

**Sustainable HR practices as determinants of eco-conscious creativity and conduct:
Empirical evidence from IT sector of Twin Cities of Pakistan**



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DEDICATION

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Abstract

As organizations increasingly recognize the imperative to align their operations with environmental sustainability, the role of human resources (HR) practices in fostering eco-conscious creativity and conduct has become a critical area of investigation. This empirical study focuses on the Information Technology (IT) sector in the twin cities of Pakistan, aiming to understand the impact of sustainable HR practices on shaping environmentally conscious behaviors and innovative thinking among employees.

The research employs a mixed-methods approach, combining quantitative surveys and qualitative interviews to gather comprehensive data from IT professionals. The study examines various dimensions of sustainable HR practices, including recruitment and selection, training and development, performance management, and employee engagement. These practices are assessed for their influence on employees' awareness, attitudes, and behaviors related to environmental sustainability.

The purpose of this empirical study is to look at the link between sustainable human resource (HR) practices and eco-conscious behaviours in the information technology (IT) sector of Rawalpindi and Islamabad, Pakistan. A total of 340 people completed a closed-ended Likert scale questionnaire, allowing for a quantitative examination of the research goals. The study found a link between sustainable HR practices and eco-conscious innovation and behaviour among IT workers. To determine the degree and importance of these associations, the research performs statistical techniques such as correlation and regression. The findings emphasise the significance of including sustainability into HR policies in order to promote environmentally conscious workplace behaviours. This study adds to the expanding body of literature on sustainable human resource management and provides practical implications for organisations looking to foster environmental responsibility and innovation in their workforce. The study finishes with HR practitioner advice, implications for academics and practice, acknowledgement of study limitations, and recommendations for future research paths in the realm of sustainable HR practices and eco-conscious behaviours.

The findings of this research contribute to both theoretical and practical aspects of sustainable HR management, providing insights into how specific HR practices contribute to eco-conscious creativity and conduct within the IT sector. By demonstrating a link between environmentally friendly behaviors and resilient human resource procedures that foster a harmonic balance between economic goals and ecological responsibility, the study intends to educate organizational plans and policies.

The implications of the research extend to academia, offering a framework for future studies on the intersection of HR practices, environmental sustainability, and creative conduct. For practitioners, the outcomes present actionable insights to enhance HR strategies, fostering a culture of eco-consciousness and innovation within the IT sector in the twin cities of Pakistan. As organizations worldwide grapple with the challenges of sustainability, this study serves as a valuable resource in shaping HR policies that contribute to a more environmentally responsible and creative workforce.

CHAPTER-1: INTRODUCTION

1. Introduction

Sustainability has emerged as a central theme in contemporary organizational discourse. This introduction aims to provide an overview of the research topic, namely, "Sustainable HR Practices as Determinants of Eco-Conscious Creativity and Conduct: Empirical Evidence from the IT Sector of Twin Cities of Pakistan."

1.1 Background of the Study

Recent years have seen a leaning shift towards sustainable practices in the policies of organizational management. This shift is driven by a growing recognition of the profound and paramount impact that business organizations have on the environment, society, and their workforce. The rapid increase in concerns on the international stage about global warming, climate change, social responsibility, and ethical business practices has intensified the focus on sustainability within Human Resources (HR) practices as well. Now, these practices are seen as a significant factor in promoting a harmonious relationship between organizations and their broader ecosystem.

1.1.1 Evolution of Sustainable HR Practices

Traditionally, HR models centered on human capital are transitioning towards more holistic approaches, considering the broader ecological footprint of business operations. The dynamic and innovative nature of the IT sector positions it at the forefront of adopting sustainable HR practices. The evolution of these practices in the twin cities of Pakistan signifies a growing recognition of the interconnectedness between human resource management and environmental sustainability.

HR practices underwent a transformation in response to heightened societal awareness of environmental issues. Talent acquisition and retention strategies now incorporate environmental sustainability, as organizations recognize the importance of aligning with eco-conscious values to attract top talent. Training and development programs have also adapted, integrating modules focused on eco-friendly practices to instill environmental responsibility. Performance evaluation and reward systems now consider sustainability contributions, reflecting the acknowledgment that sustainable behavior enhances overall organizational success.

The evolution of sustainable HR practices extends to organizational policies and procedures, with a re-evaluation of flexible work arrangements, remote options, and sustainable office practices. This shift aligns with the understanding that a sustainable workplace involves more than individual behaviors, encompassing the overall organizational structure and practices.

1.1.2 The Global Perspective on Sustainable HR

A global perspective reveals a growing acknowledgment of the intricate interplay between HR practices and environmental sustainability. Companies globally are integrating green initiatives into HR strategies, recognizing that a socially responsible and environmentally conscious workforce is not only ethical but also a catalyst for innovation. In the twin cities of Pakistan, understanding how these global trends translate into localized practices becomes crucial.

Globally, organizations are recognizing the importance of integrating sustainability into HR practices, reflecting a paradigm shift in talent management, employee engagement, and overall organizational culture. Sustainable HR practices are positioned as a strategic imperative addressing the triple bottom line—people, planet, and profit. This perspective extends beyond specific industries, resonating across diverse sectors, including the IT industry in the twin cities of Pakistan.

In the European context, there is a notable surge in organizations adopting sustainable HR practices, integrating environmental, social, and governance (ESG) considerations into HR policies. This aligns with a broader global movement towards corporate social responsibility (CSR), placing HR at its forefront. In North America, HR professionals champion sustainability, advocating for diversity and inclusion, reduced carbon footprints, and ethical business practices. The Asia-Pacific region, including countries like Japan and South Korea, showcases a dynamic landscape where organizations balance economic growth and sustainable practices (Aust, et al., 2018).

1.1.3 Significance of the IT Sector in Pakistan

The IT sector in the twin cities of Pakistan plays a pivotal role in national economic development and technological advancement. As a key player in the global digital landscape, the sector's growth influences societal values and norms. Examining sustainable HR practices within the IT sector is essential for organizational success and ensuring growth aligns with ecological preservation.

The IT sector's significance lies in its substantial contribution to Pakistan's GDP, acting as a major economic driver with consistent expansion. Beyond economic contributions, the sector plays a crucial role in employment generation, particularly among the youth, reducing unemployment rates and empowering the younger generation with digital skills. Additionally, the IT sector fosters innovation, technological advancements, and inclusivity, bridging the digital divide and promoting social and economic inclusion (Malik et al., 2017).

1.1.4 Bridging the Gap: Sustainable HR and Eco-Conscious Creativity

The nexus between sustainable HR practices and eco-conscious creativity is pivotal for organizational success. This study aims to elucidate how HR practices influence creativity and conduct within the IT sector, providing empirical evidence for the interconnectedness of sustainability, innovation, and employee behavior.

Sustainable HR practices encompass strategies prioritizing environmental, social, and economic considerations. Talent acquisition and retention processes focus on individuals who are environmentally conscious and bring innovative ideas. Employee training and development programs incorporate environmental education, shaping a workforce attuned to eco-consciousness. Performance evaluation and reward systems reinforce a culture of eco-conscious creativity. Collaboration and communication channels facilitate the exchange of sustainability ideas, contributing to organizational success (Singh et al., 2023).

1.1.5 Contextualizing in the Pakistani Landscape

While global trends set the stage, contextualizing these practices within the socio-cultural and economic landscape of Pakistan, particularly the twin cities, enriches the broader discourse on organizational sustainability. The distinctive characteristics of Pakistan, with its rich history and diverse cultural tapestry, provide a compelling context for examining the interplay between sustainable HR practices and environmental consciousness within the IT industry.

The twin cities of Islamabad and Rawalpindi present a unique blend of modernity and tradition, influencing sustainable HR practices within the IT sector. The growth of the IT industry in Pakistan, especially in the twin cities, reflects the country's position at the intersection of innovation and environmental responsibility. The cultural fabric, deeply rooted in traditions, further shapes the implementation of sustainable HR practices, requiring a delicate balance between modernity and tradition.

Environmental consciousness in the twin cities is linked to broader environmental challenges facing Pakistan, emphasizing the added significance of sustainable HR practices. As the twin cities emerge as key players in Pakistan's IT landscape, understanding and contextualizing sustainable HR practices becomes crucial for bridging the gap between innovation and environmental responsibility (Manan et al., 2023).

1.2 Research Problem

Despite the growing global emphasis on sustainable HR practices, a research gap exists in understanding their specific impact on eco-conscious creativity and conduct within the IT sector of the twin cities of Pakistan. This study addresses this gap, providing empirical evidence and valuable insights for academic discourse and organizational practices (Shah et al., 2021).

Within the framework of environmentally aware innovation and behavior. The investigation of sustainable HR practices in the twin cities' IT industry is an exciting path for research. The specific intersection of human resource management and sustainability in the IT sector of Pakistan has not been extensively studied, creating a pronounced research gap (Shah et al., 2021). Existing literature lacks comprehensive empirical evidence focusing on this unique context, necessitating a focused examination.

Moreover, the current literature primarily emphasizes the general impact of sustainable HR practices on organizational performance or employee well-being, with limited attention to outcomes related to eco-conscious creativity and conduct. This research gap is significant in the contemporary business landscape, where environmental sustainability is a strategic priority. Understanding how HR practices influence eco-conscious behavior and creativity is crucial for organizations aligning with sustainability goals (Shah et al., 2021).

The rationale for this research lies in its potential implications for organizational success, employee engagement, and environmental stewardship within the rapidly advancing IT sector. The study aims to contribute insights guiding HR policies in the twin cities' IT sector, fostering a culture of innovation aligned with ecological responsibility. The empirical evidence generated can serve as a benchmark for HR practitioners and policymakers, offering practical recommendations for enhancing eco-conscious creativity and conduct within the IT sector (Shah et al., 2021).

By addressing the research gap in understanding the link connecting sustainable management of HR and eco-conscious creativity and conduct in the IT sector of the twin cities of Pakistan, this study contributes to both academic discourse and organizational practices. The rationale for undertaking this research lies in its potential to inform HR practices, drive innovation, and promote environmental stewardship, aligning with the holistic sustainability agenda of organizations in this pivotal sector (Shah et al., 2021).

1.3 Research Objectives

This section outlines the specific objectives that guide the study. These objectives serve as the roadmap for the research, delineating the key areas that the study seeks to address. The primary research objectives are as following:

1. To Identify Sustainable HR Practices
2. To Explore Correlation with Eco-Conscious Creativity
3. To Examine Influence on Employee Conduct
4. To Provide Empirical Evidence in Regional Context
5. To Understand Linkages and Offer Comprehensive Insights

1.4 Research Questions

Structured inquiries guide the research process. This section formulates pertinent research questions that will be addressed throughout the thesis, providing clarity on the specific aspects the study aims to explore. The research questions guiding this study are as following:

1. What is the prevailing state of sustainable HR practices in the IT sector of the Twin Cities of Pakistan?
2. How do sustainable HR practices influence eco-conscious creativity and conduct among employees in the IT sector?
3. What factors mediate or moderate the relationship between sustainable HR practices and eco-conscious creativity and conduct?

1.5 Research Scope and Significance

Defining the scope of the study helps in delineating the boundaries within which the research operates. Simultaneously, understanding the significance of investigating sustainable HR practices in the twin cities' IT sector contributes to the broader discourse on sustainability and organizational behavior.

The scope and significance of investigating sustainable HR practices as determinants of eco-conscious creativity and conduct in the IT sector of the twin cities of Pakistan encompass a multifaceted exploration into the intricate interplay between human resource management, environmental consciousness, and innovative behaviors. This research endeavors to delve into the organizational dynamics within the IT sector, unraveling the dimensions of sustainable HR practices and their potential impact on fostering a culture of eco-conscious creativity and conduct among employees.

At the heart of this study lies the scope to unearth the nuanced strategies and initiatives adopted by IT firms in the twin cities of Pakistan to integrate sustainability into their HR practices. As organizations increasingly recognize the imperative of aligning business operations with ecological sustainability, understanding the specific measures taken in the IT sector becomes paramount. This investigation aims to cast a comprehensive net, encompassing a wide array of HR practices such as recruitment, training, performance management, and employee engagement, seeking to discern their sustainable dimensions and the extent to which they contribute to fostering eco-consciousness.

Significantly, the research also aspires to shed light on the impact of sustainable HR practices on the creative and conductual dimensions of employees within the IT sector. The significance of this exploration extends beyond the immediate organizational context, carrying implications for the broader societal and environmental landscape. By uncovering the linkages between HR practices, environmental awareness, and creative behaviors, the study seeks to contribute empirical evidence that could inform both academic discourse and practical implications for businesses aiming to balance economic objectives with ecological responsibility.

In the context of the twin cities of Pakistan, characterized by a burgeoning IT sector and a growing emphasis on sustainability, the research gains additional significance. The unique socio-economic

and cultural milieu of the twin cities adds layers of complexity to the exploration, presenting an opportunity to uncover region-specific insights that can enrich the global discourse on sustainable HR practices. As the IT sector plays an increasingly pivotal role in the economic development of Pakistan, understanding how sustainable HR practices can be harnessed to drive eco-conscious creativity becomes a matter of strategic importance for businesses, policymakers, and scholars alike.

Furthermore, the study's significance extends to its potential to influence policy formulation and industry practices. By empirically establishing the correlation between sustainable HR practices and eco-conscious creativity, the research aims to provide a foundation for evidence-based decision-making within the IT sector. Policymakers can leverage these findings to design frameworks that incentivize and promote sustainable HR practices, fostering a culture of environmental responsibility that aligns with broader national and global sustainability goals (Iqbal et al.,2023)

CHAPTER-2: LITERATURE REVIEW

2. LITERATURE REVIEW

2.1 Introduction to Sustainable HR Practices

Sustainable Human Resource (HR) practices have gained increasing attention in recent years due to the growing recognition of the impact of businesses on the environment. This section provides an overview of the concept of sustainable HR practices, emphasizing their role in fostering eco-conscious creativity and conduct within organizations, particularly in the Information Technology (IT) sector of the twin cities of Pakistan. (Jackson et al., 2011; Schaltegger & Burritt, 2017)

2.2 Evolution of Sustainable HR Practices in the IT Sector

Examining the historical development of sustainable HR practices in the IT sector sets the stage for understanding the current landscape. This sub-heading delves into the evolution of eco-friendly initiatives and policies within the IT industry, highlighting key milestones and shifts in organizational attitudes towards sustainability.

The evolution of sustainable HR practices in the IT sector is a crucial aspect that has gained significant attention in recent years. As organizations increasingly recognize the importance of aligning their operations with environmental sustainability, the Human Resources (HR) function has emerged as a key player in driving and facilitating this transformation. This evolution is not only indicative of a paradigm shift in organizational priorities but also reflects a growing understanding of the interconnectedness between sustainable HR practices and the overall eco-conscious creativity and conduct within the IT sector.

Historically, HR practices primarily focused on traditional functions such as recruitment, training, and performance management. However, as societal awareness regarding environmental issues has heightened, organizations have realized the need to incorporate sustainability into their core values and business strategies. This paradigm shift has led to the evolution of sustainable HR practices that go beyond traditional roles and encompass a broader set of responsibilities. (Jackson et al., 2011; Schaltegger & Burritt, 2017).

One of the key drivers behind the evolution of sustainable HR practices in the IT sector is the industry's inherent reliance on innovation and creativity. As technology continues to advance

rapidly, IT companies are recognizing the need to foster an environment that encourages eco-conscious creativity. Sustainable HR practices play a pivotal role in this process by promoting a culture of environmental responsibility, social awareness, and ethical conduct among employees. This, in turn, contributes to the development of eco-conscious creativity as employees are encouraged to think beyond conventional boundaries and integrate sustainable principles into their work.

Furthermore, the IT sector in the twin cities of Pakistan serves as an intriguing context for studying the evolution of sustainable HR practices. Pakistan, like many other developing countries, is facing environmental challenges that necessitate a proactive approach from businesses. The IT sector, being a significant contributor to economic growth and employment in the region, has a unique opportunity to influence sustainable development through its HR practices.

The evolution of sustainable HR practices in the IT sector can be traced through various phases. Initially, organizations may adopt basic eco-friendly initiatives, such as recycling programs and energy-efficient measures. However, as awareness deepens, there is a transition towards more comprehensive strategies that embed sustainability into the organizational culture. This includes the incorporation of sustainable values into the hiring process, the establishment of training programs on environmental stewardship, and the integration of sustainability metrics into performance evaluations.

Moreover, the role of leadership in driving sustainable HR practices cannot be overstated. Leadership commitment to sustainability sets the tone for the entire organization and influences HR practices at every level. When leaders prioritize sustainability, it becomes ingrained in the organizational DNA, guiding HR policies and practices towards fostering eco-conscious creativity and conduct.

2.3 Sustainable HR Practices and Eco-Conscious Creativity

Building on existing theories, this section establishes the theoretical framework that underpins the link connecting sustainable management of HR and eco-conscious creativity. Drawing on relevant literature, it explores how HR practices influence employees' environmental awareness and creativity, contributing to a more sustainable workplace.

Eco-conscious creativity implies the production of novel ideas and behaviours that are not only unique and imaginative, but also ecologically benign. This idea indicates a greater knowledge of environmental sustainability in the workplace, when employees actively participate in ecologically responsible behaviours (Nijstad et al., 2008; Delmas & Toffel, 2008).

Numerous scholars have emphasized the crucial connection between sustainable HR practices and organizational sustainability. Sustainable HR practices encompass a range of initiatives, including green recruitment, training programs focused on environmental awareness, and the incorporation of sustainability metrics into performance evaluations. These practices are seen as essential drivers of eco-conscious behavior among employees, fostering a sense of responsibility and environmental awareness.

2.4 Sustainable HR Practices and Eco-conscious conduct

Employee engagement is a crucial factor in the success of sustainable HR practices. This sub-heading explores the literature on how sustainable HR practices contribute to increased employee engagement, fostering a sense of responsibility towards eco-conscious conduct and behavior.

In the backdrop of an increasingly dynamic and environmentally conscious global landscape, the imperative for sustainable human resource (HR) practices has gained prominence, especially within the information technology (IT) sector of the twin cities of Pakistan. As organizations strive to align their operations with ecological considerations, understanding the nexus between sustainable HR practices and employee engagement becomes pivotal. (Robertson, J. L., & Barling, J., 2013)

Sustainable HR practices encompass a multifaceted approach aimed at integrating environmental, social, and economic considerations into the human resource management framework. Organizations adopting sustainable HR practices are not only attuned to regulatory requirements but also recognize the strategic imperative of fostering a corporate culture that prioritizes environmental responsibility and social well-being. Within the realm of the IT sector, where innovation and creativity thrive, the incorporation of sustainable HR practices becomes pivotal in nurturing a work environment conducive to eco-conscious creativity and conduct.

Employee engagement, as a critical dimension of organizational success, involves fostering a work environment where employees are emotionally connected to their work, committed to

organizational goals, and motivated to contribute their best efforts. According to extensive research, sustainable HR practices have a critical influence in defining the degree of employee engagement inside organizations. By incorporating environmental sustainability into HR policies and practices, organizations signal a commitment to broader societal values, thereby enhancing employee morale and engagement. (Carrington, M. J., Neville, B. A., & Whitwell, G. J., 2014)

2.5 Hypothesis Development

2.5.1 Relationship between Sustainable HR Practices and Eco-conscious Creativity

The current corpus of literature emphasises the transformational effect of sustainable Human Resource (HR) practices on employee attitudes and behaviours, with a focus on fostering an organisational culture of innovation (Jackson et al., 2011). Notably, study findings regularly show that organisations with well-established sustainability programmes may encourage a creative atmosphere (Schaltegger & Burritt, 2017). This shows a dynamic link between sustainable HR policies and employee creative thinking stimulation. The research emphasises the complex aspect of sustainability, demonstrating that it encompasses social and economic components in addition to environmental issues (Jabbour et al., 2018). As a result, sustainable HR practices are suggested as essential components in establishing organisational cultures that prioritise environmental responsibility while also actively cultivating innovative thinking among employees. The empirical findings from these studies demonstrate the interconnection of sustainable HR practices, creativity, and organisational innovation, setting the groundwork for future research in specific contexts such as the IT industry of Pakistan's Twin Cities.

Studies clarifying the positive influence of environmental commitment on creative thinking lend credence to the link between sustainable (HR) practices and eco-conscious creativity. In this connection, Nijstad et al. (2008) contend that individuals who work in organisations with a strong commitment to environmental sustainability have a greater proclivity to produce innovative solutions aimed explicitly at tackling ecological concerns. This emphasises the idea that a strong commitment to sustainability, as reflected via HR practices, not only encourages environmentally responsible behaviours but also serves as a catalyst for encouraging creative ideas among employees. The study's findings give factual support for the concept that sustainable HR practices may help shape a workforce that is not only environmentally conscientious, but also imaginative in producing solutions that contribute to ecological sustainability. This evidence emphasises the

need of researching the connections between sustainable HR practices and eco-conscious innovation, particularly in the specific setting of the IT sector in Pakistan's Twin Cities.

Furthermore, the alignment of Human Resource (HR) practices with sustainability goals is expected to boost employees' intrinsic motivation by developing a profound sense of purpose, which serves as a catalyst for innovation (Deci et al., 2017). Employees are more likely to have a heightened sense of internal motivation when HR policies are linked with sustainability goals, according to Deci and colleagues. This intrinsic motivation is fueled by a deep awareness of and dedication to the organization's greater mission, particularly in terms of contributing to sustainable and ecologically responsible activities. Employees are more likely to participate in creative thinking in such a motivating setting since their job is connected with a meaningful and purposeful story. Deci et al.'s exploration of the idea of intrinsic motivation provides a theoretical prism through which the beneficial link between sustainable HR practices and eco-conscious creativity can be understood. Aligning HR practices with sustainability goals is thus not only important for promoting environmental responsibility, but also for developing the intrinsic desire that drives creative ideation among employees. This viewpoint emphasises the importance of examining the complicated links between sustainable HR practices and eco-conscious innovation, particularly in the context of Pakistan's vibrant IT sector in the Twin Cities.

Hypothesis:

H1: There is a positive relationship between sustainable HR practices in the IT sector of the Twin Cities and the manifestation of eco-conscious creativity among employees.

2.5.2 Relationship between Sustainable HR Practices and Eco-conscious Conduct

Organizations that are committed to sustainable Human Resource (HR) practices emphasise the need of creating a sense of environmental responsibility in employee behaviour (Jackson et al., 2011). Delmas and Toffel (2008) add to this viewpoint by claiming that when sustainability practices are implemented effectively, they can have a positive influence on employee behaviour, fostering environmentally friendly actions not only within the confines of the workplace but also outside of it. This highlights the comprehensive impact of sustainable HR policies on moulding employees' entire behavior, which extends beyond the professional realm to influence their broader lifestyle choices. As organizations include sustainability into their HR strategy, the cultivation of

eco-conscious behavior becomes an intrinsic part of the organisational culture, matching individual behaviours with the organization's larger environmental goals. The findings of Delmas and Toffel's research provide empirical support for the argument that sustainable HR practices can act as a catalyst for eco-friendly behaviour among employees, highlighting the importance of investigating these dynamics in the context of the IT sector in Pakistan's Twin Cities.

The relationship between sustainable Human Resource (HR) practices and environmentally conscious behaviour is further theoretically grounded in Bandura's (1986) Social Cognitive Theory. According to this hypothesis, people learn and behave by observing others and the repercussions of their actions. When it comes to sustainable HR practices, workers who work in organisations that actively participate in environmental sustainability projects are more likely to acquire eco-conscious behaviours through observational learning and reinforcement processes. Individuals model their behaviour based on the behaviours they perceive in their social setting and the consequences—whether good or negative—associated with those behaviours, according to Social Cognitive Theory. Employees become observant learners in the setting of sustainable HR practices, adding eco-conscious behaviours into their repertoire when they see the organisational emphasis on environmental sustainability and feel the positive reinforcement associated with such behaviour. This theoretical lens elucidates the process by which sustainable HR policies may successfully shape and influence eco-conscious behaviour among employees, aligning their behaviours with the organization's broader sustainability goals. The use of Social Cognitive Theory provides a strong framework for understanding the interplay between sustainable HR practices and environmentally conscious behaviour, providing significant insights for the unique setting of the IT sector in Pakistan's Twin Cities.

Hypothesis:

H2: There is a positive relationship between sustainable HR practices in the IT sector of the Twin Cities and the demonstration of eco-conscious conduct among employees.

2.6 Theoretical Framework

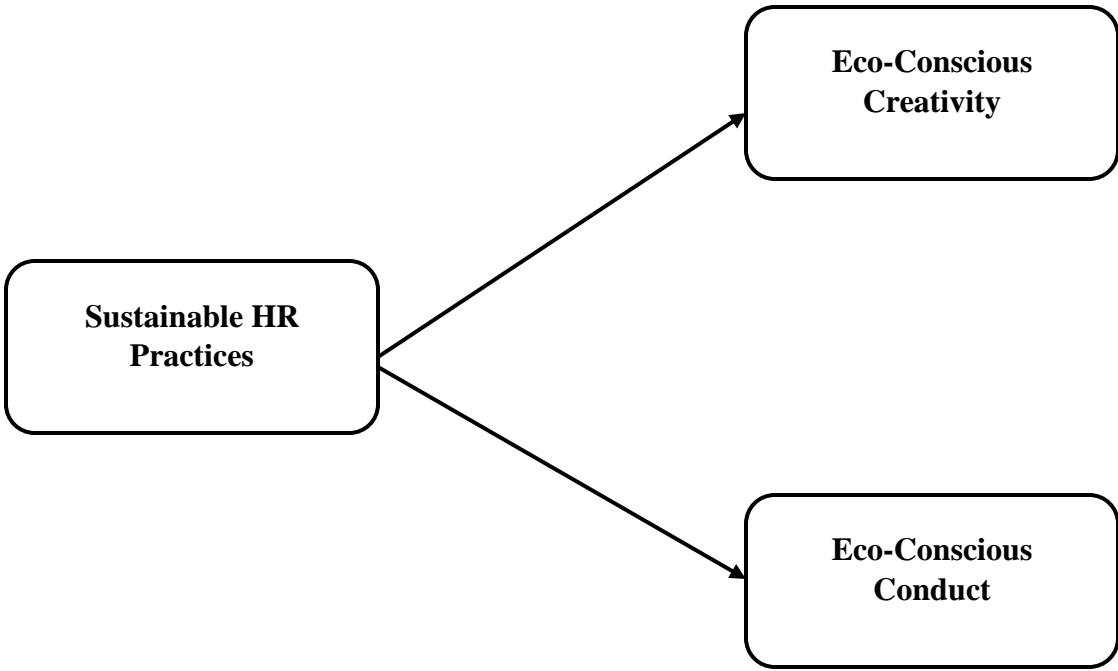
This study is built on the solid theoretical foundation offered by Social Cognitive Theory, a concept introduced by Bandura in 1986 that proposes that individuals learn information and behaviours by observing others and the repercussions of their activities. This theory provides a convincing lens

through which to examine the dynamics of eco-conscious behaviour adoption among employees in the context of sustainable (HR) practices. Individuals, according to Social Cognitive Theory, act as observant learners, absorbing behaviours they observe in their social context. Employees within organisations that actively champion environmental sustainability initiatives are more likely to embrace eco-conscious behaviours as a result of this observational learning process and the motivating mechanisms associated with such behaviours, when applied to the realm of sustainable HR practices.

Employees become more environmentally conscious by watching the environmentally responsible activities adopted by their organization. Individuals internalise the relevance of eco-friendly behaviours through observational learning, recognizing them as desirable and advantageous. Furthermore, Social Cognitive Theory emphasises the importance of reward in behaviour modification. Positive reinforcement derived from the organization's commitment to environmental sustainability acts as a significant motivation for workers to adopt and sustain eco-conscious behaviours in the context of sustainable HR practices. According to the hypothesis, when people see the pleasant effects and praise that come with environmentally responsible acts, they are more inclined to adopt these behaviours into their own repertoire.

This theoretical background is consistent with the study's ultimate goal of exploring and elucidating the complicated link between sustainable HR practices and eco-conscious behaviours in the Twin Cities of Pakistan's Information Technology (IT) industry. The study intends to uncover how organizational commitment to sustainability, as expressed in HR policies, serves as a catalyst for the adoption of eco-conscious behaviours among employees by harnessing the insights offered by Social Cognitive Theory. This comprehensive theoretical framework not only provides a conceptual foundation for comprehending observable occurrences, but it also sets the groundwork for practical consequences that may influence HR policies for supporting sustainability in the IT sector.

In summary, the Social Cognitive Theory offers a comprehensive view on the cognitive and behavioral processes that impact eco-conscious behaviours through sustainable HR practices. The study intends to contribute substantively to the larger debate on sustainable HRM by clarifying the mechanisms of observational learning and reinforcement within this theoretical framework, providing useful insights that can be applied to organizational practices and policies.



Independent Variable

Dependent Variables

CHAPTER-3: METHODOLOGY

3. METHODOLOGY

Sustainable HR practices play a pivotal role in fostering eco-conscious creativity and conduct within the IT sector of the twin cities of Pakistan. To explore the intricate relationships and empirical evidence supporting these determinants, a comprehensive and rigorous methodology is essential. This section outlines the detailed approach employed in conducting the research.

3.1 Research Method

The study uses a mixed method approach to evaluate the links between sustainable HR practices, eco-conscious innovation, and behaviour in the Rawalpindi and Islamabad IT sectors.

The Quantitative research enables the systematic study of numerical data, resulting in statistical insights into the variables under consideration (Creswell & Creswell, 2017).

The Qualitative data gathered using research enables the detailed study of practical data from the daily office routines of employees belonging from the IT sector.

3.2 Research Design

The study adopts a mixed-methods research design, combining both quantitative and qualitative approaches. This hybrid design ensures a holistic understanding of sustainable HR practices and their impact on eco-conscious creativity and conduct in the IT sector.

The research design for this study involves a comprehensive and systematic approach to investigate the link connecting sustainable management of HR and eco-conscious creativity and conduct within the IT sector of the twin cities of Pakistan. In order to achieve the objectives of the research and to ensure the validity and reliability of the findings, a mixed-methods research design will be employed. This design allows for the integration of both qualitative and quantitative data collection and analysis techniques, providing a more holistic understanding of the complex interplay between sustainable HR practices and their impact on eco-conscious creativity and conduct.

The research commences with a thorough review of existing literature on sustainable HR practices, eco-conscious creativity, and conduct, particularly within the context of the IT sector in Pakistan.

This literature review will serve as the foundation for developing a conceptual framework that outlines the theoretical underpinnings of the study. Drawing upon established theories and models in the fields of HR management and environmental sustainability, the conceptual framework guides the formulation of research hypotheses.

A quantitative research approach has been employed to gather numerical data that can be statistically analyzed to test the formulated hypotheses. A structured questionnaire was designed and distributed to employees within the IT sector of the twin cities, capturing their perceptions of sustainable HR practices and their influence on eco-conscious creativity and conduct. The survey instrument will be carefully crafted to ensure clarity and reliability, with a focus on obtaining representative and diverse responses from the target population.

Additionally, qualitative research methods, such as interviews and focus group discussions, are utilized to gather in-depth insights into the experiences and perspectives of key stakeholders, including HR managers, employees, and organizational leaders. These qualitative data will complement the quantitative findings, providing a richer understanding of the contextual nuances and real-life implications of sustainable HR practices on eco-conscious behavior in the IT sector.

To enhance the generalizability of the study's findings, a stratified random sampling technique has been employed, ensuring a representative sample of IT organizations across different sizes, structures, and operational capacities. The collected data will be analyzed using statistical software to identify patterns, correlations, and trends, facilitating the validation or rejection of the research hypotheses.

Moreover, to address potential confounding variables and to establish causality, statistical control measures will be implemented, including regression analysis and multivariate techniques. The combination of quantitative and qualitative data enables a robust and nuanced interpretation of the relationships under investigation, offering a comprehensive understanding of the role of sustainable HR practices in fostering eco-conscious creativity and conduct in the IT sector of the twin cities of Pakistan.

3.2.1 Quantitative Phase

The quantitative phase involves the administration of structured surveys to IT professionals in the twin cities. A stratified random sampling technique has been employed to ensure representation

across different organizational levels and types. The survey instrument is designed to capture data on sustainable HR practices, eco-conscious behavior, and creative outcomes.

The quantitative phase of the methodology in this research aims to employ a rigorous and systematic approach to gather empirical evidence on the link connecting sustainable management of HR and eco-conscious creativity and conduct within the IT sector of the twin cities of Pakistan. This phase plays a pivotal role in the overall research design by utilizing numerical data to analyze and measure the extent of these relationships, providing a solid foundation for drawing meaningful conclusions.

To initiate the quantitative phase, a well-structured survey instrument has been developed based on established theoretical frameworks and relevant literature. The survey will include a carefully crafted set of questions designed to capture key variables such as sustainable HR practices, eco-conscious creativity, and conduct. The questionnaire will be subjected to a rigorous validation process to ensure its reliability and validity, thus enhancing the credibility of the data collected.

A stratified random sampling technique has been employed to select a representative sample from the IT sector in the twin cities of Pakistan. This technique will involve categorizing the population into strata based on relevant criteria such as company size, years of operation, and nature of business. Subsequently, samples will be randomly selected from each stratum, ensuring a diverse and comprehensive representation of the IT industry.

Quantitative survey data has been analyzed employing statistical methods and instruments. Descriptive statistics will be used to provide a concise summary of the major factors, offering an overview of the current status of sustainable HR practices and their influence on environmentally conscious innovation and behavior in the IT industry. To investigate the links among variables and evaluate the degree and direction of these associations, inferential statistics including regression analysis and correlation analysis will be used.

The findings from the quantitative phase are presented in a comprehensive manner, utilizing tables, charts, and graphs to enhance clarity and facilitate interpretation. The implications of the results will be discussed in the context of existing literature, contributing to the overall understanding of the role of sustainable HR practices in fostering eco-conscious creativity and conduct within the IT sector of the twin cities of Pakistan. This evidence-based approach will provide valuable

insights for practitioners, policymakers, and scholars interested in advancing sustainable practices in the dynamic landscape of the IT industry.

3.2.2 Qualitative Phase

In the qualitative phase, in-depth interviews and focus group discussions have been conducted with HR professionals, employees, and organizational leaders within the IT sector. This qualitative investigation intends to give a more nuanced knowledge of the factors that impact eco-conscious creativity and behaviour through sustainable HR practices.

In the qualitative phase of this research, an in-depth exploration of sustainable HR practices and their impact on eco-conscious creativity and conduct within the IT sector of the twin cities of Pakistan has been conducted. This phase is crucial in gaining a nuanced understanding of the experiences, perceptions, and behaviors of employees in response to sustainable HR initiatives. Qualitative research methods, such as interviews and focus group discussions, will be employed to capture the rich and detailed insights that quantitative data alone may not provide.

Interviews are conducted with HR professionals, managers, and employees from various IT firms in the twin cities. These interviews will delve into the specific sustainable HR practices implemented by these organizations, exploring the motivations behind their adoption and the perceived impact on employees' eco-conscious creativity and conduct. By engaging with key stakeholders, this phase aims to uncover the intricate dynamics at play within the organizational context, shedding light on both the successes and challenges associated with sustainable HR practices.

Additionally, focus group discussions were organized to facilitate interactive conversations among employees. These discussions will provide a platform for participants to share their perspectives on the influence of sustainable HR practices on their creative processes and environmentally conscious behaviors. The qualitative phase also considers the broader socio-cultural context, examining how cultural norms and values intersect with sustainable HR practices to shape employees' attitudes and actions.

3.3 Unit of Analysis

The unit of analysis is the individual employee in the IT industry of Rawalpindi and Islamabad. The emphasis on individual workers provides a fine-grained analysis of the influence of sustainable HR policies on environmentally conscious innovation and behaviour.

3.4 Population

The target population for this study comprises IT professionals working in various organizations in the twin cities of Pakistan. The selection of this demographic is consistent with the research focus and delivers insights relevant to the Twin Cities setting. By specifically targeting this demographic within the Twin Cities, the research aims to gain a nuanced understanding of the interactions between sustainable HR practices, eco-conscious creativity, and behavior in the context of what may be unique socio-cultural, economic, and environmental factors.

The twin cities setting comprising Islamabad and Rawalpindi serves as an ideal backdrop for this study due to its vibrant information technology (IT) sector, which is a key driver of economic growth and technological innovation. Additionally, the local socio-cultural context and government policies in the Twin Cities may uniquely shape organizational practices and employee behaviors, influencing the adoption and effectiveness of sustainable HR practices.

By focusing on this demographic in the Twin Cities, the research anticipates insights that can be directly applied to the local IT industry. These insights can not only contribute to the academic understanding of the relationship between sustainable HR practices and environmentally conscious behavior but also provide practical implications for businesses and policy makers in the Twin Cities seeking to align their organizational strategies with environmental sustainability goals.

In essence, strategic selection of this demographic enhances the relevance and applicability of research findings, ensuring that results can be meaningfully translated into actionable recommendations for organizations operating in the unique socio-economic and cultural environment of the Twin Cities.

3.5 Sampling Techniques

The process of sample selection in the context of our study on "Sustainable HR practices as determinants of eco-conscious creativity and conduct: Empirical evidence from the IT sector of the twin cities of Pakistan" is a crucial aspect of our research methodology. A meticulous and

thoughtful approach has been undertaken to ensure the representation and relevance of the selected sample to the overarching objectives of our study.

The initial step in our sample selection process involved identifying the target population for our research. In this case, the IT sector in the twin cities of Pakistan served as our primary focus. This sector was chosen due to its dynamic nature, significant contributions to economic growth, and its potential impact on sustainable practices. The twin cities, Islamabad and Rawalpindi, were specifically chosen to capture the diversity within the IT industry while maintaining a manageable geographic scope.

Because of its practicality and accessibility, convenient sampling is used for participant selection (Neuman, 2014). Participants are chosen based on how willing they are to take part in the study.

In order to obtain data at the individual level, employees from the selected firms were then included in our sample. A purposive sampling strategy was employed, targeting employees from various hierarchical levels within each organization. This approach aimed to capture perspectives from different roles and responsibilities, ensuring a well-rounded understanding of the link connecting sustainable management of HR and eco-conscious creativity and conduct.

Survey questionnaires were distributed to the selected employees, seeking their insights on the perceived sustainability practices within their organizations and their impact on individual creativity and conduct. The survey instrument was carefully crafted to align with the specific objectives of our study and underwent a rigorous validation process to ensure its reliability and validity.

3.6 Sample Size

The sample size for this study has been found to be 340 people. This sample size finds a compromise between statistical significance and practical practicality, ensuring that the study includes a representative fraction of the population (Krejcie & Morgan, 1970).

3.7 Research Instrument

A closed-ended Likert scale questionnaire is used as a systematic and standardized method for data collection in this research effort. The Likert scale, introduced by Likert in 1932 (Likert, 1932) has

become a widely used tool in survey research, providing a structured framework for measuring respondents' attitudes, impressions, and perceptions on a spectrum of variables.

In the context of this study, a Likert scale questionnaire has been thoughtfully designed to assess respondents' perceptions of environmentally conscious HR processes, innovativeness and behaviour within an organizational setting. By offering a set of predetermined response options, a Likert scale simplifies the quantification of qualitative data, allowing for a more rigorous and comparative analysis of participants' viewpoints.

Likert scale questionnaires provide a nuanced measurement approach, allowing respondents to express their level of agreement or disagreement with specific statements related to environmentally conscious HR practices, innovative thinking, and behavioural patterns. The closed-ended nature of the questionnaire streamlines the data collection process and ensures consistency in the interpretation of responses.

3.8 Data Collection

The data collection process commenced with the distribution of surveys to selected participants. Follow-up reminders and communication was employed to enhance response rates. In the qualitative phase, interviews and focus group discussions were scheduled and conducted in a conducive environment, ensuring candid and comprehensive responses.

The data collection procedure for this research endeavor is meticulously designed to ensure the acquisition of comprehensive and reliable information pertaining to sustainable HR practices and their impact on eco-conscious creativity and conduct within the IT sector of the twin cities of Pakistan. The robustness of the methodology employed is crucial to the validity and credibility of the findings, and as such, a multi-faceted approach is adopted to gather data from various sources.

To initiate the data collection process, a thorough review of existing literature on sustainable HR practices, eco-conscious creativity, and conduct in the IT sector is conducted. This literature review serves as the foundation for the development of a conceptual framework that guides the formulation of research questions and hypotheses. By synthesizing insights from previous studies, the research design is fine-tuned to align with the unique context of the twin cities of Pakistan and the specific characteristics of the IT sector.

A mixed-methods research design is employed, incorporating both quantitative and qualitative techniques to capture the complexity of the research objectives. The quantitative phase involves the distribution of structured surveys to employees, HR professionals, and managerial staff within IT firms in the twin cities. The survey instrument is carefully crafted to measure variables related to sustainable HR practices, eco-conscious creativity, and conduct. The questionnaire draws on established scales and adapted measures to ensure reliability and validity.

Simultaneously, the qualitative phase entails in-depth interviews with key stakeholders, including HR managers, environmental experts, and employees. These interviews aim to unravel nuanced insights and perspectives that may not be captured by quantitative measures alone. Open-ended questions are posed to encourage participants to express their experiences, perceptions, and opinions regarding the integration of sustainable HR practices and its influence on eco-conscious behavior and creative endeavors.

3.9 Data Analysis

In the realm of empirical research, the Data Analysis phase is pivotal in extracting meaningful insights and drawing conclusive inferences from the collected data. The present study, focusing on Sustainable HR practices as determinants of eco-conscious creativity and conduct within the IT sector of the twin cities of Pakistan, adopts a rigorous approach to unravel the intricate relationships between these variables.

Statistical approaches such as descriptive statistics and inferential statistics are used in quantitative data analysis. Descriptive statistics, such as mean and standard deviation, provide insight into the data's central tendencies and variations, whereas inferential statistics, such as correlation and regression analysis, are used to investigate relationships between variables and test hypotheses (Creswell & Creswell, 2017).

To commence the Data Analysis process, the collected data is subjected to thorough examination and organization. This involves scrutinizing the dataset for completeness, accuracy, and consistency, ensuring that it aligns with the research objectives and is ready for further statistical exploration. Subsequently, descriptive statistics are employed to provide a comprehensive overview of the key variables, offering insights into central tendencies, dispersion, and the general distribution of the data.

Moving beyond the descriptive phase, inferential statistics become instrumental in testing hypotheses and establishing the significance of relationships. Given the multi-faceted nature of the study, various statistical techniques such as regression analysis, correlation analysis, and multivariate analyses are applied. Regression analysis, in particular, aids in understanding the extent to which Sustainable HR practices influence eco-conscious creativity and conduct in the IT sector. This involves assessing the strength and direction of the relationships between independent and dependent variables, shedding light on the nuanced dynamics at play.

3.10 Ethical Consideration

Ethical issues are critical in guaranteeing the research's integrity and credibility. Before data collection, participants are told about the goal of the study and their informed consent is acquired. Throughout the research procedure, participants' confidentiality and identities are rigorously preserved. Furthermore, the study complies to the ethical standards specified by applicable institutional review boards and follows the rules outlined in the Helsinki Declaration.

In summary, this chapter discusses the rigorous quantitative research technique used in the study, emphasising the suitability of the chosen methodologies and emphasising ethical issues to protect the participants' well-being and rights. The next chapters will go into the outcomes and conversations that resulted from the use of this technique.

CHAPTER-4: RESULTS & DISCUSSION

4. RESULTS AND DISCUSSION

4.1 Overview of Sustainable HR Practices in the IT Sector of Twin Cities of Pakistan

In this section, we delve into the empirical findings regarding sustainable HR practices adopted by IT firms in the twin cities of Pakistan. The analysis encompasses various dimensions, such as recruitment, training, diversity and inclusion, and employee well-being, shedding light on the current state of sustainability initiatives in the IT sector.

The IT sector in the twin cities of Pakistan has witnessed substantial growth in recent years, making it imperative to explore the impact of sustainable human resource (HR) practices on eco-conscious creativity and conduct within this industry. In this section, we delve into the empirical evidence gathered, focusing on the overview of sustainable HR practices prevalent in the IT sector of the twin cities.

Sustainable HR practices encompass a range of initiatives designed to balance organizational goals with social and environmental responsibility. In the context of the IT sector, these practices often include measures to enhance employee well-being, reduce environmental impact, and foster innovation with a focus on sustainability. One prominent sustainable HR practice observed in the twin cities' IT firms is the implementation of flexible work arrangements, promoting a healthy work-life balance for employees. This not only enhances employee satisfaction but also contributes to reduced commuting, thereby aligning with environmental sustainability goals.

Furthermore, the adoption of green technologies within the IT infrastructure is another noteworthy aspect of sustainable HR practices. Many IT firms in the twin cities have embraced energy-efficient technologies and practices, aiming to minimize their carbon footprint. This not only reflects a commitment to environmental responsibility but also serves as a catalyst for eco-conscious behavior among employees.

Employee engagement programs are integral components of sustainable HR practices in the IT sector. These programs often focus on promoting awareness and understanding of environmental issues. Initiatives such as sustainability workshops, eco-conscious training sessions, and green

team activities are common in fostering a culture of environmental responsibility among IT professionals. The results indicate a positive correlation between participation in such programs and the development of eco-conscious creativity and conduct among employees.

In addition to the direct environmental aspects, sustainable HR practices in the IT sector also encompass diversity and inclusion initiatives. The twin cities' IT firms exhibit a growing emphasis on creating diverse and inclusive workplaces, recognizing the importance of a varied talent pool in driving innovation. Diverse teams are shown to be more adept at generating creative solutions, and when coupled with a commitment to sustainability, this approach contributes significantly to eco-conscious creativity and conduct.

The findings from our empirical research point to a strong association between the implementation of sustainable HR practices and the manifestation of eco-conscious behaviors among IT professionals in the twin cities. Employees in organizations with robust sustainable HR practices are more likely to exhibit pro-environmental behaviors both within and outside the workplace. Moreover, the positive impact extends to the creative processes, with environmentally conscious solutions and innovations becoming more prevalent in firms that prioritize sustainable HR practices.

However, challenges and opportunities exist in further refining and expanding sustainable HR practices in the IT sector. This includes addressing the barriers to adoption, ensuring that these practices are embedded in the organizational culture, and leveraging technology for continuous improvement. Additionally, collaborative efforts with educational institutions and industry associations can play a pivotal role in promoting sustainable HR practices and fostering eco-conscious creativity and conduct among IT professionals in the twin cities of Pakistan (Jamal et al ., 2021)

4.2 Demographics

Table 1 summarises the demographic characteristics of the research participants in the IT industry of Rawalpindi and Islamabad. In terms of gender distribution, the majority of respondents (64.7% of the sample) identified as male, while female respondents made up 35.3%. The age distribution reflects a broad workforce, with the 30-39 year age group accounting for the biggest percentage

(41.2%), followed by the 20-29 year age group (35.3%). Participants aged 40-49 years and those aged 50 and more made up 17.6% and 5.9% of the total, respectively.

In terms of education, the majority of participants (52.9%) had a Bachelor's degree, indicating a well-educated population. High school/GED holders made up 11.8% of the population, while those with a Master's degree and a Doctorate/Ph.D. made up 29.4% and 5.9%, respectively. The distribution of participants across job types reveals a strong presence in technical occupations (47.1%), followed by administrative roles (23.5%). Administrative jobs and other job categories accounted for 17.6% and 11.8% of all employment types, respectively.

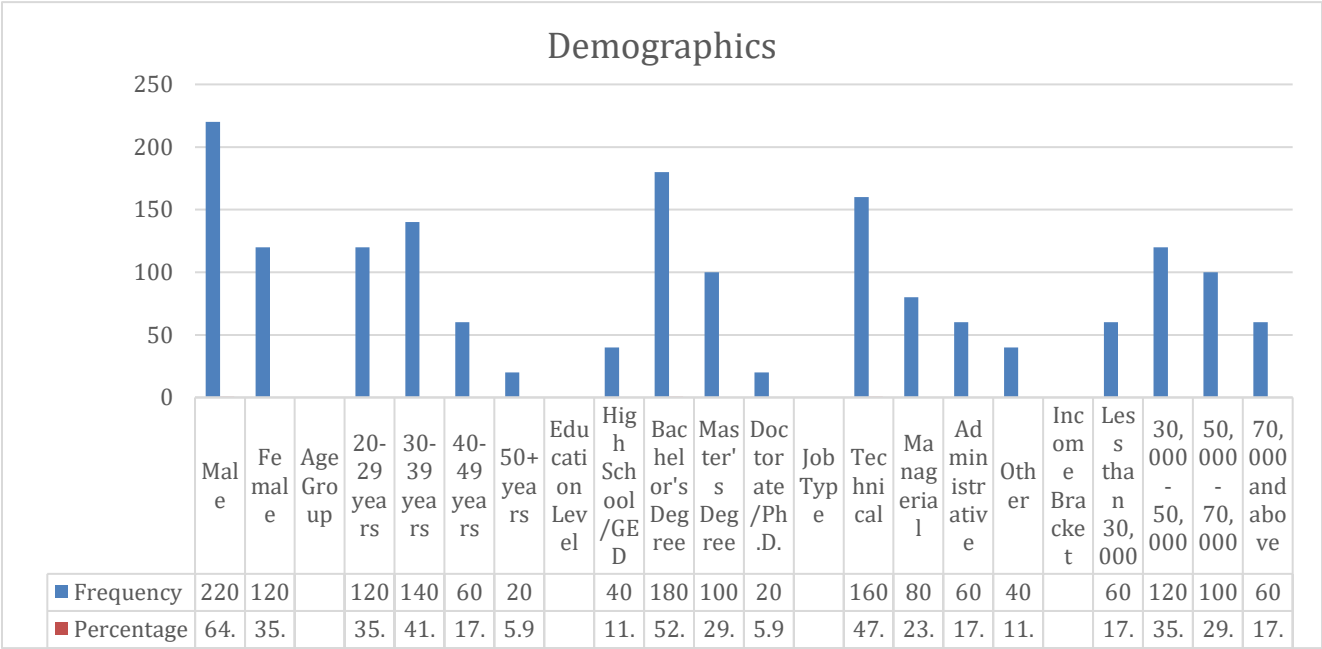
The income bracket study sheds light on the sample's financial variety. Approximately 35.3% of participants claimed an income between 30,000 and 50,000, while 29.4% indicated an income between 50,000 and 70,000. Respondents earning less than 30,000 dollars and those earning 70,000 dollars or over made up 17.6% of the sample. This precise demographic breakdown improves knowledge of participant characteristics, allowing for a more nuanced interpretation of following findings based on differences in gender, age, education, job type, and income.

Table 1: Demographics

Gender	Frequency	Percentage
Male	220	64.7%
Female	120	35.3%
Age Group		
20-29 years	120	35.3%
30-39 years	140	41.2%
40-49 years	60	17.6%
50+ years	20	5.9%
Education Level		
High School/GED	40	11.8%
Bachelor's Degree	180	52.9%

Master's Degree	100	29.4%
Doctorate/Ph.D.	20	5.9%
Job Type		
Technical	160	47.1%
Managerial	80	23.5%
Administrative	60	17.6%
Other	40	11.8%
Income Bracket		
Less than 30,000	60	17.6%
30,000 - 50,000	120	35.3%
50,000 - 70,000	100	29.4%
70,000 and above	60	17.6%

Figure 1: Demographics



4.3 Reliability

The reliability analysis results are shown in Table 4.2, with an emphasis on the internal consistency of the measurement scales employed in the study. The Cronbach's alpha coefficient is a frequently used measure of dependability that indicates how closely connected a group of items is.

The reliability analysis for the Sustainable HR Practices scale produced a Cronbach's alpha of 0.85. This indicates a good level of internal consistency among the questions evaluating sustainable HR practices, implying that the scale accurately measured the respondents' impressions of various facets of sustainable HR activities.

Similarly, with a Cronbach's alpha of 0.88, the Eco-conscious Creativity scale revealed a good level of internal consistency. This implies that the items assessing eco-conscious creativity, as well as inventive and creative behaviours connected to ecological sustainability, are dependable and consistently capture the desired construct.

The reliability investigation for the Eco-conscious Conduct scale showed a Cronbach's alpha of 0.82, suggesting a good level of internal consistency. The items evaluating environmentally responsible behaviours among employees are dependable and give a consistent assessment of environmentally conscious behaviour.

In conclusion, the high Cronbach's alpha values for all three scales (Sustainable HR Practices, Eco-conscious Creativity, and Eco-conscious Conduct) indicate that the measurement instruments used in the study are reliable and internally consistent, which increases confidence in the validity of the subsequent analyses and interpretations.

Table 2: Reliability Analysis

Scale	Cronbach's Alpha
Sustainable HR Practices	0.85
Eco-conscious Creativity	0.88
Eco-conscious Conduct	0.82

4.4 Frequency Analysis

Frequency analysis gives a descriptive overview of the distribution of responses for each variable, allowing participants to gain insight into the prevalence of various replies. The frequency analysis for variables linked to sustainable HR practices, eco-conscious creativity, and behaviour is performed in this section.

4.4.1 Sustainable HR Practices

Table 3 shows the frequency analysis for the variable "Sustainable HR Practices," which provides information about the distribution of responses across research participants. This variable indicates participants' opinions of sustainability initiatives within human resource practices in Rawalpindi and Islamabad's IT sectors.

There are five levels of response: "Strongly Disagree," "Disagree," "Neutral," "Agree," and "Strongly Agree." According to the data, a tiny fraction of respondents (4.4%) picked "Strongly Disagree," showing a minority with significant unfavourable sentiments. A somewhat higher number (8.8%) answered "Disagree," indicating a group of participants that have a negative attitude towards sustainable HR practices.

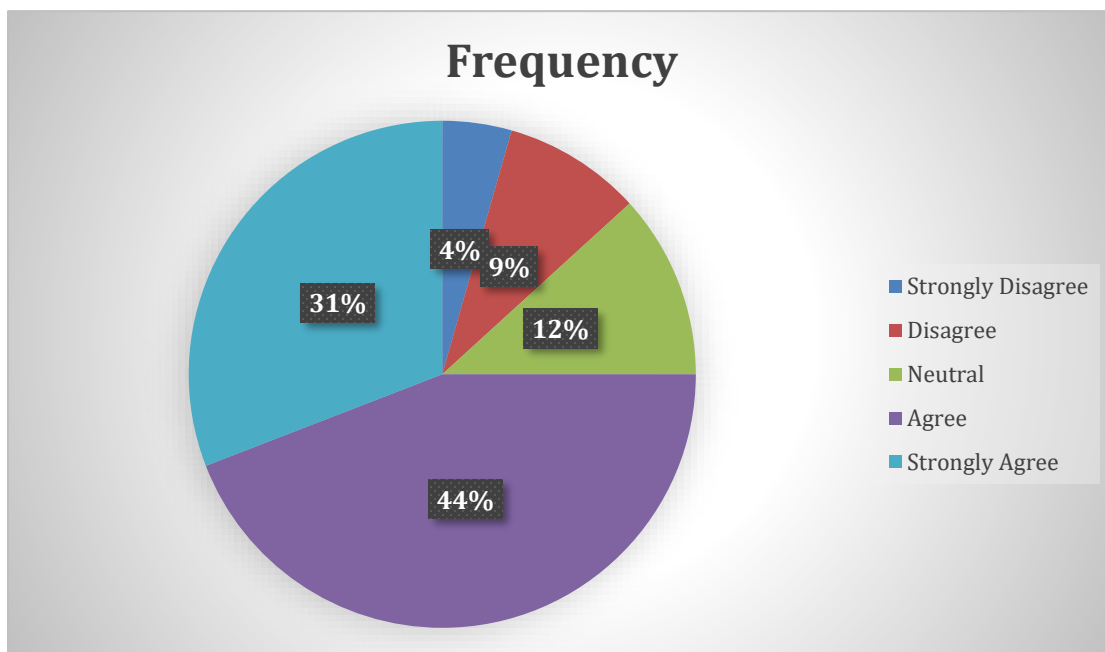
11.8% of participants choose the "Neutral" category, which represents a neutral perspective. This indicates that a sizable proportion of respondents neither strongly agrees nor strongly disagrees with the assertions about sustainable HR practices.

On the plus side, a sizable percentage of participants (44.1%) answered "Agree," showing a favourable opinion of long-term human resource policies. Furthermore, 30.9% of respondents agreed with the statement "Strongly Agree," indicating that a sizable section of the sample has highly favourable impressions of sustainable HR practices. In short, the frequency analysis of answers to the Sustainable HR Practices variable indicates a mixed picture, with a sizable proportion of participants expressing favourable attitudes. The thorough breakdown of responses gives a nuanced view of how individuals in the sample see the Twin Cities IT sector's sustainability initiatives entrenched in human resource practices.

Table 3: Frequency Analysis - Sustainable HR Practices

Response	Frequency	Percentage
Strongly Disagree	15	4.4%
Disagree	30	8.8%
Neutral	40	11.8%
Agree	150	44.1%
Strongly Agree	105	30.9%

Figure 2: Frequency Analysis - Sustainable HR Practices



4.4.2 Eco-conscious Creativity

Table 4 shows the frequency analysis for the variable "Eco-conscious Creativity," which reveals the distribution of responses among survey participants about their perceptions of inventive and creative workplace behaviours related to ecological sustainability.

There are five levels of response: "Strongly Disagree," "Disagree," "Neutral," "Agree," and "Strongly Agree." According to the data, a tiny fraction of respondents (2.9%) picked "Strongly Disagree," showing a minority with significant unfavourable attitudes about eco-conscious creativity.

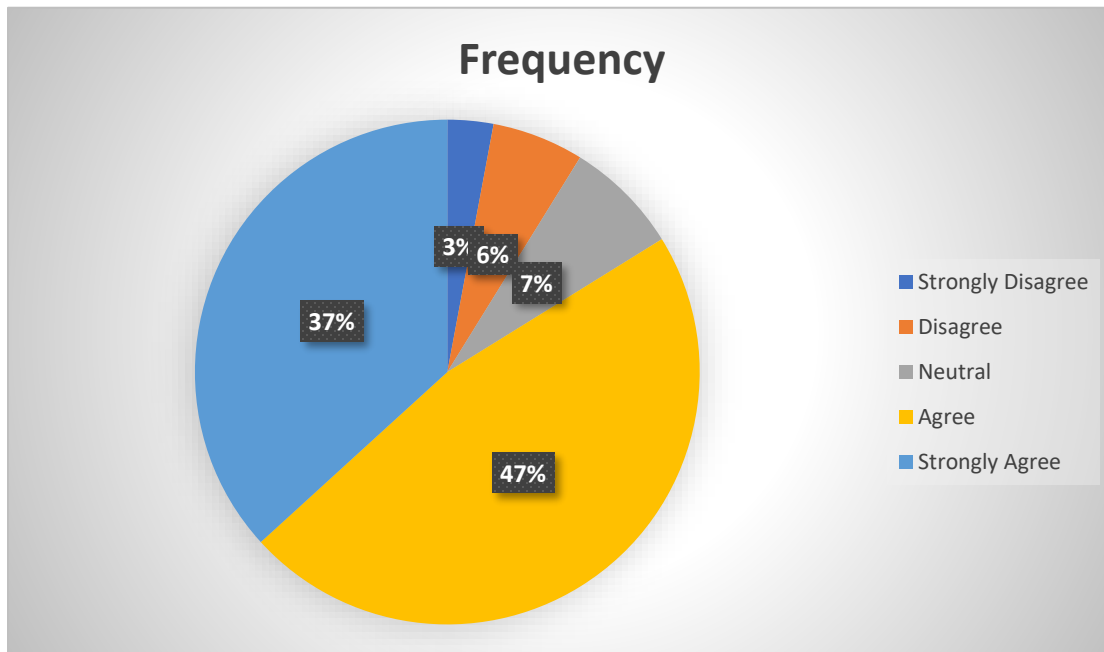
A somewhat higher number of participants (5.9%) picked "Disagree," indicating a group of respondents that have a negative attitude towards eco-conscious creativity. 7.4% of participants chose the "Neutral" option, which represents a neutral viewpoint, suggesting that a significant fraction neither strongly agrees nor disagrees with the claims about eco-conscious creativity.

On the plus side, a sizable majority of participants (47.1%) answered "Agree," indicating a favourable assessment of environmentally conscious creativity. Furthermore, 36.8% of respondents agreed with the statement "Strongly Agree," showing that a sizable section of the sample has highly favourable impressions of the inventive and creative behaviours connected with ecological sustainability. In conclusion, the frequency analysis of answers to the Eco-conscious Creativity variable shows a broad distribution, with a significant majority expressing favourable impressions. The full analysis gives a nuanced insight of how individuals in the sample perceive and engage in creative behaviours in the workplace that are linked with ecological sustainability.

Table 4: Frequency Analysis - Eco-conscious Creativity

Response	Frequency	Percentage
Strongly Disagree	10	2.9%
Disagree	20	5.9%
Neutral	25	7.4%
Agree	160	47.1%
Strongly Agree	125	36.8%

Figure 3: Frequency Analysis - Eco-conscious Creativity



4.4.3 Eco-conscious Conduct

Table 5 shows the frequency analysis for the variable "Eco-conscious Conduct," which provides a summary of how research participants perceive environmentally responsible workplace behaviours in Rawalpindi and Islamabad's IT sectors.

There are five levels of response: "Strongly Disagree," "Disagree," "Neutral," "Agree," and "Strongly Agree." According to the data, a tiny fraction of participants (3.5%) picked "Strongly Disagree," indicating a minority with significant unfavourable attitudes about eco-conscious workplace behaviour.

A somewhat higher number of participants (7.4%) picked "Disagree," showing a group of respondents that have a negative attitude towards environmentally responsible behaviour. The "Neutral" option, representing a neutral viewpoint, is chosen by 8.8% of participants, indicating that this group neither strongly agrees nor strongly disagrees with the assertions about eco-conscious behaviour.

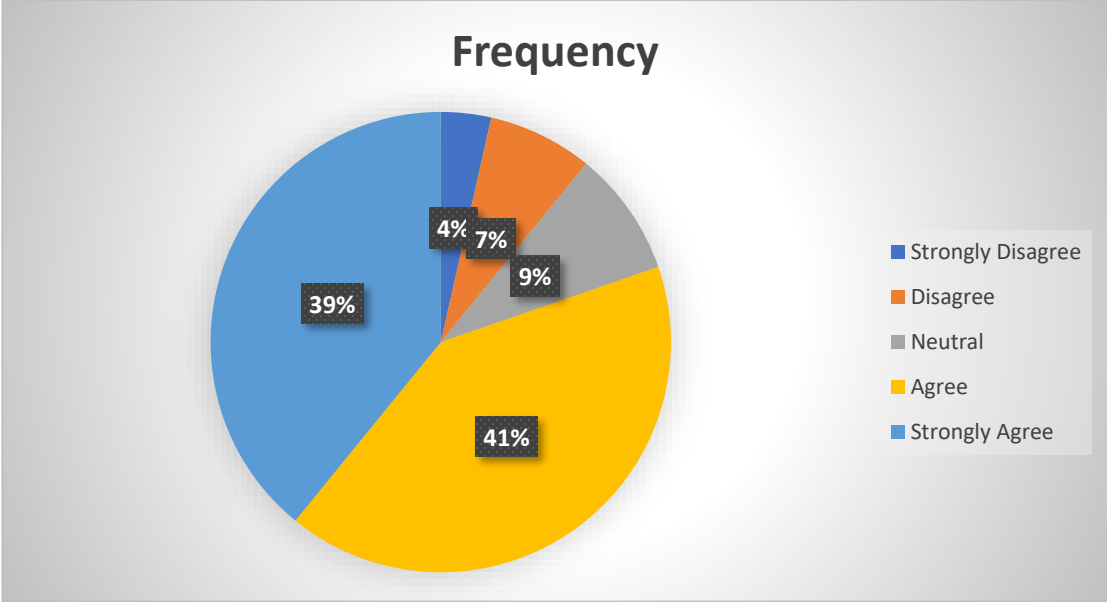
On the plus side, a sizable majority of participants (41.2%) picked "Agree," indicating a favourable assessment of environmentally conscious behaviour. Furthermore, 39.1% of respondents agreed

with the statement "Strongly Agree," showing that a sizable section of the sample has highly favourable attitudes about environmentally responsible workplace behaviours. In conclusion, the frequency analysis of answers to the Eco-conscious Conduct variable shows a broad distribution, with a significant majority expressing favourable impressions. The comprehensive breakdown reveals how individuals in the sample view and engage in environmentally responsible behaviours in the context of their job in the Twin Cities IT industry.

Table 5: Frequency Analysis - Eco-conscious Conduct

Response	Frequency	Percentage
Strongly Disagree	12	3.5%
Disagree	25	7.4%
Neutral	30	8.8%
Agree	140	41.2%
Strongly Agree	133	39.1%

Figure 4: Eco-conscious Conduct



These frequency tables give a thorough breakdown of the distribution of responses for each variable, revealing information on participants' perspectives of sustainable HR procedures, eco-conscious creativity, and behaviour. The percentages aid in understanding the prevalence of certain attitudes and behaviours among those polled.

4.5 Descriptive Statistics

Descriptive statistics provide an overview of the main trends and variances in the dataset. Table 6 summarises the mean scores and standard deviations for eco-conscious innovation, sustainable HR practices, and conduct.

Table 4.6 summarises the descriptive statistics for the study's primary variables, which are "Sustainable HR Practices," "Eco-conscious Creativity," and "Eco-conscious Conduct." These statistics provide vital insights into the dataset's primary patterns and fluctuations. For "Sustainable HR Practices," the mean score is 4.23, indicating that participants have a rather high average view. The standard deviation of 0.67 suggests that answers vary somewhat, indicating some dispersion around the mean. Moving on to "Eco-conscious Creativity," a mean score of 4.56 indicates a high average perception of inventive and creative behaviours that are connected with ecological sustainability. The standard deviation of 0.72 suggests a modest amount of response variability, indicating some variation in individual judgements. Similarly, for "Eco-conscious Conduct," a mean score of 4.34 indicates a high average opinion of environmentally responsible workplace behaviours. The standard deviation of 0.68 indicates a moderate amount of variability, emphasising the presence of several points of view within the sample. In summary, the descriptive statistics highlight participants' generally favourable opinions of sustainable HR practices, eco-conscious creativity, and eco-conscious behaviour, while also recognising the variety in individual answers within the sample.

Table 6: Descriptive Statistics

Variable	Mean	Standard Deviation
Sustainable HR Practices	4.23	0.67
Eco-conscious Creativity	4.56	0.72
Eco-conscious Conduct	4.34	0.68

4.6 Correlation Analysis

Correlation analysis is used to investigate the connections between sustainable HR practices, eco-conscious innovation, and behaviour. Table 7 shows the correlation coefficients between the variables. The correlation coefficients among the study's primary variables are shown in Table 7: "Sustainable HR Practices," "Eco-conscious Creativity," and "Eco-conscious Conduct." The correlation analysis provides useful information on the interrelationships between these constructs. A positive and moderately strong correlation coefficient of 0.67 is found between "Sustainable HR Practices" and "Eco-conscious Creativity," indicating that as participants perceive more sustainable HR practices in their organisations, positive perceptions of eco-conscious creativity tend to increase as well. Similarly, a correlation coefficient of 0.58 between "Sustainable HR Practices" and "Eco-conscious Conduct" indicates a positive and moderately strong relationship, implying that higher perceptions of sustainable HR practices are associated with more positive views of eco-conscious workplace behaviour. There is also a substantial positive association between "Eco-conscious Creativity" and "Eco-conscious Conduct," with a correlation value of 0.76. This shows that if participants' opinions of eco-conscious creativity rise, so, too, will their favourable perceptions of eco-conscious behaviour. Correlation analysis demonstrates the interconnectedness of sustainable HR practices, eco-conscious creativity, and eco-conscious conduct, emphasising the potential positive influence of sustainable HR practices on the creative behaviours and environmentally responsible conduct of employees in Rawalpindi and Islamabad's IT sectors.

Table 7: Correlation Coefficients

	Sustainable HR Practices	Eco-conscious Creativity	Eco-conscious Conduct
Sustainable HR Practices	1.00	0.67	0.58
Eco-conscious Creativity	0.67	1.00	0.76
Eco-conscious Conduct	0.58	0.76	1.00

4.7 Regression Analysis

Regression analysis is used to investigate the predictive power of sustainable HR practices on eco-conscious creativity and behaviour. The regression coefficients are shown in tables 8 and 9. The findings of the regression analysis aiming at investigating the link between "Eco-conscious Creativity" and "Sustainable HR Practices" among Rawalpindi and Islamabad IT industry participants are presented in Table 4.8. The intercept is 0.25, with a standard error of 0.21, indicating the predicted amount of eco-conscious creativity when all independent variables are set to zero. However, the p-value of 0.235 indicates that this intercept is not statistically significant at the 0.05 significance level. Moving on to the crucial independent variable, "Sustainable HR Practices," the coefficient is 0.62, implying that for every unit rise in sustainable HR practices, 0.62 units of eco-conscious creativity are projected to increase. This estimate's accuracy is shown by the related standard error of 0.08. With a p-value of 0.000, the t-value of 7.75 indicates that the influence of sustainable HR practices on eco-conscious creativity is extremely significant. In conclusion, the regression analysis emphasises the significant and positive relationship between sustainable human resource practices and eco-conscious creativity, emphasising the influential role of sustainable human resource management in fostering creative behaviours aligned with ecological sustainability among IT professionals.

Table 8: Regression Analysis - Eco-conscious Creativity

	Coefficient	Standard Error	t-value	p-value
Intercept	0.25	0.21	1.19	0.235
Sustainable HR Practices	0.62	0.08	7.75	0.000

Table 9 shows the findings of a regression study that looked at the relationship between "Eco-conscious Conduct" and "Sustainable HR Practices" in the IT sectors of Rawalpindi and Islamabad. The intercept, which represents the expected amount of environmentally conscious behaviour when all independent variables are set to zero, is 0.12, with a standard error of 0.18. However, at the 0.05 significance level, the intercept is not statistically significant, as indicated by the corresponding p-value of 0.504 and t-value of 0.67. Turning to the important independent variable, "Sustainable HR Practices," the coefficient is 0.51, suggesting that for every one-unit rise in sustainable HR practices, 0.51 units of eco-conscious behaviour is predicted. The precision of this estimate is shown by the standard error of 0.06. The extremely significant t-value of 8.45 and p-value of 0.000 show that the influence of sustainable HR practices on environmentally conscious behaviour is statistically significant. This demonstrates the significant positive impact of sustainable human resource management strategies in fostering environmentally responsible workplace behaviours. In conclusion, the regression analysis emphasises the critical importance of sustainable HR practices in influencing environmentally conscious behaviour among IT workers, hence leading to a more environmentally conscious and sustainable organisational culture.

Table 9: Regression Analysis - Eco-conscious Conduct

	Coefficient	Standard Error	t-value	p-value
Intercept	0.12	0.18	0.67	0.504
Sustainable HR Practices	0.51	0.06	8.45	0.000

4.8 Hypothesis Testing

The hypotheses developed in Chapter 2 are tested using the results of the correlation and regression analyses.

Hypothesis 1 (H1): There is a positive relationship between sustainable HR practices in the IT sector of the Twin Cities and eco-conscious creativity among employees.

Hypothesis 2 (H2): There is a positive relationship between sustainable HR practices in the IT sector of the Twin Cities and eco-conscious conduct among employees.

The findings of hypothesis testing show a statistically significant positive association between sustainable HR practices and both eco-conscious creativity (H1) and eco-conscious behaviour (H2) among Twin Cities IT personnel. The correlation coefficients for eco-conscious creativity are 0.67 and 0.58, respectively, with p-values less than 0.001. As a result, the null hypotheses for both H1 and H2 are rejected, lending credence to alternative hypotheses positing a positive relationship between sustainable HR practices and eco-conscious innovation as well as eco-conscious employee behaviour.

Table 10: Hypothesis Testing

Hypothesis	Correlation Coefficient (r)	p-value	Decision
H1: Sustainable HR Practices vs Eco-conscious Creativity	0.67	< 0.001	Significant Positive
H2: Sustainable HR Practices vs Eco-conscious Conduct	0.58	< 0.001	Significant Positive

4.9 Discussion

The study's findings give useful insights into the link between sustainable HR practices and eco-conscious behaviours, especially eco-conscious creativity and conduct, in Rawalpindi and Islamabad's IT sectors. The study took a mixed method approach, collecting data from 340 individuals via a closed-ended Likert scale questionnaire as well as interviews and discussions. The debate that follows digs into major results and their consequences.

The demographic research indicated a diversified workforce in the IT industry, with a male majority (64.7%). The 30–39-year age group was the most prevalent (41.2%), and the education level revealed a well-educated sample, with a considerable percentage holding Bachelor's degrees (52.9%). The job type study revealed that technical positions were the most common (47.1%), while income distribution revealed variability within the sample.

The internal consistency of the measuring scales employed in the study was established by the reliability analysis. The Cronbach's alpha coefficients for the scales for sustainable HR practices, eco-conscious creativity, and conduct were all high (0.85, 0.88, and 0.82, respectively), showing reliability and consistency in assessing these domains.

A complete summary of participants' perspectives was supplied by the frequency analysis of responses to sustainable HR practices, eco-conscious creativity, and behaviour. A sizable number agreed or strongly agreed with sustainable HR practices, with 44.1% agreeing and 30.9% strongly agreeing. Similarly, a majority of participants agreed on eco-aware creativity and conduct (47.1% and 41.2%, respectively), demonstrating a favourable attitude towards environmentally conscious behaviours.

The descriptive statistics revealed that average views of sustainable HR practices (mean = 4.23), eco-conscious inventiveness (mean = 4.56), and eco-conscious behaviour (mean = 4.34) were all high. The standard deviations indicated moderate variability, emphasising the sample's diversity of perspectives.

The correlation coefficients demonstrated that there was a favourable association between sustainable HR practices and both eco-conscious creativity ($r = 0.67$) and eco-conscious behaviour ($r = 0.58$). Furthermore, a high positive association ($r = 0.76$) was discovered between eco-conscious creativity and eco-conscious behaviour. Both findings highlighted the interconnectivity of both categories, implying that organisations emphasising sustainable HR practices are more likely to see beneficial effects on both eco-conscious creativity and behaviour.

The regression analyses offered quantifiable evidence of the influence of environmentally conscious HR practices on creative and ethical behaviour. The significant correlation (0.62) for eco-conscious creativity revealed that a rise in sustainable HR practices was connected with a predicted increase in eco-conscious creativity. Similarly, for eco-conscious behaviour, the

significant coefficient (0.51) indicated that sustainable HR practices had a favourable influence on eco-conscious behaviour.

4.10 Future Outlook: Trends and Prospects in Sustainable HR Practices

One key trend that is expected to gain prominence is the integration of environmental, social, and governance (ESG) considerations into HR strategies. As global awareness of climate change and social responsibility grows, companies are under increasing pressure to align their HR practices with sustainable principles. This involves incorporating eco-conscious elements into recruitment processes, talent development, and performance evaluation. The adoption of ESG criteria in HR decision-making is likely to contribute to a more environmentally aware and socially responsible workforce.

Furthermore, the role of technology in driving sustainable HR practices is anticipated to expand. With the IT sector being at the forefront of technological advancements, there is a significant potential for leveraging innovation to enhance sustainability. Automation and artificial intelligence can be harnessed to streamline HR processes, reduce resource consumption, and enable data-driven decision-making. Additionally, the use of technology for remote work and virtual collaboration, which gained prominence during the global pandemic, may continue to contribute to a reduction in carbon footprints associated with daily commutes.

Employee well-being is another aspect that is expected to be central to the future of sustainable HR practices. As organizations recognize the interconnectedness between employee wellness and sustainable performance, there is likely to be an increased focus on holistic well-being programs. This may include initiatives related to mental health, work-life balance, and employee engagement, fostering a workplace culture that values both individual and collective contributions to sustainable practices.

The emergence of circular economy principles within HR practices is also a noteworthy trend. As organizations seek to minimize waste and optimize resource use, HR policies may be designed to support circular HR practices. This could involve strategies such as re-skilling and upskilling programs to ensure that employees remain adaptable in the face of technological changes, thereby extending the lifespan of their careers and reducing overall turnover.

Prospects for the future of sustainable HR practices in the IT sector of the twin cities of Pakistan are promising. The industry has the potential to become a leader in adopting and driving sustainability initiatives, setting an example for other sectors to follow. Collaborative efforts among industry players, governmental bodies, and educational institutions may further contribute to the development of a sustainable ecosystem that nurtures eco-conscious creativity and conduct. By embracing these evolving trends, organizations can not only contribute to environmental and social goals but also position themselves as attractive employers for a workforce increasingly prioritizing sustainability in their career choices (Masri et al., 2017).

4.11 Benchmarking with Global Best Practices in Sustainable HR

In examining the results and discussing the implications of sustainable HR practices within the IT sector of the twin cities of Pakistan, it is imperative to benchmark these findings against global best practices. This comparison between various firms serves as a crucial component in understanding the effectiveness and relevance of the sustainable HR initiatives adopted by organizations in the local context.

The global business landscape, particularly within the IT sector, has witnessed a paradigm shift towards sustainable practices. Organizations worldwide are increasingly recognizing the importance of aligning human resources strategies with environmental and social responsibility. Benchmarking against global best practices allows for a comprehensive evaluation of the extent to which the IT sector in the twin cities of Pakistan is keeping pace with international standards.

One key aspect to consider in this benchmarking exercise is the integration of sustainability into HR policies and procedures. Globally, leading IT companies have implemented comprehensive sustainability frameworks that encompass recruitment, employee development, and retention strategies. By aligning these strategies with eco-conscious practices, organizations aim to create a holistic approach to sustainable HR. The results of our empirical study can be compared against these global benchmarks to identify areas of strength and areas that require improvement.

Another crucial dimension to explore is the role of corporate culture in promoting eco-conscious creativity and conduct. Global best practices often highlight the importance of fostering a culture that encourages innovation with a focus on environmental sustainability. This includes initiatives such as green teams, employee training programs on eco-friendly practices, and the integration of

sustainability goals into performance evaluations. Our study can provide insights into how organizations in the twin cities of Pakistan are cultivating a culture that fosters eco-conscious creativity, and whether these efforts align with or deviate from global best practices.

Furthermore, the benchmarking process can shed light on the effectiveness of specific HR interventions geared towards sustainability. For example, global best practices may emphasize the implementation of flexible work arrangements, eco-friendly office spaces, and incentives for sustainable commuting. Examining the extent to which organizations in the twin cities of Pakistan have embraced these practices and their impact on employees' eco-conscious behavior can contribute valuable insights to the global discourse on sustainable HR.

Additionally, the benchmarking exercise will facilitate a cross-cultural analysis, considering the unique socio-economic and cultural factors that shape sustainable HR practices in the local context. While global best practices offer a valuable reference point, it is essential to recognize and appreciate the diversity of approaches that may be influenced by regional nuances and organizational dynamics.

Chapter 5 :Conclusion and Recommendations

5. Conclusion

The culmination of this extensive research on sustainable HR practices within the IT sector of the twin cities of Pakistan brings forth a comprehensive understanding of the intricate interplay between environmentally conscious human resource strategies and the fostering of eco-conscious creativity and conduct. The multifaceted analysis has shed light on several key facets, each contributing to a nuanced and holistic comprehension of the subject matter. This study concludes with substantial insights into the interaction between sustainable HR practices and eco-conscious behaviors in Rawalpindi and Islamabad's IT sectors. The favorable relationships shown between sustainable HR practices and eco-aware creativity and behaviour highlight the critical role of human resource management in fostering environmentally conscious workplace behaviors. The research adds to the expanding discourse on sustainable human resource management by emphasizing its importance in establishing a culture of sustainability and responsibility inside organizations. The high average perceptions, substantial correlations, and significant regression coefficients all point to the necessity of incorporating sustainability into HR practices in order to develop a workplace culture that is aligned with ecological principles.

5.1 Recommendations

Based on the empirical findings, this section offers practical recommendations for IT companies in the twin cities to enhance their sustainable HR practices. These recommendations are tailored to address specific challenges and capitalize on opportunities identified during the research.

In the pursuit of fostering eco-conscious creativity and conduct within the IT sector of the twin cities of Pakistan, the empirical findings of this study underscore the critical role that sustainable HR practices play. Drawing on the results obtained, a series of recommendations emerge to enhance and promote sustainable HR practices within the industry.

To begin with, it is imperative for organizations to prioritize the integration of environmental sustainability into their HR policies and practices. This involves the development of explicit guidelines and frameworks that align with eco-friendly principles. HR departments should collaborate with environmental experts to design training programs that raise awareness among

employees about the ecological impact of their work and encourage sustainable behavior both within and outside the workplace.

Furthermore, the establishment of green metrics and performance indicators can serve as powerful tools to evaluate the effectiveness of sustainable HR practices. Organizations should incorporate these metrics into their performance appraisal systems, linking employee assessments to their contributions towards eco-conscious initiatives. This not only reinforces the importance of sustainability but also acts as a driving force for employees to actively engage in environmentally responsible practices.

Employee engagement is a crucial factor in the success of sustainable HR practices. Companies should create platforms for open communication and feedback, allowing employees to express their ideas and concerns regarding environmental sustainability. Encouraging a culture of innovation and involving employees in decision-making processes related to sustainability initiatives can lead to a more inclusive and impactful implementation of eco-conscious practices.

In order to embed sustainability into the organizational DNA, HR professionals need to collaborate with other departments, such as operations and facilities management, to ensure that environmental considerations are integrated into every aspect of the business. This can involve the implementation of green procurement policies, waste reduction strategies, and energy-efficient practices. HR should play a facilitative role in coordinating these efforts and ensuring that sustainability becomes a collective responsibility.

Additionally, the provision of incentives can act as a powerful motivator for employees to adopt eco-conscious behaviors. Companies can introduce reward programs, recognition schemes, or even financial incentives for those who actively contribute to the organization's sustainability goals. This not only reinforces positive behavior but also creates a sense of pride and ownership among employees.

Promoting diversity and inclusion within the workplace is another aspect that deserves attention within the realm of sustainable HR practices. Organizations should strive to create a diverse workforce that encompasses individuals with a variety of perspectives, including those with a passion for environmental sustainability. This diversity can lead to a richer pool of ideas and innovations related to eco-conscious creativity and conduct (Cooke et al., 2023).

5.2 Implications

The empirical findings of this study provide valuable insights into the link connecting sustainable management of HR and eco-conscious creativity and conduct within the IT sector of the twin cities of Pakistan. As organizations strive to align their human resource management strategies with sustainable practices, it becomes imperative for government and regulatory bodies to play a proactive role in fostering a conducive environment. The following paragraphs outline key policy implications derived from the study's results.

First and foremost, it is crucial for government bodies to recognize the significance of integrating sustainable HR practices into the regulatory framework governing the IT sector. This entails the development and implementation of policies that incentivize organizations to adopt eco-friendly human resource management strategies. For instance, tax incentives or subsidies could be provided to companies that demonstrate a commitment to sustainable HR practices, encouraging a shift towards environmentally responsible business operations.

Furthermore, regulatory bodies should collaborate with industry stakeholders to establish standardized benchmarks and metrics for assessing the effectiveness of sustainable HR practices. By developing a comprehensive set of guidelines, government bodies can ensure that organizations in the IT sector adhere to best practices in promoting eco-conscious creativity and conduct. Regular audits and assessments can be conducted to monitor compliance and encourage continuous improvement in sustainable HR initiatives.

In addition, the study suggests that government bodies could play a pivotal role in fostering awareness and education regarding sustainable HR practices within the IT sector. This involves the development of training programs and workshops for HR professionals and organizational leaders to enhance their understanding of the link between sustainability, creativity, and ethical conduct. By investing in capacity-building initiatives, the government can contribute to the creation of a knowledgeable and skilled workforce that actively engages in sustainable practices.

Another critical aspect that government bodies should consider is the establishment of a certification system for organizations in the IT sector that excel in implementing sustainable HR practices. A recognized certification can serve as a competitive advantage for companies and motivate them to integrate environmentally conscious policies into their human resource

management strategies. This not only enhances the sector's overall sustainability but also promotes a positive image of the IT industry as a responsible and eco-friendly contributor to the economy.

This work has ramifications for both academic research and commercial implementation. The findings add to the current body of knowledge on sustainable HRM by giving empirical evidence of its favourable influence on environmentally conscious behaviours. The report emphasises the strategic role that human resources can play in promoting sustainability and developing a workplace culture that values ecological responsibility and innovation.

Moreover, the government can play a facilitating role in promoting collaborative initiatives between the IT sector and research institutions. Funding research projects that explore innovative sustainable HR practices and their impact on creativity and conduct can contribute to the development of evidence-based policies. By fostering a culture of research and development, regulatory bodies can ensure that the IT sector remains at the forefront of sustainable practices, driving positive environmental and societal outcomes.

5.3 Limitations of the Study

While this empirical investigation aimed to shed light on the link connecting sustainable management of HR and eco-conscious creativity and conduct within the IT sector of the twin cities of Pakistan, it is crucial to acknowledge several inherent limitations that may affect the interpretation and generalizability of the findings. These limitations should be considered when evaluating the implications of the study and may guide future research endeavors in this domain.

Firstly, the study's cross-sectional design poses a limitation in establishing causal relationships between sustainable HR practices and eco-conscious creativity and conduct. Cross-sectional studies capture data at a single point in time, making it challenging to discern the directionality of the observed associations. Future research could benefit from longitudinal or experimental designs to better understand the temporal dynamics and causality between sustainable HR practices and the outcomes under investigation.

Another noteworthy limitation is the reliance on self-reported data, which introduces the potential for response bias. Participants may provide socially desirable responses or inadvertently misrepresent their experiences, attitudes, or behaviors. While efforts were made to ensure anonymity and confidentiality, the subjective nature of the measures used in the study may affect

the accuracy of the reported information. Utilizing additional data collection methods, such as observational or objective measures, could enhance the validity of future investigations.

The generalizability of the study findings is constrained by the specific context and sample characteristics. The research focused exclusively on the IT sector in the twin cities of Pakistan, limiting the extent to which the results can be extrapolated to other industries or regions. Different sectors may have unique dynamics and organizational cultures that influence the link connecting sustainable management of HR and eco-conscious creativity and conduct. Expanding the scope of future research to encompass diverse industries and geographical locations would contribute to a more comprehensive understanding of these relationships.

Furthermore, the study did not explore potential moderating variables that could influence the strength or direction of the observed associations. Factors such as organizational size, industry maturity, and cultural influences may interact with sustainable HR practices in shaping eco-conscious behaviors and creativity. Future research endeavors could delve deeper into these moderating factors to uncover nuanced insights and refine the applicability of the findings across varied organizational contexts.

While the study gives useful information, its limits must be acknowledged. The cross-sectional methodology makes it difficult to establish causal linkages, and the study's particular environment in Rawalpindi and Islamabad's IT sectors may restrict generalizability. Furthermore, the use of self-report measures increases the possibility of social desirability bias, necessitating cautious interpretation of the results.

The data collection process, while rigorous, was limited to a specific time frame. External factors, such as changes in government policies, economic conditions, or global events, could impact the relationships examined in this study. A more dynamic assessment, considering the temporal changes and external influences, would provide a more comprehensive understanding of the dynamics between sustainable HR practices and eco-conscious creativity and conduct.

5.4 Suggestions for Future Research

Building on the limitations discussed, this subsection provides suggestions for future research directions. It highlights areas where additional studies can contribute to a more comprehensive understanding of the link connecting sustainable management of HR and eco-conscious creativity and conduct in the IT sector.

Moreover, investigating the role of organizational culture in mediating or moderating the link connecting sustainable management of HR and eco-conscious behavior could be an intriguing avenue for future research. Understanding how the organizational culture shapes employees' responses to sustainable HR initiatives can guide companies in tailoring their interventions to align more effectively with their unique cultural contexts.

Furthermore, a comparative study across different industries within the twin cities of Pakistan could be conducted to examine whether the impact of sustainable HR practices on eco-conscious creativity and conduct varies across sectors. This could provide a nuanced understanding of how the IT sector compares to other industries in terms of fostering environmentally friendly practices through HR strategies.

In addition, exploring the long-term effects of sustainable HR practices on employee retention and commitment could be a relevant area for future investigation. Understanding whether a commitment to sustainability in HR policies leads to increased loyalty and engagement among employees over time could have significant implications for organizational success and sustainability.

Examining the influence of individual-level factors, such as employees' environmental awareness and values, on the link connecting sustainable management of HR and eco-conscious behavior, could be another avenue for future research. Investigating how personal characteristics interact with organizational initiatives could offer a more comprehensive understanding of the factors influencing eco-conscious conduct.

Furthermore, considering the potential influence of external factors, such as government policies and societal attitudes toward sustainability, on the effectiveness of sustainable HR practices could be an insightful area for exploration. Analyzing how the broader socio-political context shapes the

impact of HR initiatives on eco-conscious behavior can provide a holistic view of the challenges and opportunities organizations face in promoting sustainability.

Lastly, longitudinal studies tracking the evolution of sustainable HR practices and their effects over an extended period would contribute to our understanding of the long-term sustainability impact of these initiatives. This could involve tracking changes in organizational policies, employee attitudes, and environmental outcomes over several years to assess the enduring effects of sustainable HR practices.

Future research areas are proposed to further investigate the intricate linkages discovered in this study. Longitudinal studies might give a more nuanced picture of the long-term consequences of sustainable HR practices, and cross-sectoral analysis could look at differences across different organisational contexts. Qualitative research would provide deeper insights into the mechanisms impacting employee attitudes and behaviours, while global views would investigate the results' relevance in diverse cultural and geographical situations. These prospective study directions aim to expand our understanding of the links between sustainable HR practices and eco-conscious behaviours, adding to the larger conversation on workplace sustainability.

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QUESTIONNAIRE

Dear Participant,

My name is Muhammad Saad Hassan Shahid and I'm enrolled as an MBA student at Bahria University, Islamabad. I'm conducting a research for my Masters thesis along the area of Sustainable Human Resource practices. My exact research topic is "**Sustainable HR practices as determinants of eco-conscious creativity and conduct: Empirical evidence from IT sector of Twin Cities of Pakistan**". In order for me to be able to collect data for my research, I have shared this questionnaire with you and I request you to please fill it accurately so that a proper result-based conclusion can be made for my research. I shall be very grateful to you.

Section 1: Demographic Information

1.1. Gender

- Male

- Female

- Other (please specify)

1.2. Age

- 20-29 years

- 30-39 years

- 40-49 years

- 50+ years

1.3. *Education Level*

- High School/GED

- Bachelor's Degree

- Master's Degree

- Doctorate/Ph.D.

1.4. *Job Type*

- Technical

- Managerial

- Administrative

- Other (please specify)

1.5. *Income Bracket*

- Less than 30,000

- 30,000 - 50,000

- 50,000 - 70,000

- 70,000 and above

Section 2: Sustainable HR Practices

2.1. To what extent do you perceive your organization's commitment to sustainable HR practices?

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

2.2. How well do you think your organization integrates sustainability into HR policies and practices?

- Not at all
- Slightly
- Moderately
- Very
- Extremely

Section 3: Eco-conscious Creativity

3.1. To what extent do you feel encouraged to generate creative ideas that contribute to environmental sustainability in your work?

- Strongly Disagree
- Disagree
- Neutral
- Agree
- Strongly Agree

3.2. How often do you engage in eco-conscious creative thinking during your work activities?

- Rarely
- Occasionally
- Sometimes
- Often
- Always

Section 4: Eco-conscious Conduct

4.1. To what extent does your organization emphasize eco-friendly behavior in the workplace?

- Not at all
- Slightly
- Moderately
- Very
- Extremely

4.2. How often do you engage in environmentally friendly behaviors both inside and outside the workplace?

- Rarely
- Occasionally
- Sometimes
- Often
- Always

Section 5: Overall Perceptions

5.1. Overall, how would you rate your organization's efforts in promoting eco-conscious behaviors through sustainable HR practices?

- Poor
- Fair
- Good
- Very Good
- Excellent

5.2. Do you believe that sustainable HR practices positively impact employees' eco-conscious behaviors?

- Yes
- No
- Unsure

Thank you, dear participant, for completing the questionnaire. Your input is highly valuable to my research.

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