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## Mediating Effect of Green Human Resource Management (GHRM) and Organizational Agility (OA) On Firm Environmental Performance (FEP): By Applying Quantitative Research Approach



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**Abstract:** *The current study seeks to investigate the influence of Environmentally Specific Transformational Leadership (ESTL) with the mediating effect of Green Human Resource Management (GHRM) and Organizational Agility (OA) On Firm Environmental Performance (FEP) by applying a quantitative research approach to collect and analyze the data and its results. A quantitative research design will be used, and a survey questionnaire comprised of 40 items from which 11 items for demographic questions and 29 items measuring the impact of Environmentally Specific Transformational Leadership, Organizational Agility Firm hypothesized Environmentally Specific Transformational Leadership has an impact on Firm Environmental Performance via Green Human Resource Management and Organizational Agility. The research framework is seen under the light of Resource Based View theory (RBV) and Transformational Leadership theory. The finding may be able to help organizations better understand the role of leaders in making efforts for environmental performance and better-equipping organizations with agility.*

**Key Words:** Firm Environmental Performance, Green Human Resource Management, Organizational Agility, Environmentally Specific Transformational Leadership

**JEL Classification:**

### Introduction

The global textile market expanded from \$530.97 to \$577.83. After the Russian-Ukraine war and Covid-19, the textile industry is predicted to increase at a 5.7% CAGR to \$722.32 billion by 2026, which showcases its impact as a major global revenue generator (Textile Industry in Pakistan, n.d.). While

comparing data for consumption and manufacture especially in recent years, the textile industry has increased dramatically with swift development with respect to consumers and enhancement in standard of living. One of the utmost crucial businesses in the textile industry is the apparel business, which is leading and, in a way, considered to

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be a wide-reaching industry. In accordance with trade, international production, employment, industrial fabrication, and foreign exchange it plays a significant role in improving any country's economy (Ali et al. 2014). New job and business ventures can be explored because of investment, trade, and international production and this contributes positively towards economies helping them emerge and contribute in foreign markets to give a unique advantage by executing planning, manufacturing, and moving finished products expertly (Kabir, Singh, and Ferrantino 2019).

The post-quota and scape have changed substantially. Altered global trade patterns and heightened rivalry because of this, on September 2, 2004, a separate Ministry was established, with duties given to developing ideas and activities to aid the textile industry. Pakistan ranks fourth in the world in terms of cotton yarn and fabric production, second in yarn exports, and third in fabric exports. Cotton output in the United States recorded an unprecedented peak of 14.81 million bales on April 31, 2012. Textile mills are indeed working, crushing the former high of 14.31 million bales in 2004-05. Procured at historic levels, amassing upwards of 13.44 million bales out of a total of 14.81 million bales. The country has also imported more than a million bales of cotton. Superior quality from the United States, India, and Brazil for merger resolves during a similar time.

According to the Textile Commissioner's Organization (TOC) annual report, for the economic growth of the country textile industry is considered one of the major players while considering the industrial sector. According to current statistics, Pakistan's textile segment contributed more than 60% of total exports, which reached over US \$ 5.2 billion. The sector generates and exports around 46% of Pakistan's overall output. This sector is responsible for 8.5% of the total Gross Domestic Product (GDP). It employs 38% of the labour force in the country, or over 15 million individuals (www.fibre2fashion.com, n.d.).

It continues to be one of Pakistan's most important sectors, relying completely on the country's own raw materials and guiding the significant perceived benefits of capital consumption. Since it is labour concentrated and provides initial entry-level positions for the inexperienced and lacking skills, the expansion of this industry is remarkable since Pakistan's borders are drawn and it has now grown into an important export-grounded industrial sub-division. There are many effects that come due to this immense industry. There is significant potential for expansion in terms of vertically and horizontally in accordance with domestic textile goods and production thanks to the probable raw cotton manufacture. The above figure 2 displays textile exports over the years starting from 1996 till 2014. The value is shown in millions (\$) and the value is increasing per year, which shows a promising future for textile exports.

Looking simply at the first portion, the sector is today divided into two sections: a large-scale structured segment and an extremely disintegrated cottage/minimal-scale market. The systematized sector is mostly comprised of unified textile mills, which contain a hefty percentage of "spinning units" as well as a modest number of shuttles and loom units. The industry, which has a significant export potential (weaving, finishing, garment, towels, and hosiery), is chaotic. Some divisions have gone global and have a forward-thinking business strategy. As of June 2021, Pakistan had 517 textile units (40 composite units and 477 spinning units).

There are 375 traditional looms and 28,500 shuttle-less looms. The spinning sector has fully fledged in lockstep with both export petition and cotton output. Following suit is the weaving and processing business. Air-jet Weaving machines were created by means of freestanding units or in combination with spinning or processing machines. Backward integration is taking place in some clothing units while spinning units are building weaving, finishing, and creating capacities to fulfil the chain. Textile and garment sectors, on the other hand, are complimentary and

horizontally/vertically integrated, either via the same administration or by corporate tie-ups.

The textile industry's results have been under pressure for a long time. The industry was striving hard to maintain its global market share. Despite the global economic slump, cotton spinning, weaving, textile processing, and created sectors grew. (Performance of Textile Industry, n.d.)

Scarcity of empirical linking with firms, notably the industrial sector of rising nations such as Malaysia (Yusliza et al. [2019](#)). As a result, scholars emphasize the need for empirical data in understanding the conceptual process between environmentally specific transformational leaders and firm environmental performance via the mediating function of green human resource management and organizational agility.

Second, this study aims to look at how environmentally Specific Transformational Leadership Impacts a Firm's Environmental Performance. Prior research on environmentally specific leadership has mostly concentrated on the link between ESTL and individual activities such as pro-environmental efforts (Afsar, Cheema, and Javed 2018; Peng, Lee, and Lu [2020](#)). (Robertson and Carleton [2018](#)). Fewer research works have been directed to assess the effect of ESTL on FEP. (Chen and Chang [2013](#)), for example, the hypothesis in this study is that ESTL enhances individuals' green creativity, hence improving the performance of sustainable product creation. According to (Singh et al. [2020](#)), found in the environment leadership modifies organizational behaviours, increases creativity, and hence improves performance. Each stream has investigated the factors responsible for and how ESTL affects organizational associates who share perspectives on organizational expectations and policies, highlighting the gap in developing a successful GHRM system. This study is particularly significant because it aims to look at ESTL and its influence on the consequences of firms and individuals by influencing pro-environmental thinking and behaviours (Peng et al. [2020](#)), but those cognitive mindsets and behaviours must be

built through a system. The proposition for this research study is that ESTL will initiate green behaviour through GHRM, leading to a more agile and flexible organization and more adaptability specifically in Firm environmental performance.

Generally, some part of agility is studied in pairing with green HRM adjacent to lean-agility (LEAGILE) as (Alavi and Aghakhani [2021](#)) mentioned in their research that the SEM analysis indicates that all GHRM practices had a substantial and beneficial influence on the lean-agile approach. Keeping this research, finding in mind the research aims to study GHRM and in the same study where agility as a whole component not some part of it is being proposed to be studied. In the context of OA's relationship with GHRM when we look at the existing literature for combined research on OA and GHRM we can find fewer studies that show the relationship and impact of the current study attempts to give evidence of how organizational practices and human capabilities might affect organizational dynamism to tackle the challenge of how businesses are able to deal with an unexpected and continuously changing environment. This study aims to test that human capital is such an important component of success that it plays a substantial impact in the expansion of organizational agility, it is important to note that while examining human resources, strategic roles, and their influence on organizational agility. This study emphasizes the significance of organizational agility and human resource management in enhancing organizational productivity and competitive capacities.

According to (Najrani [2016](#)), organizational agility may improve company performance through reactionary, proactive, and inventive agility. To flourish in an international market, a business must grasp all three agilities and employ the one that will benefit them if the context is changed to environmental performance there is less research that mentions a relationship between these two in a green context, we aim to test such relationship in this research study.

According to United Nations Development Programs, Pakistan has recently suffered significant adversity (UNDP). Pakistan is extremely vulnerable to the consequences of climate change. Pakistan is ranked fifth among countries most susceptible to climate change, according to the World Risk Index 2020. From 1999 to 2018, the nation saw 152 severe weather events, resulting in massive damages of USD 3.8 billion. Human consequences of such disasters, such as extreme weather in Peshawar and Karachi, or suffocating pollution in Lahore, have major health and economic implications. Although Pakistan contributes less than 1% of global pollution, it creates more pollution within itself, which leads to global warming and natural disasters, eventually resulting in deaths. According to World Health Organization (WHO), data, environmental factors are responsible for around 24% of all fatalities. According to the United Nations Environment Program, textile mills contribute to one-fifth of global industrial water pollution and around 8% of global greenhouse gas emissions (UNEP, 2021). Organizations that understand the importance of firm environmental performance also understand the social compliance values of it in relation to public perception leading to a USP for the organization within the market against its competitors.

We can better deal with and comprehend these issues by taking green measures for organizational strategies where we can have green practices implemented in order to gain better environmental firm performance and overall competitive advantage. When organizations are in a competitive market and they must maintain a certain level of competitive edge by keeping themselves different from their adversary, improving environmental performance can help boost their image providing them with the USP they need in order to differentiate themselves from others. To improve firm environmental performance, we can work on the numbers that are linked with negative impacts within society. The wastewater generated by the textile industry, if reduced, can help save lives and ultimately the environment.

Environmental conservation is very important for human survival due to recent floods and climate change. The start of realization is on a greater level. Everyone wants to look for ways to help avoid such disasters. What role environmentally specific transformational leaders are going to work on adopting to take green initiatives by promoting green ideas and to create policies by helping generate GHRM we can have better organizational agility in respect to responding better to the environmental uncertainties because of the green practices creating change within the organization. "ESTL is characterized as a transformational leadership manifestation within which the leadership behaviours are aimed at fostering pro-environmental activities and green practices" (Zhu et al. 2022). "Green Human Resource Management (GHRM) assists in the creation and development of environmentally responsible practices and activities to recruit, train, involve, and retain personnel" (Hameed, Mahmood, and Shoaib 2022). "Organizational agility enables organizations to rely on their diverse assets to adapt to industry growth, which is often unpredictable and necessitates responsiveness and pro-activity in operating operations if the firm wants to capture chances and lead" (Tallon et al. 2019). "Firm environmental performance of an organization is concerned with the environmental effect of its activities, which can result in waste emissions into the air, land, and water".

The introduction provided the groundwork for the study by building a conceptual knowledge of the proposed research model based on a thorough evaluation of peer-reviewed journal literature on business environmental performance. The major variables of this study will be explored in greater detail in the second chapter, and a research framework will be given that may, considering theory, rationally establish the researcher's argument for the claimed correlation among the variables of the research model. Following a full description of the research methods for evaluating the given hypotheses in the previous chapter, the third chapter will be written.

## Literature Review

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This literature review of the research objectives which were previously suggested, and the theoretical lens of Resource Based View Theory for OA, GHRM & FEP are provided whereas Transformational Leadership Theory for ESTL is being used. The literature in this chapter will be utilized to construct testable hypotheses, which will be used to show a research framework at the conclusion of the chapter.

## Resource Based View Theory (RBV)

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Resource-based view theory says that the effect of any organization's archetype has had an immense effect on its strategy for content production since previous years when we put importance on distinctive organizational capacities which lead to a competitive edge. In the light of (RBV) theory, it is said that an organization is seen as a pool or resource which can be labelled as monetary resources, non-monetary, human resources, physical and other organizational resources. The idea's proponents contend that a mixture of unique assets and skills gives businesses the opportunity to acquire near-monopoly dominance in their industry. (Hamel and Heene [1994](#); Hamel and Prahalad Ck n.d.; Prahalad and Hamel [1990](#)). Competence-based initiatives assist organizations in gaining and maintaining a competitive advantage (Hamel and Heene [1994](#)).

Under the resource-based perspective, firms have assets, some of which provide them with a competitive edge and yet another portion of which improves long-term efficiency. Empirical research of firm performance by means of (RBV) has revealed disparities not just across enterprises in the same marketplace, but also inside the tighter boundaries of subgroups in industrial sectors. This illustrates that firm-specific resources can have a large impact on performance (Mahoney and Pandian [1992](#)).

The company that possesses (or manages) resources that are precious and scarce and whose benefits it may get gives it a competitive edge in the short term. This

advantage can last eternally. The business can prevent capital duplication, transfer, or replacement to the degree that this advantage can be maintained over long periods of time. In general, empirical research based on theory has backed up the resource-based viewpoint (McGrath, Macmillan, and Venkataraman [1995](#); Miller and Shamsie [1996](#); Zaheer and Zaheer [1997](#)). Depending on the perspective, resources might be physical, intangible, or personnel-based. Tangible resources include cash reserves and physical assets such as equipment, supplies, and input materials supply. Intangible assets include image, technology, and human capital, as well as culture, staff training and competency, and devotion and loyalty.

For two reasons, the company's resource-based strategy provides corporate social responsibility researchers with a tool for expanding their understanding of how corporate citizenship policy impacts the lowest line. First, the resource-based perspective prioritizes performance as the main outcome variable. Second, resource-based work, such as social responsibility literature, clearly emphasizes the significance of intangible notions such as know-how organizational ideals relevance of intangible ideas such as know-how, organizational values. These theoretical complementarities provide a significant potential for us to capitalize on in our work on environmental performance.

Green HRM is a phrase that has recently evolved to expressly tie HRM to environmental challenges where HRM practices are evolved in such a way that it helps an organization to become green which can help them achieve unique strategies. It is important to weigh human and behavioural factors must be considered for establishing organizational sustainability as it can impact organization more than it is considered generally but if observed carefully then it is understood that an organization's main asset is its human resource (Kim Anon n.d.-a et al [2017](#); Graves, Sarkis, and Zhu [2013](#); Jackson, Schuler, and Jiang [2014](#); Walker et al. [2014](#)). The theoretical foundation for the GHRM field of research is

RBV theory. According to RBV, human resources are critical to a company's competitive advantage if human resources are better equipped to deal with problems that can precisely take those decisions that are necessary in order to deal with situations (Barney, 1991). RBV has been used to better grasp the significance of human factors while implementing new organizational procedures. RBV is considered to provide an established theoretical framework for understanding the spread of green HRM within organizations when green initiatives are taken to help employees deploy and implement in their work environment and their HRM practices.

Based on the RBV theory, a study was conducted on businesses operating in the transpacific partnership market where they used (RBV) to define the model where they implemented GHRM practices (Yusliza, Othman, and Jabbour 2017). When we talk about Organizational agility Researchers see it as an illustration of higher-order organizational skills that enable the company to use a variety of events in order to be responsive and flexible to accommodate changes occurring internally and externally.

To acquire a competitive edge, changes must be made to organizational outputs, architecture, and procedures study idea highlights the need for risk reduction when implementing critical organizational reforms If a firm produces exceptional performance, the amount of organizational agility has been identified as a critical factor.

Since it enables firms to function in a changing environment, agility is seen as a facilitator for organizations. Significant causes of adaptation include a dynamic and competitive market, technological breakthroughs, changes in consumer demand, and shifts in social issues including legal, ecological, or workforce/workplace challenges and because of it, an organization should be able to tolerate and respond well to these issues. According to a Deloitte report, 94% of organizations surveyed considered agility to be a significant success component (Walsh, et al 2017).

According to (Hou et al. 2023) organizational agility is the ability of a business to adapt to and respond to a changing environment and these changes can be unpredictable as well. It has two functions: adaptation to and identification and exploitation of opportunities in a dynamic environment, which should be pursued as quickly and effectively as a possible organization that has command over such qualities can function well even in turbulent situations. This means, as Yusuf et al. so ably highlighted.

### Transformational Leadership Theory

Individual organizational behaviour is governed by different interacting factors located at various levels of the organization and personal characteristics, according to interactional psychology. Leadership and connections between leadership and the mentee are important organizational aspects that impact teachers' professional growth. The idea of transformational leadership (TL) is among the most investigated in the educational environment, focusing on leadership traits as an essential context element in relation to employee behaviour.

Transformational leaders inspire their subordinates to meet and even exceed their own performance goals. They help their employees by formulating strategies that can create an environment to grow and develop. These managers increase productivity by thinking of ways to enhance the performance of their workforce. The following actions are what Bass, 1985 defines as transformational leadership inspirational drive, or the capacity of the leader to encourage cooperation and offer direction during difficult tasks; the personal involvement on an individual level and the ability of the leader to engage with each employee and consider each person's unique requirements and aspirations for personal development is referred to as individual attention. When we consider everyone's personal unique charm and their face value then it becomes easier to develop them (Waseem et al. 2022). When leaders have an impact on their followers and act in a way

that makes those followers see them as role models, this is known as idealized influence the influence based on idealization (e.g., they maintain high standards of ethics and share risks with their subordinates) they become more than just an employee leader dynamic but an influential ideal person and its followers. in addition to intellectual stimulation, which refers to a leader's capacity to empower and include followers in decision-making processes while furthermore providing possibilities for innovation and work competency. "Transformational leadership (TL) is a type of leadership in which the leader and followers communicate openly to steer them through a vision-driven change.

(Robertson & Barling, 2013) adapted transformational leadership to environmental challenges to increase its usefulness in an environmental context. Environmentally Specific Transformational Leadership (ESTL) is defined as "a sort of transformational leadership (TL) in which the substance of the leadership behaviours is all focused on strengthening pro-environmental measures. The four ideal behaviours are Environmental Idealized Influence (EII), Environmental Inspirational Motivation (EIM), Environmental Intellectual Stimulation (EIS), and Environmental Individualized Consideration (EIC) (EIC)". EII refers to a leader's moral commitment to a sustainable world and sincere participation in pro-environmental activities. Through this, the leader sets a positive example for their followers by engaging in pro-environmental activities and making plans in this context. EIM refers to the passionate desire of followers to put aside their individualism in order to work for a common pro-environmental aim. They are inspired to cooperate as a group or organization to achieve their environmental goal. EIS fosters an intellectual stimulation that calls for knowledge and intellectual interaction by encouraging individuals to challenge long-held assumptions about present environmental policy and to view environmental problems from innovative angles. EIC is the creation of intimate relationships with followers so that leaders may help them acquire pro-environmental

skills; in this case, leaders aid followers in changing and growing in ways that helped them achieve their goals (Zeb Khaskhelly et al. 2022).

## Hypotheses Development

Environmentally Specific Transformational Leadership and Organizational AgilityAgility is the key to maintaining stability in a chaotic external environment. It is the capacity of a system to adapt to fast-changing requirements and other external stimuli while maintaining the quality of its goods and services. Updates and ongoing change are necessary to achieve this goal because they enable businesses to replace outdated practices with more modern ones and to rethink organizational structures in light of shifting conditions.

Meanwhile, organizational agility (OA) is defined as "a company's ability to notice unexpected changes in its environment and adjust rapidly and effectively by leveraging and rearranging internal resources, resulting in a competitive advantage". To satisfy value commitments and improve flexibility to adapt to changing settings, agile institutions should prioritise the depiction, usage, and evolution of knowledge structure content and structure. Which can help its survival and performance.

Transformational leadership has a direct and positive relationship to organizational agility, according to (Yumei Hou 2020), as managers favour assisting their staff by encouraging and inspiring them to find innovative solutions to difficulties while keeping in mind and taking advantage of external changes helping them grow resilient and survive while making better choices. When viewed as green leader, they may be more motivated to solve environmental challenges, which is a critical foundation for innovative capabilities and help increase allover environmental level agility within an organization (Khokhar, Zia, et al. 2022).

Environmentally specific leaders will exhibit and conduct actions that will assist employees learn and be able to deal with obstacles, resulting in a more adaptable and flexible environment and an overall agile and flexible business. Keeping the above idea in

mind, we present a hypothesis based on environmentally specialized leadership guiding its company to a more agile state, resulting in organizational-wide agility.

**H1:** There is agility in textile manufacturing firms operating in Karachi.

### **Environmentally Specific Transformational Leadership and Green Human Resource Management**

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GHRM policies, procedures, and systems encourage employees to practice environmental stewardship, which benefits the community, the environment, and the enterprise (Ren et al. 2018). By developing a pro-environmental microclimate, GHRM encourages workers to do ecologically beneficial acts (Saeed et al. 2019). The adoption of GHRM indicates that a corporation recognizes its social responsibility to save the environment. This allows it to cultivate a favourable image and public impression within the organizational environment and culture (Pham et al. 2020). Leaders must generate an original vision, have true belief in that vision, and successfully convey it to others so that others may have faith in and be enthusiastic about leaders' ideas in the future since transformational leaders are vision oriented it is important for ESTL to have their vision and goal (Zhu, Chew, & Spangler, 2005).

According to Zhu et al., transformational leaders inspire greater levels of inspiration, trust, attachment, accountability, and execution (2005). According to the findings, the intellectual inspiration of a transformational leader has a positive impact on staff competency performance and talent management (Khokhar, Hou, et al. 2020). Like any leader, the organization's leadership affects the effectiveness of green HRM practices. For businesses seeking to project a positive image of the environment, inspire positive ideas, and effect behavioural change, motivating employees to engage in green behaviours through leaders is essential. Zhao, W., and Huang, L. (2022).

In light of transformational leadership theory, which states that an environmentally concerned transformational leader will initiate the four I's in a green and environmental context, leading to GHRM practices that are more environmentally concerned than general HRM strategies, it is proposed that a leader can guide its organization however they want, and if they choose to take initiatives as an environmentally specific transformational leader promoting green ideas and GHRM, then the organization will be more environmentally concerned than if they did not.

**H2:** There is an impact on textile manufacturing firms operating in Karachi.

### **Organizational Agility**

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The capacity of a company/firm to anticipate, perceive, and respond to market volatility in ways that produce competitive advantage is referred to as organizational agility. More particularly, in today's frequently unpredictable markets, agility may be stated to be a surprisingly dominant instrument for all types and scopes of organizations seeking organizational competitiveness and distinguishing themselves to survive unconventional environments (Hossain et al. 2023).

These days corporate environments are extremely unsteady, posing serious difficulties. It is important to emphasize that HR must dramatically restructure itself in order to compete in a quickly changing environment. This makes the function a crucial driver of agility. In this capacity, HR will allow a new kind of organization, one built on a highly adaptable and responsive workforce. According to the research on HR drivers conducted by "Accenture Company's Strategy," an agile business may be simply described as a manifestation of organizational flexibility, organizational speed, and its execution.

The term "green HR management" (GHRM) refers to anything that has to do with raising awareness, embracing, and putting into practice HR practices that influence sustainability. Considering corporate



sustainability criteria that can help an organization become green through these practices, GHRM encompasses all actions. Recently, the idea of human resource management (HRM) has drawn a lot of attention as a managerial function in the literature on environmental management, which has contributed to its popularity. The combination of human resource management.

Since human resources are an organization's most asset and there is an urgent need for businesses to incorporate into their GHRM crucial used for the adoption and practices and Ren and colleagues (2018) the suggested hypothesis will evaluate the association between GHRM and OA using existing research that indicates that HRM has a relationship with OA.

**H3:** There is an impact of human green resource management on organizational agility in textile manufacturing firms operating in Karachi.

### **Organizational Agility and Firm Environmental Performance**

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Organizational flexibility may help businesses swiftly alter their organizational structures, reallocate resources, and respond to market changes, resulting in new strategies and adaptability. It is therefore a high-level competence that is backed by and made possible by the resources that form its foundation (Khokhar, Iqbal, et al. [2020](#)). As a consequence, the firm implements it since it is crucial to a business' capacity to thrive and expand in a chaotic environment.

Even though organizational agility capability has already been identified as an important factor determining companies' competitive advantages, alongside strategic directivity, empirical studies on how companies' environmental factors contribute to the development of agility ability and performance are limited (Hailiang et al. [2023](#)).

Agility has been seen to give firms with dynamic capacity, flexibility, and creativity to successfully plan, organize, and manage their business sustainability goals through social, economic, and environmental perspectives

(Begum Siddiqui et al. [2023](#)) The literature explains how organizational agility improves firm performance at overall levels. We propose that based on existing literature we can expect that when an organization becomes agile and has green initiatives within the organization it can increase firm environmental performance.

**H4:** There is an impact of organizational agility on firm environmental performance in textile manufacturing firms operating in Karachi.

### **Mediating Effect of Organizational Agility between GHRM and Firm Environmental Performance**

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People are more likely to have a positive opinion of businesses that employ GHRM because they see them as being environmentally conscious. Associating with well-known environmental groups is likely to boost people's self-esteem, making them more likely to be drawn to such organizations. Additionally, employees want to be a part of these organizations since they are more interwoven with their employees' growth. Instead, a better company reputation is more likely to support OA since job candidates want to work for organizations with such a stellar reputation because it will help them feel more confident. A survey by HOU et al. ([2021](#)) discovered a link between GHRM and the level of applicant attractiveness, providing empirical support for the theory. Promoting the notion of a job where the company gets involved in a worker's career to assist him develop and be better able to handle unforeseen circumstances (Khokhar, Devi, et al. [2022](#)).

Firm environmental performance refers to company efforts that go beyond basic legal and regulatory compliance, it is important since it is related to corporate social responsibility leading to consumers holding the organization to it. It includes the effects that organizational actions, products, and resource use have on the environment while remaining compliant with legal environmental standards. recruiting incentives, employee empowerment initiatives, and other strategies, GHRM aids businesses in creating a

comprehensive architecture that will improve environmental performance.

**H5:** Organizational agility mediates the effect of GHRM on firm environmental performance in textile manufacturing firms operating in Karachi.

### Serial Mediating Effect of GHRM and OA

This term "firm environmental performance attempts meet surpass social expectations about the environment by going above and beyond simple legal and regulatory compliance (Irshad et al. 2019). 2015. It includes the actions, the user has on the environment while remaining compliant with legal environmental standards (Anon n.d.-a; Chapman et al. 2005; Gully et al. 2013). GHRM assists firms in developing an all-encompassing architecture through environmental incentives, employees, and so on (Hou et al. 2022).

The GHRM has had a good influence on environmental performance as assessed by environmentally friendly performance management, environmental attitude, training, and engagement (Khokhar et al. n.d.). Ultimately, the use of GHRM promotes employees to engage in green behaviour to preserve FEP. Organizations that are interested and sensitive to protecting the environment must always strive for improved conformance between GHRM practices and apply important principles and standards to protect the environment (Mothafar et al. 2022).

In the light of literature previously mentioned it is proposed that when ESTL will initiate green behaviours and policies then GHRM are used within the organization leading to an agile organization in the context of the environment, which will lead to better firm performance.

**H6:** Environmentally specific transformational leadership influences firm environmental performance via green human resource management and organizational agility.

The preceding comprehensive discussion contributes to the conceptual framework depicted in Figure 4. Our conceptual

framework is built on seven hypotheses that will investigate ecologically focused agility, human resource management, and firm environmental performance. This chapter looks at previous literature as well as important theories on key factors to grasp the connectivity between the study variables based on testable hypotheses. A visual research framework shows the points offered in this chapter towards the end. The next chapter discusses a research approach for validating the suggested study framework.

### Methodology

The previous section gave a literature analysis of connected research study objectives based on relevant theories, and for further empirical testing, a research model is defined around the research objectives. The approach of the study will be explained in methodology to test the suggested research model. This chapter will speculate on research techniques in depth, encompassing philosophical assumptions and study design.

### The Positivist Research Philosophy

The thesis hypothesized a link between various variables and their impact on the textile manufacturing industry. Research philosophy is defined as a set of beliefs that governs how data is acquired, examined, and a phenomenon is applied. The research philosophy to be used in the current research is Positivism, in which researchers test the laws against the collected data in a systematic manner. According to Guba and Lincoln (1994), a research paradigm is a core concept that guides research direction and actions. Research philosophy is divided into two basic categories: positivism and interpretative paradigm (Myers, 2013). Positivism is the most often used approach in the social sciences (Neuman, 2011).

The interpretative paradigm is based on the basic principles of a qualitative method in which hypothesis testing is driven by observation, interviews, and case studies (Newman, 2011). Individual subjective experiences are associated with the interpretative paradigm. The interpretative

paradigm refers to relevant approaches depending on the perceived relationship between the researcher and the research participants (Creswell, 2009). The current study seeks to investigate a structural model of Transformational leadership

### **Research Approaches and Quantitative Data Gathering**

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There are two types of research approaches: inductive and deductive. The researcher will employ a deductive approach in this study, forming hypotheses based on available literature and ideas. As the deductive approach will be utilized in this study, existing literature and theories will be evaluated through quantitative data gathering, and findings shall be gauged by hypothesis testing empirically. The inductive method is focused on the proposed theory's observations and discoveries. The observations and discoveries of the suggested theory prompt the deductive method. In the deductive approach, hypotheses are created based on available literature and tested through data gathering and derivation of findings from premises (Ahmed et al. [2022](#)).

Among the many data-gathering procedures, surveys are the most successful. The survey technique is the most accepted, frequent, and sensible way to accurately measure the postulated construct. The survey approach is common and comprehensible, and it quickly explains quantitative data (Saunders, 2007). In this research study, the researcher employed the Survey approach to collect data and obtain information. A self-administered survey is going to be carried out. Textile manufacturing enterprises in Karachi provided survey responses for the study. The survey participants will be handled as unique units of analysis, with each responder deemed to be a separate source for data gathering.

### **Research Population and Sample Size**

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The research population is defined as a group of people, factors, and events employed in a research study. All levels of managers from textile manufacturing enterprises in Karachi active in textile export are the present study's

target group. To generalize the results, the researcher strives to collect data free of biases and partiality from organizations by targeting the correct audience and avoiding adding any items that would create any kind of desirability or acquiescence bias. The purpose of this study is to collect data from employees to assess the environmental performance of textile manufacturing enterprises using green practices.

The sample size for the current study was estimated by calculating the number of textile firms in Karachi and then taking out the percentage of those firms to be selected for data collection, including both genders, with a confidence level of 95% and an error margin of 5%. It is found that a minimum of 384 samples are required to run the model for the dependent variable, Firm Environmental Performance (FEP), which includes Organizational Agility (OA), Environmentally Specific Transformational Leadership (ESTL), and Green Human Resource Management (GHRM).

This study will use a non-probability sample research design because the access to the population is not known. Non-probability purposive sampling technique is a way of delivering optimum answers to challenges and assisting researchers in selecting situations that will allow them to carry out decisions (Saunders, Lewis, Thornhill, & Bristow, 2015). A non-probability purposive sampling approach will be used to achieve the study objectives as well as more accurate and objective results.

### **Measurement of Demographics Variables**

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As a research tool, a self-administered questionnaire is employed. There is one independent variable, two mediating variables, and one dependent variable in a research questionnaire. Organizational Agility (OA), factors and their influence on Environmental Performance. The survey questionnaire was split into two sections. The first section contains demographic information from participants such as company size and age, respondents' gender, qualification, management position, and work

duration. The second section contained items generated from prior research on each variable of interest.

logical and chronological connecting objectives with data. This study is being carried out to obtain answers to research questions by empirically evaluating presented hypotheses related to Karachi that are active in international commerce. The quantitative character of this study will yield more accurate and realistic outcomes.

This study's research methodology employs a non-directional approach to evaluate the presented hypothesis, in which researchers investigate the influence of the ESTL on OA and GHRM and the serially mediated relationship between ESTL and FEP through GHRM and OA as well as control factors like Firm Size and Firm Age.

Primary data is going to be obtained through a self-administered questionnaire consisting of closed-ended questions provided to each respondent via the Internet, postal service, or hand delivery and collected later. To collect data on the target population, a cross-sectional study approach was used.

### **Data Analysis and Research Instrument**

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The research items used for the primary data collection were structured as close-ended questions. Researchers adopted the Likert Scale Techniques: 7 = strongly agree, and 1 = strongly disagree. 40 of the questionnaire, out of which 11 items addressed demographics: whereas 29 items measured the research variables. The construct validity is examined using face, content, discriminant, and convergent validity. Items on the scale were assessed for face and content validity by two topic experts and one field expert. is used Finally, the criteria (1981a) and discriminant validity are tested (HTMT). The English version of the survey questionnaire will be adopted for data collection as all the participants are highly qualified (see Appendix A).

The data examination is going to be in three stages. The descriptive statistics were investigated in the first phase using SPSS v20. The demographic data based on the survey

participants' attributes are displayed in frequency tables. Furthermore, the descriptive statistics of the research variables were reported as range, mean, and standard deviation (SD). IBM SPSS is used for this analysis (v20).

Measurements employed in the study are supplied phase by evaluating Modelling (SEM). First and foremost, inter-item correlations and indicator loadings were discovered. Cronbach's alpha (Satisfaction et al. 2023) was used measures. is then examined using face, content, discriminant, and convergent validity. Items on the scale were assessed for face and content validity by two topic experts and one field expert.

Finally, the criteria (1981a) and discriminant validity are tested (HTMT). Smart PLS The evidence of the (Anon n.d.-b) are utilized in the second phase to perform all tests except inter-item reliability, which was assessed on IBM SPSS v20.

The postulated relationships of the research model are investigated in the third stage by evaluating the structural model of the SEM. Initially, Interco struct correlations and multicollinearity were demonstrated. Following that, conventional structural analysis assessment criteria were utilized to provide Since we aim to collect primary data, we will first obtain their voluntary consent for their participation in this research study. When reaching out to participants it will be ensured that their confidentiality and right to privacy is maintained and their personal information will not be disclosed. The purpose of data collection is solely research, and all the responses will be in aggregate form. There will be no psychological or physical harm caused to the participants and their right to withdraw from the study will always be respected.

### **Results and Discussions**

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The textile industry is a major contributor to Pakistan's economy, due to recent times this study helps us understand what helps the textile industry improve even further than it already has in terms of economic help. The current financial situation indicates that more export volumes can help Pakistan's economy

which can only happen when organizations follow legal rules and increase their sales. This study helps understand how organizations can increase their firm environmental performance and help contribute by creating opportunities for employment to boost the economy by increasing per capita income rates overall to help lower unemployment leading to a strong economy.

Organizational agility helps better equip organizations to deal with unknown changes that might happen and impact the organization. It can help organizations learn to make the unforeseen situation change to their advantage and eventually to their competitive vantage point. Environmentally specific transformational leadership promotes pro-environment ideas amongst employees leading to green HRM practices helping create green organizations leading to increase firm environmental performance so that all the issues Pakistan faced because of environmental degeneration due to pollution and toxic emission can be controlled and, in the end, minimized.

According to recent research on serious environmental challenges. developing powers. Pakistan's manufacturing industry accounts for 13.6 per cent of the country's GDP. (Afsar et al. 2018) Concluded in his research that Individual-level pro-environmental behaviour shapes and is dependent on organizational-level environmental sustainability. Corporate Social Responsibility (CSR) has been advocated as a valuable instrument for improving organizational, social, and environmental performance. Not unexpectedly, several empirical studies have emphasized its significance in achieving favourable macroeconomic results. This research explains the impact of CSR on workers' pro-environmental actions. Furthermore, we accounted for the mediating influence of organizational identity as well as the moderating function of environmentally specific servant leadership.

### Pollution Due to Textile Industry

The report is based on a survey of 298 staff from diverse industrial sectors. The key

findings reveal that perceived CSR also has a direct and indirect impact on pro-environmental behaviour via organizational identity. The findings also provided support for the interaction effect of ecologically focused servant leadership in conjunction with CSR in influencing employee pro-environmental actions. According to (Afsar et al. 2018), Pakistan is the world's fourth-largest cotton grower. The textile industry of the country is the largest manufacturing sector. Furthermore, the textile sector is export-oriented, accounting for 60% of the total country's exports. Furthermore, it is the second largest place of employment in the country.

### The Negative Environmental Result of the Textile Industry

The textile industry is often recognized as being one of the most polluting in the world. Toxic chemicals, high levels of water and energy utilization, the generation of considerable volumes of solid and gaseous waste, enormous fuel usage for supply to isolated places where textile units are situated, and the use of non-biodegradable product outer packaging are all aspects that contribute to the unsustainable life cycles of textiles and apparel.

A large proportion of materials needed in product manufacture are utilized during "wet processing," which comprises dyeing, washing, printing, and fabric finishing. Textile dyeing and finishing mills use a lot of supplementary water up to 200 tons of water for every metric ton of textiles fashioned. Several of the components utilized in manufacture are not toxic, and only a small percentage are potentially hazardous. Nonetheless, because of the enormous variety of chemicals used in textile manufacture, many harmful substances are utilized in actual terms, according to the International Agency for Research on Cancer (IARC). Global brand proprietors, raw material contractors, apparel manufacturers producers, financiers, retailers, and clientele are all important players in the textile and clothing supply chain life cycle inventory (LCI) analysis; therefore,

environmental data, as well as procedure inputs and outputs, must be collected.

## **Conclusion**

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According to United Nations Development Programs, Pakistan has recently suffered significant adversity (UNDP). Pakistan is extremely vulnerable to the consequences of climate change. Pakistan is ranked fifth among countries most susceptible to climate change, according to the World Risk Index 2020. From 1999 to 2018, the nation saw 152 severe weather events, resulting in massive damages of USD 3.8 billion. Human consequences of such disasters, such as extreme weather in Peshawar and Karachi, or suffocating pollution in Lahore, have major health and economic implications. Although Pakistan

contributes less than 1% of global pollution, it creates more pollution within itself, which leads to global warming and natural disasters, eventually resulting in deaths. According to World Health Organization (WHO), data, environmental factors are responsible for around 24% of all fatalities. According to the United Nations Environment Program, textile mills contribute to one-fifth of global industrial water pollution and around 8% of global greenhouse gas emissions (UNEP, 2021). Organizations that understand the importance of firm environmental performance also understand the social compliance values of it in relation to public perception leading to a USP for the organization within the market against its competitors.

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