Eco-Performance of SMEs in Pakistan: Nexus of Eco-Friendly Human Resource Management Practices and Eco-Friendly Business Strategies

Dr. Missal Khan

Institute of Management Sciences, The University of Haripur, Haripur.
missalkhan08@gmail.com

Mr. Javed Iqbal

PhD Scholar – Public Policy & Governance, Institute of Management Sciences, The University of Haripur, Haripur. Email: javediqbalpms@gmail.com

Prof. Abdul Majid*

Professor / Director, Institute of Management Sciences, The University of Haripur, Haripur. Corresponding Author Email: abdulmajid@uoh.edu.pk

Syed Habib ul Hassan Gillani

PhD Scholar – Public Policy & Governance, Institute of Management Sciences, The University of Haripur, Haripur.
Email: syedhabibulhassangillani@gmail.com

Muhammad Tahir

PhD Scholar – Public Policy & Governance, Institute of Management Sciences, The University of Haripur, Haripur. Email: mtahir@uoh.edu.pk

Abstract

The main objective of this research is to investigate the effect of Eco-friendly human resource management (HRM) practices on eco-performance (EP) of manufacturing small and medium enterprises (SMEs) in Pakistan. Additionally, it has been investigated how eco-friendly business strategies (EFBS) as a mediator affect the relationship between eco-friendly HRM practices and EP. Data was collected form chief executive officers (CEOs) and mangers of 137 manufacturing SMEs in Pakistan. These manufacturing SMEs include: leather goods, plastic products, wooden furniture, auto parts and PVC pipes. For the purpose of gathering data, convenience sampling was utilized. Data analysis techniques such as linear regression and structural equation modelling were used. Results show that eco-friendly HRM practices have a considerable, favorable influence on eco-friendly business strategies (EFBS). Furthermore, there is a considerable positive association between EFBS and EP. The findings of this study show that EFBS mediates the association between eco-friendly HRM practices and EP. Additionally, it is discovered that stakeholder engagement (SE) as moderator strengthens the direct effect of eco-friendly HRM practices on EFBS. The study presents valuable and practical implications to top management, managers in practice and policymakers for ensuring the commitment of human resources towards adoption and implementation of eco-friendly business strategies to achieve eco-performance.

1. INTRODUCTION

Several laws and regulations compel businesses to develop and implement eco-friendly business practices in order to reduce environmental deterioration (Leonidou, 2017; Dixit, 2020). According to Pakistan's Natural Protection Act (1997), all organizations must ensure the protection, restoration, and preservation of the natural environment (Ullah et al, 2021). However, even after 24 years, relatively few businesses, particularly those in the production industry, give environment the due attention that it deserves. According to the study of Wang & Yang (2020), manufacturing sector contributes significantly to the long-term economic growth of a country. This sector plays a significant role in generating prosperity, reducing poverty, distributing income and sustainable development of a country. However, despite numerous advantages, there are some negative impacts of operational activities of manufacturing sector on the environment like air and water pollution, high consumption of natural resources, energy, raw-materials etc. (Yong et al., 2019). Therefore, it is imperative to reduce both the harmful impacts of rapid economic growth and degradation of natural environment.

Manufacturing SMEs functioning in Pakistan are equally accountable for environmental deterioration. According to Country Strategic Document (2018-2022) of UNESCO Pakistan, there are a considerable number of manufacturing SMEs operating in Pakistan and these enterprises are responsible for almost 70% of environmental degradation. At the conclusion, the country is facing an alarming scenario as a result of the degradation of the natural environment. In order to address the problem of environmental deterioration in Pakistan, the government, environmental researchers, environmental protection agencies and policy makers must pay special attention.

Due to the increasing environmental problems and the pressure to adopt sustainable practices, many organizations are now considering incorporating eco-performance into their strategic planning (Ghouri et al, 2020). According to Debenedetti et al. (2021), various social and cultural factors force businesses to develop and implement eco-friendly business strategies in order to improve EP. The concept of eco-friendly HRM practices has gained widespread recognition due to the increasing number of organizations that are looking to improve their EP (Raza et al,2022). Eco-friendly HRM practices are the strategic resource that can provide the foundation to grow firm competence, which can lead to optimum performance gradually (Singh et al, 2019). Nikolaou (2019) state that eco-friendly HRM resources are non-substitutable, difficult to imitate, valuable, rare and best for businesses' long-term success. Organizations are interested to implement and adopt environmental sustainability policies but remained unsuccessful to do this, because it is hard to implement eco-friendly practices without assistance of eco-friendly workers (Amankwah-Amoah, 2020). Recent research has

primarily highlighted the gap and its significance. Renwick et al (2013) recognized that the majority of previous research on eco-friendly HRM is focused on the influence of specific HRM practices on EP, they expressly urged for studies that examine the distinct effects of various HRM practices on EP simultaneously. To comprehend the explicit link between eco-friendly HRM practices and EP, this is one of the crucial areas that need in-depth investigation and the goal of this study is to bridge this knowledge gap.

Kim (2019) strongly advocates that the success of a firm's eco-performance is based on its employees' eco-friendly activities, because employees' eco-friendly actions improve the firm's overall eco-performance. According to Naz (2021), if employees are concerned about environmental protection, they are more likely to become involved in the process of implementing environmental protection initiatives. The same has been discussed by (Yong et al, 2020) that eco-friendly HRM practices are important, However, it is insufficient to directly enhance EP. Understanding the internal mechanisms that may be involved in this association is important. Therefore, it is suggested that employing eco-friendly business strategies (EFBS) as a mediator may increase the explanatory power of this relationship. Eco-friendly HRM practices are the fundamental driving force for the success of EFBS. According to Rui, & Lu (2021), various stakeholders' external influences encourage the business community to act sustainably while developing their business strategies. To measure their effectiveness in protecting the environment, businesses operating in developing countries must employ eco-friendly business practices (Sarkar, 2021).

In order to attain sustainable growth and development, organizations have been forced to develop favorable interactions with its stakeholders and engage them in their business activities. These activities, like interacting with stakeholders, have revealed to be important sources of sustainability for an enterprise (Nguyen & Adomako, 2022). Despite the fact that the literature recognizes the significance of quality stakeholder engagement (Bellucci et al., 2019; Ruiz, Romero & Fernandez-Feijoo, 2021; Shaukat et al., 2022). Skeholder engagement (SE) is an important consideration in a company's integrated review process. Because it reveals whether businesses are attentive to the needs and aspirations, interests, and requirements of significant stakeholders (Torelli, Balluchi & Furlotti, 2020). In order to attain common goals, organisations must involve essential stakeholders in their business and strategic activities. Businesses must connect with various stakeholders and engage them in routine business activities in order to compete in an increasingly competitive business environment.. SE is crucial capacity to comprehend and address relevant stakeholder concerns. The current study contributes to the existing body of knowledge by examining the relationship between eco-friendly HRM practises and EFBS through the moderating role of SE, thereby making a significant contribution to the available research pertaining to manufacturing SMEs by focusing on the relationship between eco-friendly HRM practises, SE, and EFBS.

This study has five main objectives. The first objective of this study is to establish relationship between eco-friendly human resource management practices and eco-performance. The study's second objective is to determine the connection between eco-friendly human resource management and eco-friendly business strategies (EFBS). Measurement of the strength of the link between eco-friendly business strategies and eco-performance is the third objective of this study. The study's fourth and final objective is to determine how eco-friendly business strategies (EFBS) affect both eco-performance and eco-friendly HRM. The fifth and final objective of this study is to identify moderating role of stakeholder engagement and its relationship with eco-friendly HRM practices and eco-friendly business strategies.

The outline of this research paper is comprised of four sections. The second section of this paper comprises theoretical background and hypothesis development. Whereas, in the third section, methodology has been explained systematically. The results of the study have been discussed in fourth section of this paper. Key contributions and future research are highlighted in the last section along with research limitations.

2. LITERATURE REVIEW AND THE DEVELOPMENT OF HYPOTHESES

2.1 Eco-Performance

EP is a mechanism by which an organization incorporates environmental concerns into its operational activities in accordance with the accepted standards (Trumpp & Guenther, 2017). EP incorporates the improvement of existing production processes in order to reduce the environmental footprint. Simply stated, it refers to the measurement of a company's interaction with its environment (Cheng, Yang & Sheu, 2014).). Businesses may increase their efficiency and build and reinforce their core competencies with the help of eco-performance (Albort-Morant & Ribeiro-Soriano, 2016)). In other terms, EP is the interaction between an organization and its surroundings (Rehman et al., 2020). EP comprises minimizing waste, the quantity of product components, packing weight, pollution of all kinds, and installing pollution control equipment (Wang & Yang, 2020). Investing in recyclable raw materials or sustainable goods can eventually boost eco-performance (Afshan & Yaqoob, 2022).

2.2 Eco-Friendly Human Resource Management Practices

The concept of eco-friendly HRM practices is not new as it has been extensively studied by several scholars in the environmental management literature that has already been published (Ali et al, 2021; Wang & Yang, 2020; Govindan, 2018). Eco-friendly HRM practices is defined as set of practices, policies and system that enable employees for the benefits of the individual, community and both business and natural environment (Roscoe et al., 2019). Additionally, eco-friendly HRM practices encourages employees to have an environmentally and socially conscious outlook through methods including recruitment, selection, promotion, etc. (Kim et al, 2019). Employees have a significant role in establishing an organization that is resource-efficient, socially responsible, and sensitive to the environment (Zaid et al., 2018). Eco-

friendly HRM practices help firms to develop an eco-friendly workforce that is skilled to realize and comprehend development initiatives. They also make workers of the organization efficient for the benefit of individuals, society and the environment (Saeed et al., 2019). Eco-friendly HRM practices have been regarded as a crucial component in raising EP (Singh et al., 2020). According to a review by Renwick et al. (2013), numerous eco-friendly HRM practices are favorably correlated with the EP of businesses. Specifically, eco-friendly recruitment and selection, eco-friendly performance management, eco-friendly training and involvement and eco-friendly pay and reward (Ahmad, S. (2015). Assessments designed to determine if workers have a favorable attitude toward environmental concerns are used in eco-friendly recruitment and selection to find and hire applicants who are conscious of the environment's issues. Evaluation of employees' performance in the management process is a component of eco-friendly performance management. Last but not least, opportunities for employees to engage in environmental management through eco-friendly involvement should be provided, including the expression of a distinct eco-friendly vision, creation of a learning environment and various communication channels, provision of eco-friendly activities, and encouragement of eco-friendly involvement in general.

2.3 Eco-friendly Business Strategies

The notion of integrating environmental concerns with business operations is not new (Gandolfo & Lupi, 2021). Institutional theory explains how societal and legal forces act as the impetus for adopting eco-friendly strategies to ensure the existence and sustainability of organizations (Govindan, 2018). Researchers have focused on a variety of elements and consistent tactics that demonstrate an organization's stance on environmental issues, such as eco-friendly human resource management practices and environmentally friendly finance (Yong et al, 2020). A complete EFBS model must be utilized immediately to examine EFBS's overall impact on EP because the bulk of recent eco-friendly business studies have only focused on one aspect of EFBS. Purchasing and finance were two of the six key EFBS components that were utilized in the current study (Bcakcoglu, 2018). Research and development (R&D), marketing, human resources, and production (Capps et al, 2019).

Eco-friendly business strategies cover eco-friendly goods, costs, locations, and promotion as a component of EFBS (Ottman, 2017). Organizations find it simpler to recognize and meet the demands of their clients when they use eco-friendly business practices. Another crucial component of the eco-friendly business strategies, which primarily concentrates on developing eco-friendly products, eco-friendly technologies and eco-friendly R&D (Dangelico & Vocalelli, 2017). Utilizing environmentally acceptable materials and reducing waste are the main goals of the EFBS (Hsu et al., 2016). Additionally, eco-friendly purchasing is primarily concerned with buying sustainable resources for production, ideally from eco-friendly suppliers, as part of the EFBS (Sadiq, Adil, & Paul, 2022). Environmentally responsible finance, a component of EFBS, promotes the utilization of

environmental costs for each project (Majid et al, 2020). Funds are allocated by organizations to address environmental problems that enhance overall eco-performance (Ren, Zhang & Chen, 2019)

2.4   Stakeholder Engagement

The capacity of an organization to build cooperative interactions with a range of stakeholders may be viewed as stakeholder engagement (Maak, 2007; Watson et al., 2018). According to Giacomarra et al., (2019), stakeholder engagement is a critical component in the formulation of the company's strategy. The media, non-governmental organizations (NGOs), corporate partners, academic institutions (research institutes and universities), and financial institutions are some of these stakeholders. It encompasses a collection of activities or practices that businesses set actively, to engage all their stakeholder in overall managerial operations (Abbas, 2020). It may stimulate and identify essential changes to the organization's fundamental operational activities that benefit the environment and society through the involvement of key stakeholders. (Moon & Parc, 2019). Organizations all around the world routinely published sustainability reports in order to communicate their sustainability initiatives with various stakeholders and open a dialogue. (Acuti, Bellucci & Manetti, 2020). According to Stocker et al., (2020), these sustainability reports and financial reports provide information on actions of an organization in relation to the interests of stakeholders and society, which are primarily of interest to shareholders.

2.5   Eco-friendly Human Resource Management Practices and Eco-performance

The focus of eco-friendly HRM practices is on how employees may help to reduce environment degradation through operational procedures(Tang et al., 2018). Organizations are always dealing with environmental issues. To address these issues, organizations are taking a proactive approach by implementing eco-friendly HRM practices for the protection and sustainability of the environment. (Ren, Tang & Jackson, 2018) . Moreover, implementation of Eco-friendly HRM practices by means of providing eco-friendly training and acknowledging employee eco-friendly contributions helps to develop employee skills and offer them with the opportunities to contribute in eco-friendly initiatives(Chaudhary, 2020).

Eco-friendly HRM practices are a crucial part of EP, which focuses on company eco-friendly management practices, since they provide a platform for connecting workers to eco-performance (Chen & Chang, 2013). The main objective of eco-friendly HRM practices is to provide employees with the knowledge and abilities to promote EP, including waste reduction initiatives, the effective use of energy, and other natural resources (Chen & Chang, 2013). Eco-friendly HRM practices are crucial for achieving economic, social, and environmental goals. (El-Kassar & Singh, 2019). In light of the foregoing discussions, we can conclude that eco-friendly human resource management would promote eco-performance and propose the following hypothesis:

H1.   There is positive relationship between Eco-friendly Human Resource Management practices and eco-performance.

2.6   Eco-friendly HRM Practices and Eco-friendly Business Strategies

Organizations are compelled to adopt eco-friendly business strategies by a number of methods that are backed by almost all of their stakeholders (Amran, Lee, & Devi, 2014). Employees inside an organization must understand environmental expectations of all stakeholders and these expectations can be satisfied by adopting and implementing eco-friendly HRM practices (Amoako et al, 2021). Eco-friendly HRM practices includes disseminating information about the organization's eco-friendly motives those are helpful in adopting and implementing strategies that more likely to the environmentally friendly (Masri, & Jaaron, 2017). According to the literature, firms may adopt eco-friendly business strategies by employing eco-friendly HRM practices (Jackson et al., 2011; Wang & Wang, 2012; Lin & Chen, 2017; Yong et al., 2019). Generally, organizations incorporate eco-friendly HRM practices into routine business operations that align with their eco-friendly business strategies (Ahmad, 2015). Kim et al. (219) argue that eco-friendly HRM practices are those that are adopted with the intention of stimulating employee motivation, supporting organizations in meeting their environmental goals, and promoting environmental sustainability through EFBS (Kim et al, 2019). Based on above-mentioned arguments, we hypothesized as follow:

H2:   Eco-friendly HRM practices and eco-friendly business strategies are positively correlated.

2.7   Eco-friendly Business Strategies and Eco-Performance

According to Freeman's (1984) stakeholder theory, an organization's strategies are greatly influenced by the needs of its various stakeholders. This theory contends that stakeholders exert pressure on organizations to develop and execute eco-friendly business policies that support eco-performance (Prajogo et al, 2012). It is evident that EFBS make important contributions to improve organizational EP (Majid et al., 2019). Cheng, Yang & Sheu (2014) state that, when organizations formulate and implement eco-friendly strategies, the level of eco-performance will inevitably rise, and they are better equipped to adapt to institutional demands and governmental regulations. Similar to this, businesses who implement policies to create eco-friendly products have an obligation to abide by the law, reduce pollution and material waste, and make the product recyclable (Sadiq, Adil, & Paul, 2022). This is how employing eco-friendly production techniques increases EP. One of the key components that ensures an organization's participation in eco-friendly activities is corporate R&D plans. Investments made by businesses in R&D operations guarantee a decrease in the waste and pollutants created during the production process, which eventually raises EP (Lin et al, 2021).

According to Mishra (2017), eco-friendly practices ensure the production of goods that are less harmful to the environment and comply with regulatory criteria. Furthermore, eco-friendly HRM practices within an

organization may aid in the development of pro-environmental mindsets among employees, which can help to improve EP (Nisar et al, 2021). These tactics assist them in purchasing environmentally friendly raw materials, training human resources for greater eco-performance in areas like pollution avoidance, product recycling, and pollution control through waste reduction, among other things. Organizations may raise their EP by using eco-friendly buying practices. Eco-friendly investment may encourage EFBS in order to achieve a higher level of eco-performance (Cheng, Yang & Sheu, 2014). The following hypothesis was developed based on the aforementioned presumptions:

H3: Eco-performance and eco-friendly business strategies are positively correlated.

2.8 Mediating role of Eco-friendly Business Strategies

EFBS are starting to gain popularity in the business sector as a result of their capacity to deliver long-term benefits for an organization and its employees, while being aware of resource conservation and protection (Rossi et al, 2017). Eco-friendly HRM practices may assist a business in making EFBS effective; nonetheless, the role of workers is crucial. (Plichta, 2019). Organizations can accomplish more desirable and lawful environmental goals with the support of effective EFBS (Baumann-Pauly, Scherer & Palazzo, 2016). According to Majid et al. (2019), establishing EFBS in response to stakeholders has a positive effect on EP. EFBS is a significant tool for ensuring the EP. According to this viewpoint, EFBS play a significant role and establish a link between an organization's eco-friendly HRM practices and EP. With use of two logics, the mediating role of EFBS between eco-friendly HRM practices and EP may be discussed and justified. First, eco-friendly HRM practices encourages businesses to adopt EFBS, which serve as the basis of an improved EP. Second, it is claimed that stakeholders put pressure on organizations to develop and implement EFBS that assure the protection and improvement of the environment, which eventually improves the organization's EP. Furthermore, the above-mentioned comprehensive debate led us to conclude the possibility of an indirect positive relationship between Eco-friendly HRM practices and EP through EFBS. This is in accordance with the stakeholder theory. With the preceding assumptions in mind, we came up with the following hypothesis:

H4: Eco-friendly HRM practices and eco-performance are favorably mediated by eco-friendly business strategies.

2.9 Moderating role of Stakeholder Engagement

Stakeholders engagement has a positive impact on organizational sustainability and EP since they are much more inclined to work together and support its initiatives and EFBS (Stocker et al., 2020). Organizations must identify their stakeholders, manage their connections with them, and involve them in various activities in order to implement EFBS successfully and retain their operations (Barauskaite & Streimikiene, 2021). The stakeholder perspective has highlighted the fact that, aside from shareholders, various stakeholders have been taken into account in organisational processes and EFBS; nevertheless, greater focus has to be made on the effectiveness of

stakeholder engagement (Valentinov & Chia, 2022). Additionally, four EFBS have been established: cooperation, conversation, consultation, and communication (Greenwood & Levin 2007, 54). Each strategy entails a higher commitment from businesses and stakeholders to invest resources and time, and to also expose themselves to more risk while attempting to work together. We examine if there are notable disparities in tactics, techniques, and engagements with key stakeholders in light of discussions on the necessity and importance for stakeholder engagement as component of an organisation's strategy. Samuel & Siebeneck (2019) highlighted the need for information exchange, ongoing commitment to collaborative issue resolution, through engagemnt of stakehoders in operational activities. . According to the argument, the SE has a substantial positive impact on the association between eco-friendly HRM practises and EFBS; that is, when the SE is high, eco-friendly HRM practises positively and significantly contribute to EEB, however when the SE is low, the association between eco-friendly HRM practises and EFEB becomes vulnerable. We developed the following hypothesis in light of the preceding considerations:

H5: The relationship between eco-friendly HRM practices and eco-friendly business strategies is stronger while stakeholder engagement is high.

3. Methodology

3.1. Participants and Data Collection

The economies of emerging countries benefit greatly from the commodities produced by their manufacturing sectors. The largest and most important sector of Pakistan's economy is comprised of manufacturing Small and Medium-Sized Enterprises (SMEs). SMEs have an important role in determining regional growth strategies, job creation, and social stability through raising the living standards of vulnerable groups of society (Luthra et al, 2020). We selected 287 manufacturing SMEs at random from a database maintained by the Lahore Chamber of Commerce & Industry for our study. The sample frame represents the manufacturing SMEs, and the individual enterprise served as the unit of analysis for this research. These enterprises include leather goods, plastic products, wooden furniture, auto parts, PVC pipes. A significant consideration was taken, while selection criteria was made, we have selected only those enterprises operating continuously for the last 10 years. First, 49 enterprises were omitted due to erroneous contact information, while 43 enterprises were excluded due to the closure of business operations, 38 enterprises were initially eliminated due to incorrect contact information, and so on. Only 157 manufacturing SMEs with accurate contact information were included. CEOs, production managers, human resource managers from 157 manufacturing units were the target respondents. These respondents answered questions on their enterprises' eco-performance, eco-friendly business practices, and eco-friendly HRM practices. Among the respondents were 74 chief executive officers (CEOs), 49 production managers and 34 human resources managers. The Shujja et al. (2017) recommended that surveys be presented to managers in Urdu and then translated back into English using the reverse translation method.

3.2   Research setting

Cross-sectional data collection method is used for this study. We used the Lahore Chamber of Commerce and Industries' database to compile data on the manufacturing SMEs functioning in Pakistan. The efforts of chief executive officers (CEOs), production managers, and chief financial officers (CFOs) in developing and implementing various eco-friendly business strategies are valued, even though manufacturing companies in developing countries do not always struggle for eco-performance (Bhattacharyya, 2019). The primary justification for choosing manufacturing SMEs was based on the supposition that these enterprises are very concerned with protecting the environment for their competitive advantage (Cantele & Zardini, 2018).

Considering that it was an empirical study, a pilot study was conducted in accordance with Glass's (1997) guidelines. The pilot study seeks to discover and correct any issues with the questionnaire by pointing out any ambiguous or unclear parts of the scale. In the first stage, 15 persons from different production units were selected to review the questionnaire's contents. As a consequence, the researchers changed the questions' syntax and arrangement. In the second stage, the same 15 participants were given the revised questionnaire, and their responses were graded using a Likert scale with five possible results. These responses were used to evaluate the scale's pre-test validity and reliability. During the pilot study, we discovered that the majority of managers working in manufacturing SMEs in Pakistan, have difficulty in understanding English. Therefore, we translated the questionnaire into Urdu language for clarity, so that accurate and trustworthy data could be collected.

The data collecting procedure was divided into three phases; the first phase began with the training of four research assistants. The responder had been contacted by the research assistant to participate in the preliminary phase. Phase 2 involved the distribution of the questionnaires to 157 respondents, who were assisted by research assistants. During the third phase, the research assistant had gathered the respondents' completed questionnaires. Even though the research team was only able to gather 137 (68 chief executive officers (CEOs), 43 production managers and 26 human resources managers) valid responses, the response rate of 87.26% was sufficient to test the mediating model (Wolf et al., 2013). Two main parts made up the questionnaire. The variables in Part (A) control variable contain five questions: company size, firm age, business kind, experience, and education. All of the variables—the independent variable, mediating variable, and dependent variable—are measured by the questions in Part B. The Likert scale, which had a range of 1 to 5, was used to grade the items for each variable. The use of a five-point Likert scale benefited the response rate, answer quality, and respondents' level of irritability (Babakus & Mangold, 1992). For a larger study with N greater than 100, the five-point Likert scale was mostly employed (Cummins and Gullone, 2000).

Table 1: *Demographic Profile Sample Size (n = 137)*

Respondents work Experience (Years)			Enterprise Age (Years)	
1 – 5	26(18.978)	37(27.007)	1 – 5 years	
6–10	36(26.277)	23(16.788)	6 – 10 years	
11–15	21(15.328)	19(13.869)	11 – 15 years	
16–20	25(18.248)	33(24.088)	16 – 20 years	
More than 20			More than 20 years	
	29(21.1679)	25(18.248)		
Type of Enterprise		Respondents' Education Level		
Leather Goods	1	Less than 10 year of schooling	9(6.569)	
Plastic Products	2	10 years of schooling	23(16.788)	
Wooden Furniture	3	12 years of schooling	22(16.058)	
Auto Parts	4	14 years of schooling	34(24.818)	
PVC Pipes	5	16 years of schooling	28(20.438)	
	6	More than 16 years of schooling	21(15.328)	
Level of Management				
CEOs			74(47.134)	
Production Managers			49 (31.210)	
Human Resource Managers			34 (21.656)	

3.3. Measurement

Respondents provide us information about Eco-Performance of their enterprises and EFBS adopted in response of eco-friendly HRM practices, and SE. On a five-point Likert scale, concepts were rated, 1 denoting " strongly agree " to 5 denoting " strongly disagree".

3.3.1 Eco-friendly HRM Practices

Eco-friendly HRM Practices (EFHRMP) was calculated having five-dimensions: Eco-friendly Performance Management (4-items, α value = 0.78), Eco-friendly Recruitment and Selection (3-items, α value = 0.81), Eco-friendly Training (3-items, α value = 0.72), Eco-friendly Involvement (6-items, α value = 0.73) and Eco-friendly Pay and Reward (3-items, α value = 0.68). Eco-friendly HRM Practices was analyzed via six (19) items adapted from (Tang et al., 2018). A single value of EFHRMP was generated as an additive index for

the current investigation. An alpha value of 0.83 was resulted from a single EFHRMP measurement.

3.3.2 Eco-friendly Business Strategies

Ramus and Steger (2000), Banerjee (2001), and Leonidou et al. (2015) publications provided the 24 items that were used to test mediating variable EFBS. Firstly, a 5-item scale was used to measure eco-friendly marketing; secondly, a 5-item scale was used to evaluate the eco-friendly R&D; Thirdly, a 5-item scale was used to evaluate eco-friendly finance; fourthly, a 4-item scale was used to evaluate eco-friendly production and finally, a 5-item scale was used to evaluate eco-friendly purchasing. For the construct of EFBS, researchers noted alpha values of 0.79, 0.84 and 0.76 in prior work. EFBS provide an alpha value of 0.79 in the current research.

3.3.3 Eco-performance

Eco-performance (EP) was measured using fifteen (15) items adapted from (Henri & Journeault, 2010). The dependent variable of this study was EP, which indicated a composite reliability score of 0.92 and an alpha value of 0.93. EP was calculate having 4 dimensions i.e. regulatory compliance. resource usage, productivity and. stakeholder interaction. These items produced overall EP alpha value = 0.78 in the present investigation.

3.3.4 Stakeholder Engagement

Stakeholder engagement (SE) as a study moderator were analyzed from the ten (10) items developed by Marquardt (1996). It revealed a 0.76 alpha value. The items in the present investigation produced an alpha value of 0.78.
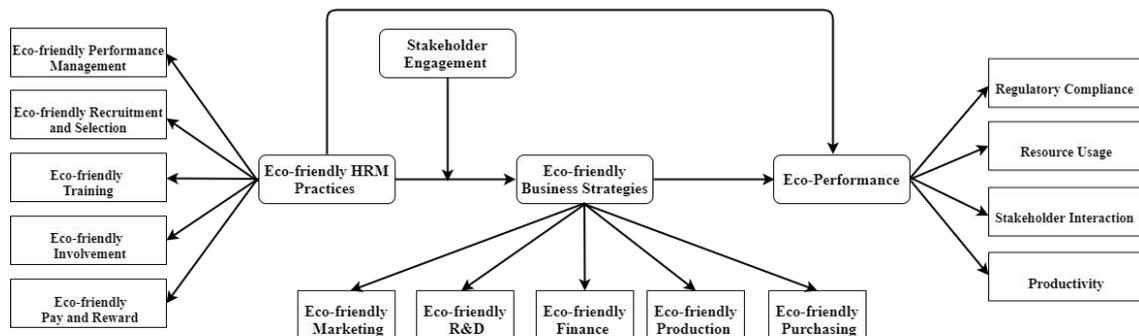
3.4 Conceptual Framework

Fig. 1. Conceptual Framework

4. Analysis and Outcomes

Finding the linear correlations among the variables included in the proposed model was the objective of this research. We used a covariance technique to evaluate the linear associations. The simultaneous change of two randomly selected variables is measured using a covariance-based technique. Williams and Brown (1994) state that the variance-based technique reveals how the data set is distributed around its mean value, While the covariance-based technique is used to ascertain the direction of the correlation between the research variables. in accordance with the methods used in recent empirical investigations, such as Barauskaite & Streimikiene, (2021), Majid et al. (2019)

and Valentinov & Chia (2022). For analysis of data, we used a selection of statistical software, notably LISREL 8.54, SPSS ver.20, and AMOS 7.0.

4.1.   Reliability and Validity

Construct validity was assessed using discriminant and convergent validity. Convergent validity was measured using CR and AVE, and the findings of CR were greater than the lower bound of 0.70. Accordingly, the findings showed that both the cutoff value (AVE > 0.50) and the average variance extraction level (CR > AVE) were exceeded. The values of the composite reliability (CR), standard loading (SL), average variance extracted (AVE), and t-values are shown in Table 2. In accordance with the suggestion of Fornell & Larcker (1981), the assessment the discriminant validity, square root (R^2) of AVE of each construct and its correlation coefficients against the other constructs were compared. To check the validity of the constructs, the corrected item total correlation (CITC) and Cronbach's alpha coefficient were computed; the findings are shown in Table 2. According to the results shown in Table 2, the Cronbach's alpha values for this study were larger than 0.7 and the value of the CITC was greater than 0.5. These values were also higher than that of the threshold values. With the support of advice suggested by Myers (1990), multi-collinearity issue was also examined.

We didn't encounter a multi-collinearity problem in our investigation because VIF value for research variables was below the 5.0 threshold level. The reliability and validity values for the variables utilized in the current investigation are displayed in Table 2. Since the tolerance statistic was considerably over 0.2, the average VIF is greater than 2 and less than 5, the greatest VIF's value is below 10, there are no multi-collinearity problems. We also used the variance-inflation factor (VIF) test to see whether there was any indication of multi-collinearity among the variables. CFA approach was applied to test discriminant validity. To validate these four distinct models, we analyzed four models with various configurations. We combine EFHRM practices, EFBS, SE, and Eco-performance into a single factor in our first model, which is composed of a single component. In the model 2, which has two factors, the first element combines EFHRM practices, EFBS, and SE, while the second factor includes Eco-performance. The model 3, which has three factors, combines EFHRM practices and EFBS in its first element. The second factor is SE, and the third factor is eco-performance. Last but not least, the suggested four-factor model includes four distinct factors: EFHRM practices, EFBS, SE, and Eco-performance. Results of the four-factor model's CFA analysis conducted using SEM demonstrate that the data is well matched (df = 544; x^2 = 255.21; CFI = 0.891; GFI = .981; p 0.001; and SRMR = 0.058).

Table 2:   *Construct Measurement And Confirmatory Factor Analysis*

Variables			CITC	FL	t-value	AVE	CR	Alpha
Eco-friendly Business Strategies		EFBS 1	0.670	0.872	11.521	0.82	0.957	0.791
		EFBS 2	0.621	0.815	13.819			
		EFBS 3	0.712	0.798	12.785			

(Banerjee, 2001; Leonidou et al., 2015; Ramus & Steger, 2000)	EFBS 4	0.711	0.814	10.135			
	EFBS 5	0.629	0.912	11.878			
	EFBS 6	0.689	0.819	14.452			
	EFBS 7	0.620	0.801	11.017			
	EFBS 8	0.667	0.869	14.005			
	EFBS 9	0.615	0.820	13.588			
	EFBS 10	0.652	0.823	11.966			
	EFBS 11	0.658	0.889	14.991			
	EFBS 12	0.625	0.812	12.989			
	EFBS 13	0.654	0.871	13.305			
	EFBS 14	0.664	0.805	13.564			
	EFBS 15	0.675	0.836	12.132			
	EFBS 16	0.691	0.811	12.121			
	EFBS 17	0.601	0.833	15.995			
	EFBS 18	0.607	0.831	13.910			
	EFBS 19	0.691	0.856	14.213			
	EFBS 20	0.684	0.811	13.551			
	EFBS 21	0.625	0.871	11.984			
	EFBS 22	0.681	0.892	13.451			
	EFBS 23	0.658	0.822	11.003			
	EFBS 24	0.798	0.854	12.132			
Eco-friendly HRM Practices (Tang et al., 2018)	EFHRMP 1	0.652	0.844	12.654	0.92	0.865	0.834
	EFHRMP 2	0.641	0.821	11.562			
	EFHRMP 3	0.652	0.856	13.452			
	EFHRMP 4	0.644	0.841	12.432			
	EFHRMP 5	0.636	0.823	14.251			
	EFHRMP 6	0.645	0.878	11.455			
	EFHRMP 7	0.632	0.869	12.360			
	EFHRMP 8	0.654	0.836	14.714			
	EFHRMP 9	0.671	0.841	12.072			
	EFHRMP 10	0.663	0.806	11.502			
	EFHRMP 11	0.688	0.860	14.342			
	EFHRMP 12	0.674	0.841	13.220			
	EFHRMP 13	0.622	0.861	12.437			
	EFHRMP 14	0.635	0.836	11.901			
	EFHRMP 15	0.663	0.840	10.523			
	EFHRMP 16	0.647	0.823	12.051			
	EFHRMP 17	0.690	0.871	10.534			

	EFHRMP 18	0.676	0.841	12.070			
	EFHRMP 19	0.604	0.804	10.984			
Eco-performance (Henri & Journeault, 2010)	EP1	0.618	0.846	12.124	0.93	0.992	0.783
	EP2	0.607	0.831	10.908			
	EP3	0.623	0.871	11.412			
	EP4	0.654	0.864	14.021			
	EP5	0.625	0.875	12.360			
	EP6	0.664	0.867	11.450			
	EP7	0.612	0.873	12.542			
	EP 8	0.681	0.833	13.112			
	EP 9	0.670	0.887	10.870			
	EP10	0.669	0.890	12.212			
	EP11	0.616	0.811	11.520			
	EP12	0.608	0.840	11.527			
	EP13	0.677	0.808	10.442			
	EP14	0.669	0.851	14.256			
	EP15	0.610	0.881	14.210			
Stakeholder Engagement Marquardt (1996)	SE 1	0.636	0.792	14.844	0.870	0.878	0.780
	SE 2	0.721	0.801	15.102			
	SE 3	0.596	0.821	14.351			
	SE 4	0.588	0.730	15.053			
	SE 5	0.531	0.834	13.842			
	SE 6	0.655	0.734	12.543			
	SE 7	0.723	0.823	11.786			
	SE 8	0.592	0.678	15.346			
	SE 9	0.761	0.766	13.761			
	SE 10	0.633	0.869	14.788			

Model fit index (x^2/df) = 3.936; CFI =.891; p = 0.000; GFI =.981; IFI =.897; RMSEA =.074. Significance Level = ***p <.001; **p <.01*p <.05; CR(Construct Reliability).

4.2 Descriptive Statistics

The outcomes of statistical techniques and correlations between variables are shown in Table 3. According to descriptive data, more respondents on average reported having higher EP scores. The means for the responder sample for EFHRM practices are likewise higher. EFBS and SE had average levels of 3.6 and 3.5, respectively. Positive and substantial correlations between the dependent, mediator, moderator, and independent variables were validated by the correlations matrix. According to Table 3's data, there is a strong association between EFHRM practices and EP (r = .38, p = .001), EFHRM practices and EFBS (r = .36, p = .001), SE and EP (r = .23, p = .001), and EFBS and EP (r = .37, p = .001). It is possible to assess the mediating impact of these interactions.

Table 3: *Correlation Coefficient and Descriptive Statistics*

Construct	M	SD	CR	1	2	3	4	5	6
Enterprise Age	3.4	.81	-	-					
Enterprise Size	0.5	.79	-	.8	-				
Eco-friendly HRM Practices	3.8	.86	.85	.4	.08	**.78**			
Eco-friendly Business Strategies	3.6	.84	.92	.5	.09	.36**	**.83**		
Eco-performance	3.7	.93	.87	.7	.06	.38**	.37**	**.84**	
Stakeholder Engagement	3.5	.82	.86	.09	.06	.13*	.15*	.23**	**0.79**

CR = Composite Reliability; *p < .1 **p < .05; Diagonal number shows AVE = Average Variance Extracted

4.3 Hypotheses Testing

Table 4 displays the regression analysis's calculated coefficient values. The findings indicate that Eco-friendly PM positively impacts Regulatory Compliance (0.231), Resource Usage (0.352), stakeholder interaction (0.199) and productivity (0.352); Eco-friendly R and S impact positively Regulatory Compliance (0.236), Resource Usage (0.265), stakeholder interaction (0.374) and productivity (0.305), Eco-friendly Training also have positive effect on Regulatory Compliance (0.367), Resource Usage (0.361), stakeholder interaction (0.189) and productivity (0.294); Eco-friendly Involvement has positive effect of Regulatory Compliance (0.331), Resource Usage (0.388), stakeholder interaction (0.268) and productivity (0.218); and the positive effect of Eco-friendly Pay & Reward is measured as Regulatory Compliance (0.218), Resource Usage (0.311), stakeholder interaction (0.373) and productivity (0.172).

Eco-friendly Marketing is positively associated with Regulatory Compliance (0.235), Resource Usage (0.378), stakeholder interaction (0.167) and productivity (0.248); Eco-friendly R&D is positively linked with Regulatory Compliance (0.348), Resource Usage (0.247), stakeholder interaction (0.243) and productivity (0.243); Eco-friendly Finance associate positively Regulatory Compliance (0.311), Resource Usage (0.384), stakeholder interaction (0.371) and productivity (0.185); Eco-friendly Production positively associated with Regulatory Compliance (0.251), Resource Usage (0.345), stakeholder interaction (0.192) and productivity (0.254); and Eco-friendly Purchasing also has positive impacts on Regulatory Compliance (0.343), Resource Usage (0.279), stakeholder interaction (0.282) and productivity (0.283).

Additionally, a robustness analysis is used to test how the underlying regression coefficient estimations behave when the regression specifications has been altered by the addition or deletion of variables (Plumper & Neumayer, 2017). According to Esarey & Danneman (2015), when proxies are used in the regression model and the findings are plausible, structural validity is confirmed. Again for comparison regression in the present research, we

defined the key variables using certain proxies, and we discovered comparable findings and reduced variance, which assure robustness.

Table 4: *Linear Regression Model*

Constructs	Regulatory Compliance		Resource Usage		Stakeholder Interaction		Productivity	
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Ecofriendly PM	0.174*	0.231**	0.320***	0.352***	0.182*	0.199*	0.331***	0.352***
Ecofriendly R and S	0.320***	0.361***	0.245*	0.265**	0.367***	0.374***	0.258	0.305***
Ecofriendly Training	0.391***	0.367***	0.154*	.361***	0.178*	0.189*	0.281**	0.294**
Ecofriendly Involvement	0.354***	0.331***	0.362***	0.388**	0.254**	0.268**	0.198*	0.218**
Ecofriendly Pay & Reward	0.227**	0.218**	0.271**	0.311***	0.361***	0.373***	0.156*	0.172*
Ecofriendly Marketing	0.265*	0.235*	0.356***	0.378***	0.150*	0.167*	0.215**	0.248**
Eco-friendly R&D	0.347***	0.348***	0.185*	0.247**	0.221**	0.243**	0.209**	0.243**
Ecofriendly Finance	0.210**	0.311***	0.355***	0.384**	0.334***	0.371***	0.174*	0.185*
Ecofriendly Production	0.246**	0.251**	0.298*	0.345***	0.174*	0.192*	0.211**	0.254**
Ecofriendly Purchasing Control	0.314***	0.343***	0.261**	0.279**	0.265**	0.282**	0.092	0.283**
Enterprise Age	0.015	0.121*	0.006	0.008	0.002	0.005	0.132*	0.147*
Enterprise Size	.007	.009	.006	.011	.002	.005	.032	.054
R^2	.268	.282	.241	.178	.274	.242	.371	.356
Adjusted R^2	.243	.227	.178	.196	.226	.201	.239	.214
F	6.98	7.23	4.34	5.69	3.36	3.99	0.276	0.268

*$P < 0.1$; **$p < 0.05$; ***$p < 0.001$.

4.4 Structural Model

The results produced by SEM are shown as a direct path connecting EFHRM practices, EFBS, and Eco-performance. Fig. 2 displays these straight path and their coefficients. The whole first direct path, which is comprised of EFHRM practices and EFBS, has a favorable and substantial influence (0.31, $p < 0.01$), supporting research hypothesis 1.

The findings shown in Fig. 2 and Table 5 further supported the research hypothesis 2 by confirming the existence of a direct relationship between EFBS and Eco-performance and the fact that EFBS positively predicts Eco-performance (0.39, $p < 0.01$). Though the data only partially

supported hypothesis 3, they did somewhat (0.14, p > 0.01) corroborate the direct connection between EO and EP.

Additionally, Table 5 evaluates how EFBS mediates the relationship between EFHRM practices and EP. According to Hypothesis 1, EFHRM practices accurately forecasts EFBS (0.31, p < 0.01). The result demonstrates that EFHRM practices is the main factor in the development of EFBS. The coefficients showed a significant impact of EFHRM practices on the EFBS's eco-friendly purchasing (0.17, p < 0.01) dimensions, but only a marginal impact on the eco-friendly production (0. 0.28, p < 0.01), eco-friendly R&D (0.19, p < 0.01), eco-friendly finance (0.32, p < 0.01), and eco-friendly marketing (0.26, p < 0.01) dimensions. Moreover, the results demonstrate that EFHRM practices has a favorable and substantial indirect impact on EP (0.26, p < 0.01). Therefore, EFHRM practices favorably affects EP via EFBS. The findings in Table 5 further showed that EFHRM practices affects the EFBS, which enhances EP. Additionally, Table 5 shows the indirect impact of EFBS sub-dimensions on the connection between EFHRM practices and EP. These findings clearly demonstrate that EFHRM practices favorably impacts EP through EFBS. The findings indicate that the EP is indirectly impacted by the EFBS sub-dimensions of eco-friendly marketing (0.17), eco-friendly R&D (0.39), eco-friendly financing (0.28), eco-friendly production (0.36), and eco-friendly purchasing (0.13), Overall, the findings validated research hypothesis number four to the fullest extent by demonstrating the mediation impact of EFBS between the EFHRM practices and EP relationship.

Table 5: *Simplified Path Analysis: Direct & Indirect Effects*

Paths	Direct Effect	Indirect Effect
EFHRMP → Eco-friendly BS	0.31**	
EFHRMP → EP	0.14*	
Eco-friendly BS → EP	0.39**	
EFHRMP → Eco-friendly Marketing	0.26**	
EFHRMP → Eco-friendly R&D	0.19*	
EFHRMP → Eco-friendly Finance	0.32**	
EFHRMP → Eco-friendly Production	0.28**	
EFHRMP → Eco-friendly Purchasing	0.17*	
Eco-friendly BS → EP		0.39**
EFPM → EP		0.26**
Eco-friendly Marketing → EP		0.17*
Eco-friendly R&D → EP		0.39**
Eco-friendly Finance → EP		0.28**
Eco-friendly Production → EP		0.36**
Eco-friendly Purchasing → EP		0.13*
Control		
Enterprise Age	0.016	
Enterprise Size	0.088	

Note: *p < .1; **p < .05; ***p < .001

Fig 2. Results (Path Analysis)
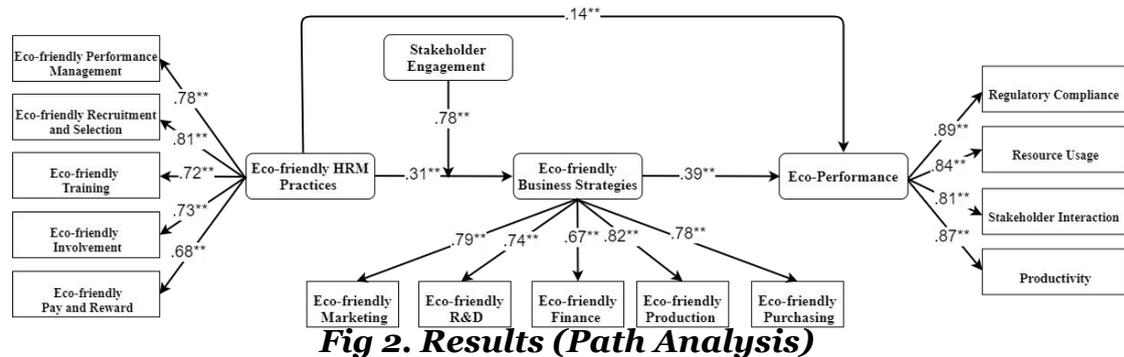
4.5   Moderation Testing

Hayes et al. (2017) proposed process for regression findings which is presented in Fig.3 and Table 6. In order to eliminate multi-collinearity, we develop interaction terms depending on mean-centralized moderator. The findings demonstrated a positive relationship between EFBS and eco-friendly HRM practices, SE, and their interaction (β=0.32, 0.28, 0.19 & $p<0.001$). The study's fifth hypothesis is accepted in light of these data, which show that the direct impact between eco-friendly HRM practices and EFBS increases as SE level is higher.

Table 6:   *Regression Results*

Moderating effect	STEP 1	STEP 2	STEP 3
Enterprise Age	0.035	0.019	0.006
Enterprise Size	0.029	0.022	-0.021
Eco-friendly HRM Practices		0.29	0.32[**]
Eco-friendly BS		0.24	0.28[**]
Eco-friendly HRM Practices × Stakeholder Engagement			0.19[**]
R^2	0.007	0.187	1.99
Adjusted R^2	0.004	0.152	0.181
ΔR^2	0.006	0.168	0.036
ΔF	3.251	71.56	22.18

Note: Eco-friendly BS = Eco-friendly Business Strategies
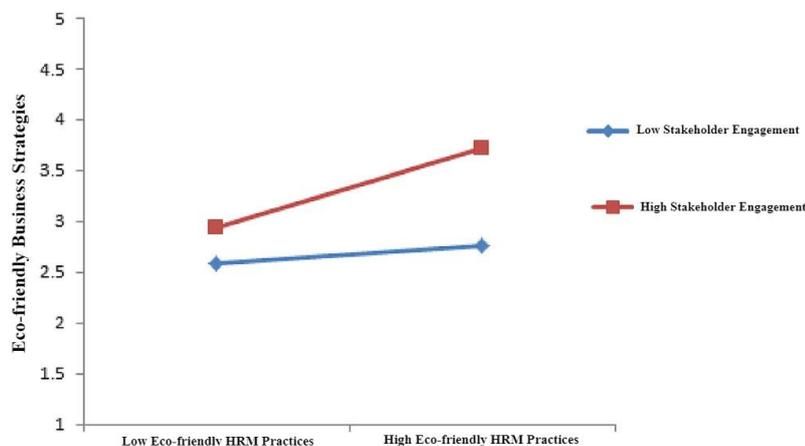
Fig. 3. Slope Analysis EFHRM practices × SE on EFBS

5.   DISCUSSION

This study seeks to provide management, practitioners and academics an in-depth understanding of how eco-friendly HRM practices contribute to the enhancement of the EP via EFBS and the strengthening the role of SE and EP. Moreover, the eco-friendly HRM practices was connected to EFBS, SE, and EP in the current investigation. Additionally, research has been done on the indirect impact of eco-friendly HRM practices on EP caused by EFBS. The goal of this study was to understand how eco-friendly HRM practices influences EP and how EFBS modifies this connection. The main motives of this research are: (i) the need to rectify inconsistencies between empirical and theoretical analyses of the interaction between eco-friendly HRM practices and EP; (ii) the requirement to understand how EFBS serves as a link between eco-friendly HRM practices and EP; and (iii) the possibility that the relationship between eco-friendly HRM practices and EFBS might be more robust in the presence SE as a moderator.

Five hypotheses have been proposed in the present research to investigate the relationship between eco-friendly HRM practices, EFBS, SE, and EP. The results of the investigation supported each of these hypotheses. The findings indicate that research Hypothesis 1 was justified the direct impact of eco-friendly HRM practices on EFBS. The conclusion is in line with the research evidences of Cheng, Yang & Sheu (2014); Sadiq, Adil, & Paul (2022) and it is indicated that eco-friendly HRM practices is the primary driver behind the formation of EFBS in light of these findings. The findings for H2 showed that EFBS positively predicted EP. The results shown that the implementation of EFBS may be used to achieve regulatory compliance, resource utilization, stakeholder interaction and productivity. We suggested a favorable correlation between eco-friendly HRM practices and EP for H3. The direct association between eco-friendly HRM practices and EP, however, only has a weak association according to research findings of H3. This data clearly indicates that eco-friendly HRM practices is not the only element that improves EP, which presents an opportunity to assess the mediation between both constructs. The research hypothesis 4 computed results support the idea that eco-friendly HRM practices predicts EP through EFBS. Organizations supported by eco-friendly HRM practices work to create EFBS that improves EP of the organizations. Regarding H5, the outcomes show that SE improves the bond between eco-friendly HRM practices and EFBS. SE contributes positively to the creation of EFBS.

5.1   Theoretical Contribution

The present investigation makes some significant contributions to the field of environmental sustainability research and its understanding. The research's strongest point is the way it emphasizes the broad overview of EFBS rather than just one specific EFBS measure. By establishing an EP theoretical model for manufacturing enterprises, especially those operating in developing nations like Pakistan, this research contributes to the existing body of knowledge. The EP-Model highlights how the EP is shaped and determined by integrated components such as eco-friendly HRM practices, EFBS, and SE.

The model explains how the integration of many components, such as eco-friendly HRM practices, EFBS, and SE, affects EP.

This finding contributes to the literature by providing an extensive FEBS importance. Additionally, the current research explains how eco-friendly HRM practices, and EFBS are interlinked. An organization will demonstrate greater attention for EP, when it has strong opinions about the value of the environment protection and is fully aware of the negative consequences that industrial operations have on the environment. As a result, the industrial sector needs to put substantial effort for formulating EFBS in order to enhance EP.

The investigation of eco-friendly HRM practices' role in introducing EFBS to the organization is the main strength of the study. EFBS are a crucial viewpoint of the organizations about negative impacts on the environment and rapidly and efficiently restructuring and reassigning essential resources to address environmental crises. The body of literature now available offers no proof of the contribution of EFBS to its causes and effects (Zhu et al., 2013). Therefore, in order to close this information gap, our research concentrates on eco-friendly HRM practices as a potential cause of EFBS and EP as a result of EFBS. Finally, this study examines SE's moderating role. According to the suggested model, eco-friendly HRM practices, SE, and a thorough use of EFBS have a significant impact on EP accomplishment.

5.2 Practical Implications

This study has important relevance for managers, policymakers, and manufacturing enterprises. First, this study contends that the industrial sector should prioritize EP rather than only achieving financial dreams and goals. Because, when organizations are more attracted to the creation of EFBS then EP be enhanced. Second, the results of this study imply that eco-friendly HRM practices has emerged as a distinct and strong predictor of EFBS. In order to achieve EFBS, management should prioritize eco-friendly HRM practices in daily operations. Therefore, management must concentrate on eco-friendly HRM practices that will assist them in understanding about stakeholders' expectations in order to include an eco-friendly component into business strategy and strengthen EP. As a result, this study advises companies to respond to external pressures in order to maintain their competitiveness and create sustainable corporate growth. Third, research suggests that organizations may use EFBS to improve EP and successfully address the expectations of stakeholders involved by concentrating on all relevant fields, including purchasing, marketing, R&D, finance, and production). EP may be accomplished in a more consistent way in this manner. Fourth, the study concentrates on the mediating role through which EFBS serves as a link between eco-friendly HRM practices and EP. According to the findings, management teams should collaborate with all key stakeholders in order to take an eco-friendly perspective into account and make the necessary adjustments to corporate strategy in order to accomplish EP. Although achieving EP is a challenging objective and eco-friendly HRM practices may influence manufacturing companies to protect the environment, it this

approach may work better if management focused more on EFBS compliance. Fifth, this research also concentrates on SE, which is important for creating business plans that are environmentally responsible (Valentinov & Chia, 2022). Any attempt to enhance EP is guaranteed to failure from the start unless the management are completely informed of their business context and the needs of stakeholder relationships. Therefore, in order to significantly increase EP indicators, management must have a thorough knowledge of their surroundings.

5.3 Conclusion

This research was carried out to see how eco-friendly HRM practices affected EFBS and EP. It has also been explored if EFBS has a mediating role in the connection between eco-friendly HRM practices and EP. Additionally, in the current investigation, the moderating effect of SE on the link between eco-friendly HRM practices and EFBS has also been taken into account. The results showed that management' inclination toward the natural surroundings is important for the creation of environmental practices, which are required for the preservation of the environment. By implementing eco-friendly strategies that result in a noticeable improvement in their eco-performance. The eco-friendly HRM practices and EP, on the other side, are bridged by environmental protection initiatives. The intensity of the association between eco-friendly HRM practices and EFBS is also significantly influenced by senior management's environmental consciousness.

References

Abbas, J. (2020). Impact of total quality management on corporate green performance through the mediating role of corporate social responsibility. Journal of Cleaner Production, 242, 118458.

Ahmad, S. (2015). Green human resource management: Policies and practices. Cogent business & management, 2(1), 1030817.

Acuti, D., Bellucci, M., & Manetti, G. (2020). Company disclosures concerning the resilience of cities from the Sustainable Development Goals (SDGs) perspective. Cities, 99, 102608.

Afshan, S., & Yaqoob, T. (2022). The potency of eco-innovation, natural resource and financial development on ecological footprint: a quantile-

ARDL-based evidence from China. Environmental Science and Pollution Research, 1-11.

Ahmad, S. (2015). Green human resource management: Policies and practices. Cogent business & management, 2(1), 1030817.

Ali, M., Puah, C. H., Ali, A., Raza, S. A., & Ayob, N. (2021). Green intellectual capital, green HRM and green social identity toward sustainable environment: a new integrated framework for Islamic banks. International Journal of Manpower.

Albort-Morant, G., & Ribeiro-Soriano, D. (2016). A bibliometric analysis of international impact of business incubators. Journal of Business Research, 69(5), 1775-1779.

Amankwah-Amoah, J. (2020). Stepping up and stepping out of COVID-19: New challenges for environmental sustainability policies in the global airline industry. Journal of Cleaner Production, 271, 123000.

Amran, A., Lee, S. P., & Devi, S. S. (2014). The influence of governance structure and strategic corporate social responsibility toward sustainability reporting quality. Business Strategy and the Environment, 23(4), 217-235.

Amoako, K. O., Amoako, I. O., Tuffour, J., & Marfo, E. O. (2021). Formal and informal sustainability reporting: an insight from a mining company's subsidiary in Ghana. Journal of Financial Reporting and Accounting.

Banerjee, S.B., 2001. Managerial perceptions of corporate environmentalism: Interpretations from industry and strategic implications for organizations. J. Manag. Stud. 38, 489-513.

Babakus, E., & Mangold, W. G. (1992). Adapting the SERVQUAL scale to hospital services: an empirical investigation. Health services research, 26(6), 767.

Barauskaite, G., & Streimikiene, D. (2021). Corporate social responsibility and financial performance of companies: The puzzle of concepts, definitions and assessment methods. Corporate Social Responsibility and Environmental Management, 28(1), 278-287.

Baumann-Pauly, D., Scherer, A. G., & Palazzo, G. (2016). Managing institutional complexity: A longitudinal study of legitimacy strategies at a sportswear brand company. Journal of Business Ethics, 137(1), 31-51.

Bellucci, M., Simoni, L., Acuti, D., & Manetti, G. (2019). Stakeholder engagement and dialogic accounting: Empirical evidence in sustainability reporting. Accounting, Auditing & Accountability Journal.

Bıcakcıoglu, N., 2018. Green business strategies of exporting manufacturing firms:antecedents, practices, and outcomes. J. Global Market. 31, 246e269.

Bhattacharyya, A. (2019). Corporate environmental performance evaluation: A cross-country appraisal. Journal of cleaner production, 237, 117607.

Cantele, S., & Zardini, A. (2018). Is sustainability a competitive advantage for small businesses? An empirical analysis of possible mediators in the

sustainability–financial performance relationship. Journal of cleaner production, 182, 166-176.

Cheng, C. C., Yang, C. L., & Sheu, C. (2014). The link between eco-innovation and business performance: A Taiwanese industry context. Journal of cleaner production, 64, 81-90.

Chen, Y. S., & Chang, C. H. (2013). Greenwash and green trust: The mediation effects of green consumer confusion and green perceived risk. Journal of business ethics, 114(3), 489-500.

Capps, C., Cassidy, C., Gravois, R., & Warner, J. (2019). Expanding the competitive profile matrix: introducing the production/operations management, marketing, human resource management, finance/accounting, research and development, and information systems competitive profile matrices. Journal of Business Strategies, 36(1), 59-69.

Cummins, R. A., & Gullone, E. (2000, March). Why we should not use 5-point Likert scales: The case for subjective quality of life measurement. In Proceedings, second international conference on quality of life in cities (Vol. 74, No. 2, pp. 74-93).

Chaudhary, R. (2020). Green Human Resource Management and Employee Green Behavior: An Empirical Analysis. Corporate Social Responsibility and Environmental Management, 27(2), 630–641.

Debenedetti, A., Philippe, D., Chaney, D., & Humphreys, A. (2021). Maintaining legitimacy in contested mature markets through discursive strategies: The case of corporate environmentalism in the French automotive industry. Industrial Marketing Management, 92, 332-343.

Dangelico, R. M., & Vocalelli, D. (2017). "Green Marketing": An analysis of definitions, strategy steps, and tools through a systematic review of the literature. Journal of Cleaner production, 165, 1263-1279.

Dixit, A.K., 2020. Protection of environment for sustainable development. Stu. Indian.Place. Names 40, 1369-1380.

El-Kassar, A. N., & Singh, S. K. (2019). Green innovation and organizational performance: The influence of big data and the moderating role of management commitment and HR practices. Technological Forecasting and Social Change, 144(November), 483–498.

Fornell, C., Larcker, D.F., 1981. Evaluating structural equation models with unobservable

variables and measurement error. J. Mar. Res. 18, 39-50.

Freeman, R.E., 1984. Strategic Management: A Stakeholder Approach. Pitman, Boston.

Guerci, M., Longoni, A., & Luzzini, D. (2016). Translating stakeholder pressures into environmental performance – the mediating role of green HRM practices. International Journal of Human Resource Management, 27(2), 262–289.

Ghouri, A. M., Mani, V., Khan, M. R., Khan, N. R., & Srivastava, A. P. (2020). Enhancing business performance through green human resource

management practices: an empirical evidence from Malaysian manufacturing industry. International Journal of productivity and Performance management.

Glass, R.L., 1997. Pilot studies: what, why and how. J. Syst. Software 36, 85-97.

Gandolfo, A., & Lupi, L. (2021). Circular economy, the transition of an incumbent focal firm: How to successfully reconcile environmental and economic sustainability?. Business Strategy and the Environment, 30(7), 3297-3308.

Giacomarra, M., Crescimanno, M., Sakka, G., & Galati, A. (2019). Stakeholder engagement toward value co-creation in the F&B packaging industry. EuroMed Journal of Business.

Govindan, K. (2018). Sustainable consumption and production in the food supply chain: A conceptual framework. International Journal of Production Economics, 195, 419-431.

Hsu, C.C., Tan, K.C., Mohamad Zailani, S.H., 2016. Strategic orientations, sustainable supply chain initiatives, and reverse logistics: empirical evidence from an emerging market. Int. J. Oper. Prod. Manag. 36, 86-110.

Jackson, A. L., Inger, R., Parnell, A. C., & Bearhop, S. (2011). Comparing isotopic niche widths among and within communities: SIBER–Stable Isotope Bayesian Ellipses in R. Journal of Animal Ecology, 80(3), 595-602.

Javeed, S.A., Latief, R., Lefen, L., 2020. An analysis of relationship between environmental regulations and firm performance with moderating effects of product market competition: empirical evidence from Pakistan. J. Clean. Prod. 254, 120197.

Hayes, A.F., Montoya, A.K., Rockwood, N.J., 2017. The analysis of mechanisms and theircontingencies: PROCESS versus structural equation modeling. Australas. Mark. J. 25, 76-81.

Henri, J.F., Journeault, M., 2010. Eco-control: the influence of management control systems on environmental and economic performance. Account. Org. Soc. 35,63-80.

Journeault, M., Perron, A., & Vallières, L. (2021). The collaborative roles of stakeholders in supporting the adoption of sustainability in SMEs. Journal of environmental management, 287, 112349.

Kim, Y. J., Kim, W. G., Choi, H. M., & Phetvaroon, K. (2019). The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. International Journal of Hospitality Management, 76, 83-93.

Kim, Y. J., Kim, W. G., Choi, H. M., & Phetvaroon, K. (2019). The effect of green human resource management on hotel employees' eco-friendly behavior and environmental performance. International Journal of Hospitality Management, 76, 83-93.

Leonidou, L. C., Christodoulides, P., Kyrgidou, L. P., & Palihawadana, D. (2017). Internal drivers and performance consequences of small firm green business strategy: The moderating role of external

forces. Journal of business ethics, 140(3), 585-606.

Lin, Y. H., & Chen, Y. S. (2017). Determinants of green competitive advantage: the roles of green knowledge sharing, green dynamic capabilities, and green service innovation. Quality and Quantity, 51(4), 1663–1685.

Leonidou, L.C., Fotiadis, T.A., Christodoulides, P., Spyropoulou, S., Katsikeas, C.S., 2015. Environmentally friendly export business strategy: its determinants and effects on competitive advantage and performance. Int. Bus. Rev. 24, 798-811.

Lin, W. L., Ho, J. A., Sambasivan, M., Yip, N., & Mohamed, A. B. (2021). Influence of green innovation strategy on brand value: The role of marketing capability and R&D intensity. Technological Forecasting and Social Change, 171, 120946.

Luthra, S., Kumar, A., Zavadskas, E. K., Mangla, S. K., & Garza-Reyes, J. A. (2020). Industry 4.0 as an enabler of sustainability diffusion in supply chain: an analysis of influential strength of drivers in an emerging economy. International Journal of Production Research, 58(5), 1505-1521.

Maak, T. (2007). Responsible leadership, stakeholder engagement, and the emergence of social capital. Journal of business ethics, 74(4), 329-343.

Majid, A., Yasir, M., Yasir, M., Javed, A., (2019). Nexus of institutional pressures, environmentally friendly business strategies, and environmental performance. Corp. Soc. Responsib. Environ. Manag. 1-11.

Majid, A., Yasir, M., Yasir, M., & Javed, A. (2020). Nexus of institutional pressures, environmentally friendly business strategies, and environmental performance. Corporate Social Responsibility and Environmental Management, 27(2), 706-716.

Mishra, P. (2017). Green human resource management: A framework for sustainable organizational development in an emerging economy. International Journal of Organizational Analysis.

Masri, H. A., & Jaaron, A. A. (2017). Assessing green human resources management practices in Palestinian manufacturing context: An empirical study. Journal of cleaner production, 143, 474-489.

Moon, H. C., & Parc, J. (2019). Shifting corporate social responsibility to corporate social opportunity through creating shared value. Strategic Change, 28(2), 115-122.

Marquardt, M. J. (1996). Building the learning organization: A systems approach to quantum improvement and global success. New York, NY: McGraw-Hill.

Nisar, Q. A., Haider, S., Ali, F., Jamshed, S., Ryu, K., & Gill, S. S. (2021). Green human resource management practices and environmental performance in Malaysian green hotels: The role of green intellectual capital and pro-environmental behavior. Journal of Cleaner Production, 311, 127504.

Naz, S., Jamshed, S., Nisar, Q. A., & Nasir, N. (2021). Green HRM,

psychological green climate and pro-environmental behaviors: An efficacious drive towards environmental performance in China. Current Psychology, 1-16.

Nikolaou, I. E. (2019). A framework to explicate the relationship between CSER and financial performance: An intellectual capital-based approach and knowledge-based view of firm. Journal of the Knowledge Economy, 10(4), 1427-1446.

Nguyen, N. P., & Adomako, S. (2022). Stakeholder pressure for eco-friendly practices, international orientation, and eco-innovation: A study of small and medium-sized enterprises in Vietnam. Corporate Social Responsibility and Environmental Management, 29(1), 79-88.

Ottman, J., 2017. The New Rules of Green Marketing: Strategies, Tools, and Inspiration for Sustainable Branding. Routledge.

Paillé, P., Chen, Y., Boiral, O., & Jin, J. (2014). The impact of human resource management on environmental performance: An employee-level study. Journal of Business Ethics, 121(3), 451-466.

Plumper, T., Neumayer, E., 2017. Robustness Tests and Statistical Inference. Roscoe, S., Subramanian, N., Jabbour, C.J., Chong, T., 2019. Green human resource management and the enablers of green organizational culture: enhancing a firm's environmental performance for sustainable development. Bus. Strat. Environ. 28, 737-749.

Prajogo, D., Tang, A. K., & Lai, K. H. (2012). Do firms get what they want from ISO 14001 adoption?: an Australian perspective. Journal of Cleaner Production, 33, 117-126.

Plichta, J. (2019). The co-management and stakeholders theory as a useful approach to manage the problem of overtourism in historical cities— illustrated with an example of Krakow. International Journal of Tourism Cities.

Raza, S. A., & Khan, K. A. (2022). Impact of green human resource practices on hotel environmental performance: the moderating effect of environmental knowledge and individual green values. International Journal of Contemporary Hospitality Management.

Rui, Z., & Lu, Y. (2021). Stakeholder pressure, corporate environmental ethics and green innovation. Asian Journal of Technology Innovation, 29(1), 70-86.

Rehman, S. U., Kraus, S., Shah, S. A., Khanin, D., & Mahto, R. V. (2020). Analyzing the relationship between green innovation and environmental performance in large manufacturing firms. Technological Forecasting and Social Change, xxxx, 120481.

Ren, S., Tang, G., & E. Jackson, S. (2018). Green human resource management research in emergence: A review and future directions. Asia Pacific Journal of Management, 35(3), 769–803.

Ren, S., He, D., Zhang, T., & Chen, X. (2019). Symbolic reactions or substantive pro-environmental behaviour? An empirical study of corporate environmental performance under the government's environmental subsidy scheme. Business Strategy and the

Environment, 28(6), 1148-1165.

Rossi, F. D., Xavier, M. G., De Rose, C. A., Calheiros, R. N., & Buyya, R. (2017). E-eco: Performance-aware energy-efficient cloud data center orchestration. Journal of Network and Computer Applications, 78, 83-96.

Ramus, C. A., & Steger, U. (2000). The roles of supervisory support behaviors and environmental policy in employee "Ecoinitiatives" at leading-edge European companies. Academy of Management journal, 43(4), 605-626.

Ruiz, S., Romero, S., & Fernandez-Feijoo, B. (2021). Stakeholder engagement is evolving: Do investors play a main role?. Business Strategy and the Environment, 30(2), 1105-1120.

Saeed, B. Bin, Afsar, B., Hafeez, S., Khan, I., Tahir, M., & Afridi, M. A. (2019). Promoting employee's proenvironmental behavior through green human resource management practices. Corporate Social Responsibility and Environmental Management, 26(2), 424–438.

Sadiq, M., Adil, M., & Paul, J. (2022). Eco-friendly hotel stay and environmental attitude: A value-attitude-behaviour perspective. International Journal of Hospitality Management, 100,103094.

Samuel, C., & Siebeneck, L. K. (2019). Roles revealed: An examination of the adopted roles of emergency managers in hazard mitigation planning and strategy implementation. International Journal of Disaster Risk Reduction, 39, 101145.

Sarkar, A., Qian, L., Peau, A. K., & Shahriar, S. (2021). Modeling drivers for successful adoption of green business: an interpretive structural modeling approach. Environmental Science and Pollution Research, 28(1), 1077-1096.

Singh, S. K., Chen, J., Del Giudice, M., & El-Kassar, A. N. (2019). Environmental ethics, environmental performance, and competitive advantage: Role of environmental training. Technological Forecasting and Social Change, 146, 203-211.

Singh, S. K., Giudice, M. Del, Chierici, R., & Graziano, D. (2020). Green innovation and environmental performance: The role of green transformational leadership and green human resource management. Technological Forecasting and Social Change, 150(September 2019), 119762.

Sharma, N. K., Govindan, K., Lai, K. K., Chen, W. K., & Kumar, V. (2021). The transition from linear economy to circular economy for sustainability among SMEs: A study on prospects, impediments, and prerequisites. Business Strategy and the Environment, 30(4), 1803-1822.

Shujja, S., Malik, F., Khan, N., 2017. Translation and cross-cultural validation of children rejection sensitivity questionnaire (CRSC) for Pakistani adolescents. Pak. J. Psychol. Res. 32, 297-315.

Shaukat, M. B., Latif, K. F., Sajjad, A., & Eweje, G. (2022). Revisiting the

relationship between sustainable project management and project success: The moderating role of stakeholder engagement and team building. Sustainable Development, 30(1), 58-75.

Stocker, F., de Arruda, M. P., de Mascena, K. M., & Boaventura, J. M. (2020). Stakeholder engagement in sustainability reporting: a classification model. Corporate Social Responsibility and Environmental Management, 27(5), 2071-2080.

Tang, G., Chen, Y., Jiang, Y., Paillé, P., & Jia, J. (2018). Green human resource management practices: scale development and validity. Asia Pacific Journal of Human Resources, 56(1), 31-55.

Tang, G., Chen, Y., Jiang, Y., Paillé, P., & Jia, J. (2018). Green human resource management practices: scale development and validity. Asia Pacific Journal of Human Resources, 56(1), 31–55.

Torelli, R., Balluchi, F., & Furlotti, K. (2020). The materiality assessment and stakeholder engagement: A content analysis of sustainability reports. Corporate Social Responsibility and Environmental Management, 27(2), 470-484.

Trumpp, C., & Guenther, T. (2017). Too little or too much? Exploring U-shaped relationships between corporate environmental performance and corporate financial performance. Business Strategy and the Environment, 26(1), 49-68.

Ullah, Z., Wu, W., Wang, X. H., Pavase, T. R., Shah, S. B. H., & Pervez, R. (2021). Implementation of a marine spatial planning approach in Pakistan: An analysis of the benefits of an integrated approach to coastal and marine management. Ocean & Coastal Management, 205, 105545.

UNESCO. (2019). UNESCO Pakistan Country Strategic Document 2018-2022. https://en.unesco.org/sites/default/files/ucsd.pdf

Valentinov, V., & Chia, R. (2022). Stakeholder theory: A process-ontological perspective. Business Ethics, the Environment & Responsibility.

Wang, Y., & Yang, Y. (2020). Analyzing the green innovation practices based on sustainability performance indicators: a Chinese manufacturing industry case. Environmental Science and Pollution Research, 1998.

Wang, Z., & Wang, N. (2012). Knowledge sharing, innovation and firm performance. Expert Systems with Applications, 39(10), 8899–8908.

Williams, L.J., Brown, B.K., 1994. Method variance in organizational behavior and human resources research: effects on correlations, path coefficients, and hypothesis testing. Organ. Behav. Hum. Decis. Process. 57, 185-209.

Watson, R., Wilson, H. N., Smart, P., & Macdonald, E. K. (2018). Harnessing difference: a capability-based framework for stakeholder engagement in environmental innovation. Journal of Product Innovation Management, 35(2), 254-279.

Wolf, E.J., Harrington, K.M., Clark, S.L., Miller, M.W., 2013. Sample size requirements for structural equation models: an evaluation of power, bias, and solution propriety. Educ. Psychol. Meas. 73, 913-934.

Yong, J. Y., Yusliza, M. Y., Ramayah, T., & Fawehinmi, O. (2019). Nexus between green intellectual capital and green human resource management. Journal of Cleaner Production, 215, 364–374.

Yong, J. Y., Yusliza, M. Y., Jabbour, C. J. C., & Ahmad, N. H. (2020). Exploratory cases on the interplay between green human resource management and advanced green manufacturing in light of the Ability-Motivation-Opportunity theory. Journal of Management Development, 39(1), 31-49.

Yong, J. Y., Yusliza, M. Y., Ramayah, T., Chiappetta Jabbour, C. J., Sehnem, S., & Mani, V. (2020). Pathways towards sustainability in manufacturing organizations: Empirical evidence on the role of green human resource management. Business Strategy and the Environment, 29(1), 212-228.

Zaid, A. A., Jaaron, A. A. M., & Talib Bon, A. (2018). The impact of green human resource management and green supply chain management practices on sustainable performance: An empirical study. Journal of Cleaner Production, 204, 965–979.

Zaidi, S. A. H., Mirza, F. M., Hou, F., & Ashraf, R. U. (2019). Addressing the sustainable development through sustainable procurement: What factors resist the implementation of sustainable procurement in Pakistan?. Socio-Economic Planning Sciences, 68, 100671.

Zhu, Q., Sarkis, J., Lai, K.H., 2013. Institutional-based antecedents and performance outcomes of internal and external green supply chain management practices.J. Purch. Supply Manag. 19, 106-117