitations such as time and financial constraints. Though the data collection undergone through different phases yet it was managed tactfully. Nevertheless, delays were faced in more than half of the surveys where hectic hours of waiting and in few cases postponing was faced for the focal person inside a company's premises. Gathering the information from the employees, time and financial constraints were amongst the few limitation of the study. The study recommends policymakers to formulate a comprehensive policy and regulation package for companies trying to be green and intending to the part of global value chain. The research further endorses that there should be a universal and composite set of codes like the one presented in this scientific study. Collective steps towards conservation of environment and human integrity should be taken in order to achieve collaborated sustainable growth is also recommended by this research, which will be covered in research write up in upcoming research article. In the future this research may be extended to explore in the form of, a case study, the categorical impact of adaptation and practices of these GPE by Pakistani textile companies on their trade volume, export profit, environment and social corporate responsibility. Further the concept introduced in this study for textile units can be adopted for other sectors of the economy in the future studies.

## References

- Abbasi, M. (2012). Sustainable practices in Pakistani manufacturing supply chains: Motives, sharing mechanism and performance outcome. *Journal of Quality and Technology Management*, 8(2), 51-74.
- Best, L., & Levitt, K. (2009). *Essays on the theory of plantation economy: A historical and Institutional approach to Caribbean economic development*: University of the West Indies Press.
- Changing trends in world textile and apparel trade. (2018, September 4). Retrieved from [https://www.just-style.com/analysis/changing-trends-in-world-textile-and-apparel-trade\_id134353.aspx].
- Daly, H. E., Cobb, J. B., & Cobb, C. W. (1994). *For the common good: Redirecting the economy toward community, the environment, and a sustainable future*: Beacon Press.
- Handfield, R., Walton, S. V., Sroufe, R., & Melnyk, S. A. (2002). Applying environmental criteria to supplier assessment: A study in the application of the Analytical Hierarchy Process. *European journal of operational research*, 141(1), 70-87.
- Hassini, E., Surti, C., & Searcy, C. (2012). A literature review and a case study of sustainable supply chains with a focus on metrics. *International Journal of Production Economics*, 140(1), 69-82.
- Huetting, R. (1990). The Brundtland report: a matter of conflicting goals. *Ecological Economics*, 2(2), 109-117.
- Huge Brodin, M., & Anderson, H. (2008). Recycling calls for reevaluation. *Supply Chain Management: An International Journal*, 13(1), 9-15.
- Humphrey, J., & Schmitz, H. (2000). *Governance and upgrading: linking industrial cluster and global value chain research* (Vol. 120): Institute of Development Studies Brighton.
- Khan, M. J. (2017). An Exploratory Evidence of the Types of Challenges and Opportunities Perceived by the Small and Medium Enterprises (SMEs) in the Apparel Export Sector of Pakistan. *Abasyn University Journal of Social Sciences*, 10(2).
- Khattak, A., & Stringer, C. (2017). Environmental Upgrading in Pakistan's Sporting Goods Industry in Global Value Chains: A Question of Progress. *Business & Economic Review*, 9(1), 43-64.
- Linton, J. D., Klassen, R., & Jayaraman, V. (2007). Sustainable supply chains: An introduction. *Journal of operations management*, 25(6), 1075-1082.
- Lopez-Rodriguez, S. (2009). Environmental engagement, organizational capability and firm performance. *Corporate Governance*, Vol. 9, No. 4, pp. 400-8
- Lun, Y. V. (2011). Green management practices and firm performance: a case of container terminal operations. *Resources, Conservation and Recycling*, 55(6), 559-566.
- Miroshnychenko, I., Barontini, R., & Testa, F. (2017). Green practices and financial performance: A global outlook. *Journal of Cleaner Production*.
- Pakistan's Trade Statistics Monthly Review (July 2017-18). (2019, February) Retrieved [https://www.tdap.gov.pk/tdap-statistics.php]
- Pakistan's textile exports jump 8pc. (2018, May) Retrieved [https://www.dawn.com/news/1409209]
- Refsgaard, K., & Magnussen, K. (2009). Household behaviour and attitudes with respect to recycling food waste—experiences from focus groups. *Journal of Environmental management*, 90(2), 760-771.
- Schechterle, R., & Senxian, J. (2008). Building a green supply chain: social responsibility for fun and profit. *Aberdeen Group*.
- Textile Division. (2019, February) Retrieved [http://www.textile.gov.pk/]
- Vachon, S., & Mao, Z. (2008). Linking supply chain strength to sustainable development: a country-level analysis. *Journal of Cleaner Production*, 16(15), 1552-1560.
- Worthington I, Ram M, Boyal H, Shah M. Researching the drivers of socially responsible purchasing: A Cross-National study of supplier diversity initiatives. *Journal of Business Ethics* 2008; 79(3): 319-31
- Yu V, Ting H, Wu YCJ. Assessing the greenness effort for European firms: A resource efficiency perspective. *Management Decision* 2009; 47(7): 1065-79
- Zhu, Q., Sarkis, J., & Lai, K.-h. (2008). Confirmation of a measurement model for green supply chain management practices implementation. *International Journal of Production Economics*, 111(2), 261-273.
- Zia, H., & Devadas, V. (2007). Municipal solid waste management in Kanpur, India: obstacles and prospects. *Management of Environmental Quality: An International Journal*, 18(1), 89-108.