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CONTENTS

Green Human Resource Management and Project Citizenship in the Construction Industry: Mediating Role of Quality of Work Life and Green Employee Empowerment

Muhammad Khalid Tasleem* Saif Ul Haq** Muhammad Shakeel Aslam***
Muhammad Faisal Aziz****

Abstract

Considering the behavioral aspects of project-based organizations, this study aims to measure the impact of Green human resource management (GHRM) on project citizenship behavior in the construction industry of Punjab, Pakistan. Another overarching objective of this paper is to investigate the impact of quality of work life and green employee empowerment on project citizenship behavior. Following the deductive approach and positivism research philosophy, data was collected from 217 professionals working in the construction sector of Punjab, Pakistan. SPSS and Amos were used to analyze the data. Analysis of moderation and mediation is performed by Process Macro version 23 by Hayes. The findings of this paper reveal that GHRM practices positively influence project citizenship behavior whereas green employee empowerment and quality of work life partially mediate the relationship between GHRM and project citizenship behavior. Moreover, individuals' green value moderates the effects of green employee empowerment and quality of work life on project citizenship behavior. This study gives insight to the project manager as to the fact that implementing certain GHRM procedures along with empowering the project team and providing quality work life to the team having individual green values will motivate team members to perform citizenship behavior.

Keywords: Green human resource management; quality of work life; individual green values; project citizenship behavior; green employee empowerment.

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1. Introduction

The construction sector plays a pertinent role in the development and growth of a country and in achieving the objectives of developing a society (Aman et al., 2022; Lopes, 2012). In developing countries like Pakistan, the construction sector plays a pivotal role in providing public facilities, infrastructure, and homes for financial development in advancing the national economy entirely (Ayeni & Popoola, 2019), where the engineers of the construction sector have to do extra duties on the weekend and the companies expect their employees to depend on each other to complete particular tasks swiftly (Bakker, 2010; Lindgren & Packendorff, 2006; Yang et al., 2022). Project Citizenship Behavior is a multidisciplinary variable that comprises five diverse but connected behaviors i.e. helping behavior, project loyalty, project compliance, individual initiative, and relationship maintenance (Braun et al., 2013).

Depending upon the urgency and nature of the work, usually, the schedules on the construction projects are quite short and unachievable, therefore, the Project Managers have to put in extra effort to achieve those targets, be it the scope, quality, or timeliness. It, therefore, requires project managers to work harder and get involved in an extra role/behavior which is called citizenship behavior and this behavior is beyond contractual obligations similar to written Job descriptions and signed contracts (Braun et al., 2013; Zhao et al., 2023). It should be noted that an employee, with a better quality of work life, would be more persuaded to perform citizenship behaviors. Green Human Resource Management (HRM) procedures have brought huge benefits to the organization as they helped the employees to achieve the organization's sustainable goals as well as the Individual's sustainable goals (Cherian & Jacob, 2012). In addition, empowerment is key to enhancing an employee's effectiveness and efficiency, as well as empowerment also increases employees' motivation toward achieving their goals (Jackson et al., 2014; Matthews et al., 2003). This empowerment, when practiced in performing green tasks, is termed green employee empowerment.

It is considered that conducting citizenship behavior on the job is not part of an employee's formal job obligations, but it is more regarded as the effective functioning of the organization. It relates more to choice and discretion, such as the attitude of the employees, conscientiousness, good manners, helpfulness, and cooperation (Sh & Sh, 2014). Research has highlighted that the empowerment of employees improves their motivation to perform job-related work efficaciously and effectively (Jackson et al., 2014; Marta et al., 2021; Putra et al., 2024). It has also been established through research work that employee empowerment towards activities increases their devotion to trust and efficiency (Afram et al., 2022; Akter et al., 2023; Tariq et al., 2016). Fan et al. (2023) also note practical obstacles to empowerment, such as insufficient top management support and lack of awareness. Therefore, while the benefits of employee empowerment are clear, those lead to higher performance and better employee engagement. The green goals include steps which include but are not limited to

double side photocopies, recycling of the old furniture of offices, and the use of energy-efficient appliances. On a project, sustainable goals can be achieved by an organization through green employee empowerment, for example, project managers offer support and progressive responses to empower employees, which may help them to execute tasks valuing a green environment thereby, saving project budget (Daily & Huang, 2001; Tariq et al., 2016). A positive relationship exists between GHRM and quality of work life (Akpa et al., 2022). Likewise, prior research has indicated that GHRM applications influence the lifestyle of employees and organizations can enhance the team's environmental performance by concentrating on GHRM practices (Naqvi & Siddiqui, 2019).

Previous research has established that individual green value strengthens the association between green employee empowerment and citizenship behavior of employees, and the relationship between green human resource management, individual green value and green employee empowerment has already been explored (Hameed et al., 2020). Consequently, from the above discussion, it can be argued that prior researchers have explored constructs like GHRM, project citizenship behavior, quality of work life and individual green values separately. However, there is still a need to investigate the impact of GHRM on project citizenship behavior through different mechanisms like green employee empowerment and quality of work life. Moreover, there is a link between green employee empowerment and OCB towards the environment (OCBE) moderated by individual green value (Hameed et al., 2020), however, the moderating role of individual green value on the relationship between green employee empowerment & project citizenship behavior, quality of work life & project citizenship behavior has not been studied yet. In a vibrant project environment, individuals must put in all efforts, and do whatever it takes to successfully execute the project (Al-Kwifi et al., 2023; Frame, 2003).

It is also a considerable fact that in a developing country like Pakistan, resources are scarce and development projects are always in high demand, therefore, to fulfill the scarcity of resources, especially human resources, the 'on-project resources' have to observe extra role, however, the extent of such role and its effectiveness on the project has not yet been studied. It is further added that the United Nations releases a yearly report emphasizing the construction Industry to adopt green practices for the sustainability of the environment. However, Pakistan being a developing country is far behind in using state-of-the-art technology (Aslam et al., 2023) and following green practices in the construction sector. So, the current study will contribute to reduce the gap in the existing literature.

The current research enhances our understanding of the phenomenon in the project management context by exploring the nuances relationships of GRHM, project citizenship, work-life quality and green employee empowerment. The findings are also of great importance because it is drawn from the specific context of Pakistan wherein green practices are not yet fully implemented. Such findings provide a delicate comparison between developed and

developing countries in terms of GHRM practices and their outcomes in the construction industry. These findings extend the existing knowledge base on this phenomenon with empirical evidence and theoretical interpretation specific to the Pakistani context. The later text reviews the existing literature are also postulated to develop and test the hypotheses of this research.

2. Hypotheses Development

2.1 GHRM and Project Citizenship Behavior

Conventionally, the practices of human resource management are based on the performance of the person and performance is dependent on ability, motivation, and opportunity. This concept sets the basis for the Ability-Motivation-Opportunity (AMO) theory (Appelbaum, 2000).As the performance of the employee can be influenced by the behavior and vice versa and following the concept of AMO theory, it can be said that human resource management practices can affect the behavior of the employee. Therefore, HR policies can induce citizenship behavior in employees. Keeping the same context, we can investigate the application of AMO on the connection between GHRM and project citizenship behaviors (Boiral, 2009). Citizenship behavior being a dimension of extra-role behaviors is gladly displayed by the employees at the workplace as the ethical members of the institution (Shin, 2012). Team members working on a project or in a permanent organization who identify fairness and impartiality in jobs and institutional practices are more committed and exhibit citizenship behavior (Lau et al., 2016).

In the same fashion, it is also reported by earlier studies that organizational commitment has a positive relationship with citizenship behavior (Donglong et al., 2020; Lau et al., 2016). Research has found that by adopting better environmental standards organizations may have higher labor productivity (Delmas & Pekovic, 2013). This was also strengthened by the outcomes of a study where the GHRM values implementation increased both teams and the company's productivity and sustainability (Bahuguna et al., 2023; Cherian & Jacob, 2012; Faisal, 2023). It is considered that organizations/projects demonstrating best HR practices attract & keep a devoted workforce with the insight of fairness & fulfillment at the workplace showing a great deal of citizenship behaviors (Mousa & Othman, 2020; Zayas-Ortiz et al., 2015). Based on the above, it is proposed that:

H1: GHRM positively affects project citizenship behavior.

2.2 Green Human Resource Management, Green Employee Empowerment, and Project Citizenship Behavior

Green employee empowerment is crucial for an organization to achieve sustainable

goals (Tariq et al., 2016). Employee empowerment plays a vital role when the employees are allowed to implement self-sufficiency to recognize and efficiently resolve troublesome behaviors in an activity (Kim & Beehr, 2017). Currently, green human resources practices have three main components: (1) training of employees to consider green abilities in them; (2) green performance management through employees' motivation; (3) and employee involvement to provide green opportunities (Guerci et al., 2016; Masri & Jaaron, 2017; Pinzone et al., 2016). It has also been indicated that organizations working on a project can contribute towards sustainability through HRM (Madero-Gómez et al., 2023; Renwick et al., 2013). Therefore, it is assumed that one of the many aspects of GHRM is to empower the employees to make green decisions themselves as until the sustainable goals are not realized at the individual levels they cannot be achieved (Shaukat et al., 2023).

While considering green behaviors we need to consider that it is voluntary behavior, therefore, each employee has his sole discretion to demonstrate such behavior (Tang et al., 2023). Furthermore, it has been studied that citizenship behaviors may also involve feelings internal and external of the organization (Lamm et al., 2013), which may assist the organization in accomplishing the objectives of the project (Norton et al., 2014; Ramos & Ellitan, 2023). Organizations can also empower their employees by directing green measures such as the ban on wasting toxic water in adjacent water resources or directing teams to carefully manage dangerous materials and apply any other similar GHRM practices (Robertson & Barling, 2013). It should be noted that most of the time, positive emotions such as happiness and joy influence citizenship behavior. Moreover, it has been contended that when there is a conducive environment in the organization that promotes the green initiative, an employee feels empowered, thus, showing citizenship behavior toward the project (Faisal, 2023; Ramus & Steger, 2000). Based on the above, it is hereby, theorized:

H2: Green employee empowerment mediates the relationship between GHRM and project citizenship behavior.

2.3 Green Human Resource Management, Quality of Work Life, and Project Citizenship Behavior

GHRM gets involved when a company adopts HR strategies, programs, practices, and guidelines that deliver the organization's environmentally friendly effect and sustainability procedures on a project (Malik et al., 2021). Researchers have introduced a broad categorization of GHRM practices which starts with the onboarding of an employee on the project and continues throughout the entire life of the employee (Bahuguna et al., 2023; Renwick et al., 2013). Singh and Nath (2020) emphasized the positive influence of green HRM on employee job satisfaction and organizational social evaluation, as well as its role in promoting environmentally friendly behaviors. To be environmentally, efficient, and workable at a time is feasible by implementing green practices. It has been found that

adaptable working arrangements are useful to increase work-life quality among employees (Ahmad et al., 2022). Green work-life quality is affected by GHRM which can green the team at the workplace (Hameed et al., 2020; Muster & Schrader, 2011; Papademetriou et al., 2023). In research work, it has been stated that GHRM helps a team to know the workout of natural resources and create support for a friendly environment (Birbirsa & Worku, 2022).

It has been reported that there is a significant relationship between quality of work life and organizational citizenship behavior (Anriyani et al., 2023). Employees who show voluntary behavior and have helping behavior towards each other tend to have good performance (Mallick et al., 2014). However, the absence of quality of work life on a project may result in several issues which include but are not limited to absenteeism, stress, conflict, and contributing lack of performing citizenship behavior (Heriyadi et al., 2020). Therefore, to cater to such issues, project managers need to explore other factors that can promote positive citizenship behavior among employees and improve the quality of work life. It not only induces work commitment but also promotes collaboration among the teams through communication and reduces errors on the project (Organ & Ryan, 1995). The findings indicate a perception of quality of work life has a significant positive correlation with organizational citizenship behavior. From above it may also be perceived that:

H3: Quality of work life mediates the relationship between GHRM and project citizenship behavior.

2.4 Moderating Role of Individual Green Values

Previous research works have established that there is a positive effect of values, a person carries, on his performance on the project (Chou, 2014; Raza & Farrukh, 2023). Researchers have also strengthened this argument that a person with values inclined towards the environment is more likely to demonstrate voluntary behaviors that support environment conversation (Andersson et al., 2005), and the same goes for the project based office environment when such people became part of the team, they not only exhibit such behavior but can act as a catalyst to induce this behavior in other (Chou, 2014). Similarly, in research work, it has been claimed that green values are likely to affect an individual's extra-role behaviors and if individual and organizational green values match each other, effective environmental management emerges (Cheema et al., 2020). A shared ideology, between an individual and the organization, states that there is a close relationship between the person's values and the values of the organization in which it works. If both values are aligned, it not only improves the performance of the individuals by promoting work-related habits but also outshines the organization in the market (Paarlberg & Perry, 2007). This alignment improves the commitment of the employees and ultimately brings better results for the organization (Cohen & Liu, 2011). In a recent study, it has been theorized that individuals who realize their organization's participation in environment-related social activities are more associated with

their organization and demonstrate environment-related citizenship behaviors (Cheema et al., 2020).

Previous researchers have also highlighted that individual values affect employees' citizenship behavior (Ahmad et al., 2022; Hitlin & Piliavin, 2004; Ramus & Killmer, 2007). However, there are some inconsistent results in some of the research iterating the culture and environment of the project or organization in which studies are being conducted (Boiral, 2009; Khan et al., 2020; Lamm et al., 2013). Hence, this paves the way for the coming researcher to study the distinctive aspects of employees' citizenship behavior. Therefore, we consider that the relationship between green employee empowerment and project citizenship behavior as well as quality of work life and employees' project citizenship behavior may be moderated by individual green value. It is also argued that if the organization creates such an environment at the workplace through quality of work life and empowerment, it will get aligned among organizational values and individual values. This may provide a way forward for employees to present a more discretionary behavior i.e. project citizenship behavior. Therefore, we suppose that:

H4: Individual green value moderates the relationship between green employee empowerment and project citizenship behavior.

H5: Individual green value moderates the relationship between quality of work life and project citizenship behavior.

Research Model

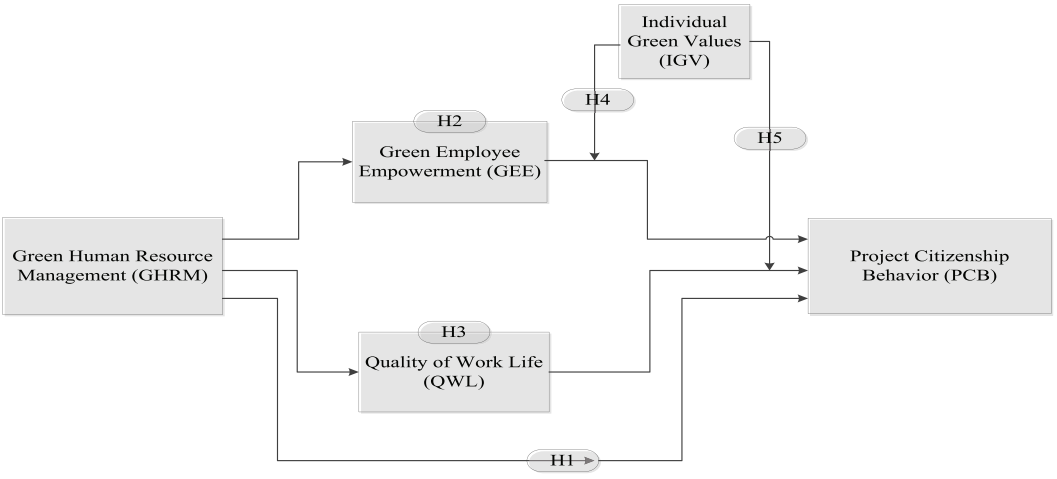

Figure 1: Displays the research model and established hypothesis.

3. Research Methodology

This is an empirical study conducted through a survey method. This study has followed a deductive approach as it narrows down from general to specific and this approach is applied when the study in hand is quantitative. The research is questionnaire-based and a systematic random sampling technique was used to choose companies for data collection. Systematic random sampling simplifies the process of selecting samples and ensures an even distribution across the population, enhancing representativeness and reducing bias (Madow, 1949). This method is simple to implement and efficient for large-scale surveys, saving time and resources.

3.1 Questionnaire Development

The questionnaire used in this research is adapted from different sources to collect data for the variables of the study at hand. To measure GHRM, this study has adapted 06 items from the scale developed by Dumont et al. (2017). Green employee empowerment was measured through a 7-item scale developed by Spreitzer (1995). To measure the quality of work life, 12 items were adapted from the scale developed by Dex and Bond (2005). To measure individual green values this study has adopted 3 items scale developed by (Chou, 2014). Project citizenship behavior was measured by using a 12-item scale developed by Braun et al. (2013). A five-point Likert-type scale i.e. 1= Strongly Disagree, 2= Disagree 3= Neutral, 4= Agree, and 5= Strongly Agree was used to collect the data.

3.2 Data Collection Process

The data was collected and analyzed to achieve the research objectives and to answer the research questions. The assessment and evaluation of this research is made by taking primary data obtained from the practitioners of the construction industry by using a structured questionnaire. The study at hand is based on objective in nature and the selected approach is deductive, so this study is quantitative research. The sample size was 143 construction firms of the C1 category working in Punjab Pakistan. Every firm questionnaire was distributed among two higher positions and two middle positions. A total of 205 (S value taken from Krejcie and Morgan (1970) sampling table (Krejcie & Morgan, 1970) against N value = 435) questionnaires were required to be administered and out of the distributed questionnaires, 217 responses were finalized for analysis.

3.3 Demographic Statistics

The analysis was conducted on 217 respondents who had responded via questionnaire. There was a total of 05 questions in the demographic part of the questionnaire. Out of 217 participants, 88.5% were male and 11.5% were female. This result depicts the true picture of

the construction industry in Pakistan. Females working in the construction field are less than males. Out of 217 respondents who participated in the research, only 7.8% were <25 years, 66.8% ranged between 26-35, 12.4% respondents from the age group 36-45 years, and 7.8% from the age group 46-55 years, and only 5.1% were from the age group of above 55. Out of 217 respondents, 44.7% of the respondents were holding bachelor's degrees while 447.9% of respondents had master's degrees while 5.1% of respondents had Ph.D. degrees. In the case of professional experience, out of 217 respondents, only 9.7% had less than 2 years of experience. 22.6% of respondents gave 3-5 years of experience, 30.9% of respondents have experienced between 6-10 years, and 36.9% had experience above 10 years. These details are also given in Table 1.

Table 1
Respondent's Demographics

	Total Respondent = 217		
Demographics	**Classifications**	**Frequency**	**Percentage**
Gender	Male	192	88.5
	Female	25	11.5
Age	<25	17	7.8
	26-35	145	66.8
	36-45	27	12.4
	46-55	17	7.8
	Above 55	11	5.1
Qualification	Bachelor's	97	44.7
	Master's	104	47.9
	PhD	11	5.1
	Professional Certification	5	2.3
Designation	Project Sponsor/Owner	20	9.2
	Project Director	15	6.9
	Project Manager	59	27.2
	Engineer	99	45.6
	Assistant Engineer	24	11.1
Job Experience	<2	21	9.7
	3-5	49	22.6
	6-10	67	30.9
	Above 10	80	36.9

4. Results

The established hypotheses presented in the research model have been endorsed by using SPSS version 28. Confirmatory Factor Analysis (CFA) was conducted through AMOS and SPSS version 28 was used for statistical analysis. The moderation and mediation analyses were conducted through Process Macro version 23 by Hayes (2018).

4.1 Reliability of the scale

Table no. 2 describes Cronbach alpha of the accumulated survey. To check the internal consistency of all the variables, their reliability is analyzed with Cronbach's alpha whose minimum cutoff value is 0.7 (Nunnally, 1975). In this research, the measured Cronbach alpha of every variable is higher than the cutoff value of 0.7, this study has a minimum value of 0.79 Cronbach alpha corresponding to individual green values. To check the Internal consistency of the construct, composite reliability is also calculated, and its value must be higher than 0.7 (Nunnally, 1975). A value more than 0.95 indicates that the variable is displaying a similar phenomenon. The value of composite reliability for all constructs lies in the acceptable range which implies the reliability of measurements made for our variables, and it is presented in Table 2.

4.2 Validity of Scale

Confirmatory Factor Analysis is carried out to check the validity of the measurement scales used for data collection. Factor loadings of different items of all the construct are checked

Table 2
Factor Loadings, AVE, Cronbach's Alpha and Composite Reliability

Construct	Item No.	Loadings	AVE	Cronbach's	Composite
Project Citizenship Behavior	PCB1	0.738	0.579	0.862	0.843
	PCB2	0.728			
	PCB3	0.762			
	PCB4	0.788			
	PCB5	0.763			
	PCB6	0.711			
	PCB7	0.784			
	PCB8	0.719			
	PCB9	0.71			
	PCB10	0.753			
	PCB11	0.823			
	PCB12	0.837			
Quality of Work Life	QWL1	0.813	0.576	0.927	0.842
	QWL2	0.792			
	QWL3	0.814			
	QWL4	0.762			
	QWL5	0.738			
	QWL6	0.74			
	QWL7	0.752			
	QWL8	0.732			
	QWL9	0.724			
	QWL10	0.794			
	QWL11	0.71			
	QWL12	0.726			
Green Human Resource Management	GHRM1	0.808	0.750	0.797	0.857
	GHRM2	0.859			
	GHRM3	0.877			
	GHRM4	0.886			
	GHRM5	0.896			
	GHRM6	0.869			
Green Employee Empowerment	GEE1	0.714	0.537	0.861	0.888
	GEE2	0.584			
	GEE3	0.545			
	GEE4	0.767			
	GEE5	0.826			
	GEE6	0.846			
	GEE7	0.789			
Individual Green Value	IGV1	0.773	0.684	0.943	0.866
	IGV2	0.849			
	IGV3	0.856			

Notes: AVE = Average Variance Extracted, PCB = Project Citizenship Behaviors, QWL = Quality of Work Life, GHRM = Green Human Resource Management, GEE = Green Employee Empowerment, IGV = Individual Green Value

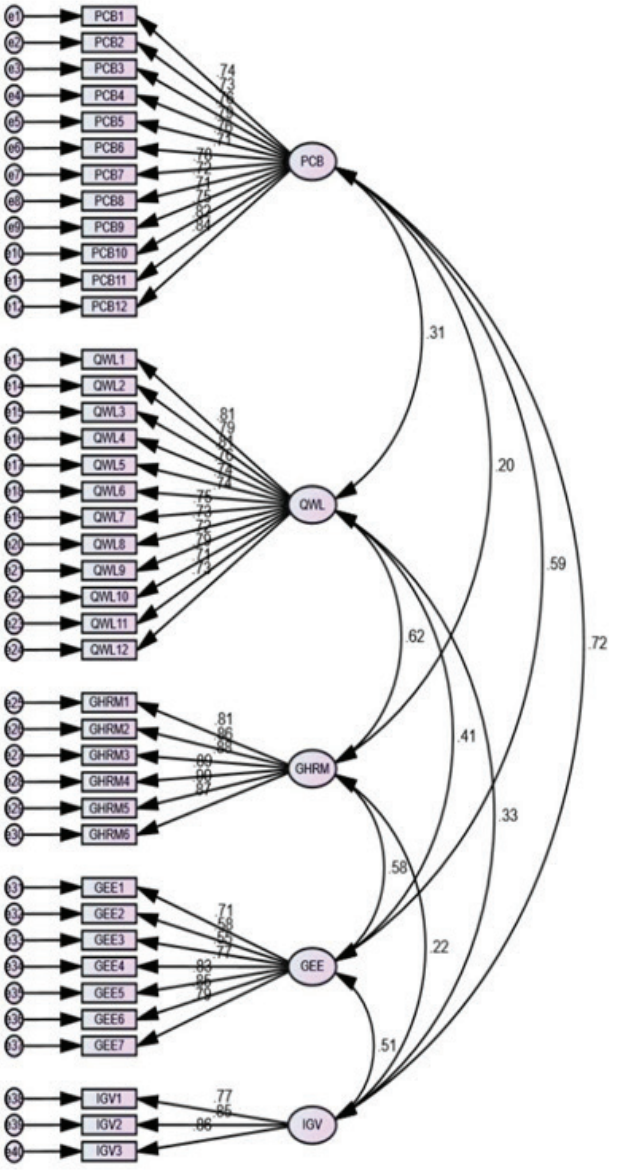

Figure 2 : A model with Items and Factor Loadings

By performing confirmatory factor analysis in AMOS software to know the portion of variable that can be retained and that can be excluded in further testing. As per Chin (1998), the cutoff level of factor loading of any item is 0.6. Figure 2 shows the factor loading of items used in this research and factors having loading less than the threshold can be excluded. All the values are more than the cut-off value of 0.6. The average variance extracted (AVE)

measured for this survey is also presented in the attached Table 2. AVE explains the validity of the aggregated constructs and it explains the extent to which variables are being explained by their items. The acceptable value of AVE is more than 0.5 (Hair et al., 2017). AVE provides the validity of the constructs explaining that every item is the construct is measuring it. For discriminant validity, we provide the correlation between square root of AVE following Fornell and Larcker (1981) criteria. As shown in Table 3, the square roots of AVE are higher than the inter-variable correlation implying discriminant validity of each variable (Hair et al., 2017).

Table 3
Discriminant Validity

	GHRM	GEE	QWL	IGV	PCB
GHRM	(0.733)				
GEE	0.588	(0.761)			
QWL	0.415	0.312	(0.759)		
IGV	0.581	0.203	0.622	(0.866)	
PCB	0.513	0.718	0.328	0.220	(0.827)

4.3 Hypotheses Testing

SPSS and Hayes Process Macro are used for the testing of the hypothesis and the model used for analysis was developed based on a conceptual model. In this established model, we have a total of 5 variables. One dependent variable, two mediating variables, one moderating variable, and one dependent variable. The direct effect is studied by performing linear regression analysis. For the analysis of mediation, we used 5000 bootstrap samples by using Hayes templates, Model 4. We used the same SPSS with PROCESS macro by (Preacher & Hayes, 2004), using 5000 bootstrap samples and used Model 1 of the Hays templates for the moderation model. A higher value of the path coefficient indicates a strong relationship between dependent and independent variables. P values of less than 0.05 show a significant relationship corresponding to a T value of greater than 1.96. Table 4 presents the hypotheses results.

It is reported that there is a significant positive impact of GHRM on project citizenship behavior with a P value < 0.00 and a total effect of 0.91. Moreover, values between the upper (ULCI) 0.98 and lower (LLCI) 0.84 limit do not contain any zero values which means that the total effect is quite significant, thus hypothesis 1 is supported. The second hypothesis of this study assumes that the relationship between project citizenship behavior and GHRM is partially mediated by green employ empowerment as the mediating variable effect size is 0.48 having no zero values between ULCI 0.60 and LLCI 0.37, providing support to hypothesis 2. The third hypothesis of this study identifies that the relationship between project citizenship behavior and GHRM is partially mediated by the quality of work life

as the mediating variable effect size is 0.63 having no zero values between ULCI 0.74 and LLCI 0.51, thus hypothesis 3 is supported. The fourth hypothesis of this study conceives that the relationship between green employee empowerment and project citizenship behavior is mediated by individual green value as the value of the coefficient of interaction came out as -0.06 with a significant p-value of 0.01. Moreover, there is no zero value between ULCI -0.10 and LLCI -0.10 indicating a significant support for hypothesis 4. It is further hypothesized that individual green values moderates the effects of green employee empowerment and quality of work life on project citizenship behaviors. Both of these hypotheses 5 and 6 did not get support as shown in Table 4. The next section discusses the findings and concludes the study with theoretical and practical implications.

Table 4
Hypothesis Testing

Hypothesis no.	Path		Coefficient	SE	T	P	LLCI	ULCI	Results
H1	GHRM→PCB	Direct Effects	0.91	0.04	-	0.00	0.84	0.98	Supported
H2	GHRM→GEEP→PCB	Direct Effects	0.42	0.05	-	0.00	0.32	0.53	Supported
		Mediating Effects	0.48	0.06	-	-	0.37	0.59	Supported
H3	GHRM→QWL→PCB	Direct Effects	0.28	0.05	-	0.00	0.18	0.38	Supported
		Mediating Effects	0.63	0.06	-	-	0.51	0.74	Supported
H4	GEE→IGV→PCB	Moderating Effects	-0.06	0.02	-2.58	0.01	-0.10	-0.10	Not Supported
H5	QWL→IGV→PCB	Moderating Effects	-0.05	0.02	-3.13	0.00	-0.09	-0.02	Not Supported

5. Discussion

The objective of this research is to study the effect of GHRM on project citizenship behavior in the construction industry of Punjab, Pakistan by taking green employ empowerment and quality of work life as mediating variables and moderating variables as individual green values. This study is performed in the construction sector and the outcome of this study presents a basis to analyze the impact of GHRM on project citizenship behavior. The dependent variable (project citizenship behavior) is measured with its items and observed that it is substantially related to its independent variable of green human resource management. Quantitative research methodology is applied to perform this study. Afterward, data was collected from 217 respondents from individuals working in the construction industry of Punjab via a survey questionnaire. The SPSS and Process Macro of Hayes were used to perform analysis of the collected data. The reliability and validity of the model were

checked via different parameters i.e. Cronbach's alpha, average variance extracted, composite reliability and CFA.

The current research targets to study the effect of GHRM on PCB in the project environment of the construction industry of Punjab, Pakistan. This research examines whether each of the GEE and QWL mediates the above relationship between GHRM and PCB as well as the role of IGV as a moderator between GEE and PCB, and QWL and PCB. Based on the results presented above, we can consider that: One of the objectives of this study is to check the effect of GHRM on project citizenship behavior (PCB) in the environment of construction projects in Punjab, Pakistan. As already analyzed in the earlier studies conducted in the international environment of the hotel industry (Pham et al., 2019), GHRM positively affects the PCB. The results show that the value of the effect is about 90.54%.

It has been observed in the earlier studies that the relationship between GHRM and OCBE is mediated by green employee empowerment based on which it was considered that a study may also be conducted to check whether GEE also mediates the relationship between GHRM and PCB or not, which is found because of this research that shows that GEE partially mediates the relationship between GHRM and PCB with the effect of 0.4221 (42.21%). In addition to the above previous study has revealed that GHRM positively affects employee performance through the impact of quality of work life/work life (Naqvi & Siddiqui, 2019), as well as a study has also shown that there exists a relationship between QWL and citizenship behavior (Sh & Sh, 2014). Therefore, to check whether QWL mediates the relationship between GHRM and PCB or not, I conducted this research, and the current research has revealed partially mediates the relationship between GHRM and PCB with an effect of 0.2752 (27.52%). The last objective of the research was to check whether the relationships between GEE and PCB, and QWL and PCB, are moderated by individual green values.

Earlier studies have shown that IGV moderates the relationship between GEE and organizational citizenship behavior towards the environment (Hameed et al., 2020). However, I have conducted this study to check whether this IGV also moderates the above-stated two relationships or not. The current research has revealed that IGV moderates the relationship between GEE and PCB as well as the relationship between QWL and PCB. The results of the research show that when the project team has individual green values, and the same is empowered using the GHRM practices then the team tends to perform citizenship behavior on the project in the construction industry of Pakistan.

This particularly relates to human behavior, as in a few responses, it has been seen that the respondents have not favored the sustainability to support the project citizenship behavior on the project site, however, most of the projects' team agreed to the fact that when progressive environment is given to team members at the projects' site the workforce

reciprocally tries to perform citizenship behavior which is imperative in current times. Likewise, is the matter where the quality of work life is associated with the replacement of green employee empowerment i.e. when GHRM offers an improved quality of work life to a team that also possesses individual green values in its attitude then it tries to execute project citizenship behaviors. Below is given the model with results that emphasize the above-mentioned discussion.

6. Conclusion

The results of this study have identified the significance of project citizenship behavior in construction projects and its dependency on GHRM in the Punjab province. Similarly, this dependency of project citizenship behavior on green human resource management, as evidenced by the results, highlights the importance of this study for the construction industry.

The study in hand summarizes the picture of construction projects in Punjab regarding the increment in project citizenship behavior on projects by the execution of the GHRM via quality of work life and green employee empowerment and the impact of individual green value. when a proper environment is given to the agreed team members at the projects' site the workforce normally tries to perform citizenship behavior which is too necessary in current times. Likewise, is the matter where the quality of work life is associated with the replacement of green employee empowerment i.e. when GHRM offers an improved quality of work life to a team that also possesses individual green values in its attitude then it tries to execute project citizenship behaviors. The model provided in section 2 above with results also emphasizes the above-mentioned discussion. However, there still exist other factors that need to be explored and analyzed. It is further emphasized that GHRM practices must be implemented on the projects along with the other related aspects so that the employees are provoked to perform citizenship behavior for the betterment and progress of our country.

6.1 Theoretical and Practical Implications

The current research moved beyond the existing body of knowledge and examined the effects of GHRM on citizenship behaviors through the mediation of employee empowerment and quality of work-life balance. The existing literature mainly focuses on conventional attitudes and behaviors of employees while studying GHRM, and its effects on sustainability-related phenomena are less studied. Further, individual green values, which is one of the important determinants in shaping employees' sustainable behaviors, is largely overlooked in the existing literature. Likewise, project citizenship behavior is relatively a unique phenomenon as citizenship behaviors is largely studied in conventional organizations, and less studied in project-based organizational contexts. The current study tapped into these less-studied phenomena and enriched our knowledge of the effects of GHRM on sustainability-related employee behaviors. Further, providing empirical evidence

from project-based organizations is also a unique contribution this study made. Lastly, this study is conducted in a developing country where the application of green practices is in its early stages. Since the existing literature largely contains research conducted in developed countries, empirical evidence from a developing country will enrich the comprehensiveness of the existing literature.

In addition to the theoretical implications, the findings of this research place great emphasis on project managers who have a significant role in the project and have to manage a diverse team. This study gives insights to the project managers as to the fact that implementing GHRM practices including empowerment and providing quality work life will lead employees to perform citizenship behaviors in project organizations. The findings of the study also highlight that personal green values play a significant role in strengthening the effects of employee empowerment and quality of work-life balance on employees' citizenship behaviors, recommending project managers to be conscious of employees' green values at the time of hiring. In addition, the policies of human resources of any organization may be considered as one of the main constituents of any organization depending upon which an employee's productivity output and willingness to work may increase or decrease.

The said research indicates the factors that may influence the willingness of an employee to work more eagerly on a project even without caring about the monetary and/or fringe benefits of a project. It should be kept in mind that organizations invest huge amounts in their employees to strengthen their human resource capital because organizations' performance depends on the performance of their employees. However, implementing better GHRM policies may get them some benefits without spending much. When individuals have a sense of empowerment and quality of work-life balance, they may be marked as willing workers to perform and influence others to perform citizenship behavior to timely completion of the projects as and when needed. Thus, project management organizations need to place a substantial focus on employing green HRM practices and prioritize the employees' well-being by providing sustainable working as well as post-service benefits.

6.2 Limitations and Future Recommendations

The first and foremost limitation of this study is that it has only been conducted for construction projects in the province of Punjab, Pakistan. It should be kept in mind that construction projects are quite different from projects in other sectors like IT, social, healthcare, etc. in most aspects i.e., dynamically, strategically as well as involve many other sectors and huge manpower and machinery. Therefore, the result must be generalized to other industries. Moreover, this research has only considered one province of Pakistan i.e., Punjab and even in this province most of the respondents were in the capital city of Lahore. It should further be noted that this research cannot even be generalized for Pakistan as we all know that even Punjab has different culture and traditions within itself and from other provinces and

human behavior may change with the culture and provided environment.

The current research particularly considers the GHRM, GEE, QWL, and IGV as its basis however, it may be noted that the research has not even been conducted in Pakistan that studies the factors influencing the performance of PCB on projects. It is recommended that such type of study may also be performed by undertaking individual values, human capital, leadership styles, reward systems, and further motivational perceptions (Jiang & Tetrick, 2016). It should also be borne in mind that this study only considers 03 out of 08 constructs of quality of work life as well as only 03 out of 05 constructs of project citizenship behavior particularly due to the limited number of questions in the questionnaire as with the increase in the no. of questions the respondents start losing interest in responding and the result gets destroyed. Therefore, separate research may also be conducted considering the remaining constructs.

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Exploring Factors Shaping Resilience in Maritime Supply Chains and Their Effects on Supply Chain Customer Value: Insights from the Pharmaceutical Sector

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Abstract

Because of the existing risks, studying the maritime supply chain (MSC) is a complicated task. The interdependence of the global Supply Chain (SC) on other channel members makes it vulnerable to disruption. This research signifies the determinants such as improved Information and Communication Technology (ICT), Strategic Alliance (SA), and its effect on SC customer value within the context of the pharma industry. A structured questionnaire based on a five-point Likert scale was used to obtain responses from 98 participants. PLS-SEM was deployed as a research technique to evaluate the proposed research model. The findings indicate that the determinants such as sophisticated ICT and SA possess a considerable beneficial effect on SC resilience, which further affects MSC customer value substantially. The findings provide practitioners with useful implications to cope with uncertainties, increasing pharmaceutical SC customer value and benefiting patients and hospital pharmacies by facilitating on-time delivery of prescriptions and drugs.

Keywords: Supply chain resilience; pharmaceutical industry; customer value; maritime supply chain.

JEL Classification: M16

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1. Introduction

The pharmaceutical supply chain is used to manufacture and distribute prescription medications to patients. Though it might seem simple, managing a functional pharmaceutical supply chain is quite complicated and necessitates a lot of steps to be followed (Sabouhi et al., 2018). The pharmaceutical supply chain (PSC) comprises manufacturers, maritime transport chains, wholesale dealers, and pharmacy benefit managers.

As per UNCTAD (2021), transportation by sea serves to transport 80% of all commodities. Nevertheless, the Organization for Economic Cooperation and Development (OECD) asserts that it is closer to 90%. While maritime transport is recognized as the cornerstone of global trade, it transports a wide range of resources to industrial hubs (Zohaib & Zaidi, 2022). Maritime transport along with its operations significantly contributes economically across various industries. The blue economy's valuation and employment of maritime transport and its associated industries are 40% and 24% respectively (shipbuilding, maintenance, and port operations). However, UNCTAD predicts that maritime trade volume will increase by 2.4% in 2023. Indeed, the industry is resilient, and UNCTAD anticipates steady moderate growth in maritime commerce volume over the medium period (2024-2028) (Review of Maritime Transport 2023)

However, chain interruptions are more likely to occur at the maritime node. MSCs are more likely to experience disruptions due to a high degree of interdependence between stakeholders on the off-shore and land sides, or at the port, which disrupts the chain's overall performance and reduces the consumer's value at the downstream level (Kashav et al., 2022). Port disruptions may have consequences for the global supply chain, as well as the critical node of the shipping logistical chain (Wendler-Bosco & Nicholson, 2020). However, major man-made disasters as well as prevailing political or economic circumstances could be to blame for this disturbance. According to studies, SC interruptions affect organizations for around nine months out of the year (Scholten et al., 2020). Furthermore, supply systems are becoming increasingly vulnerable as a result of the growing global population. As a result, the pharmaceutical business faces increased pressure since the increasing demands require expedited supplies. Because of a large range of products and varied stakeholder interests, the pharmaceutical industry is also the most dynamic and complex when contrasted to the maritime industry. Businesses must make more effort to stay competitive and profitable in the face of the high level of change.

The pharmaceutical industry, a large global corporation, involving a large number of diverse global channel members is required to manufacture, develop, and market the medicines. Pharma Supply Chains (PSC) usually have five echelons: first-tier and second-tier producers, shipping networks, global and localized dispatch centers, and demand locations. For instance, clinics, hospitals, and pharmacies. Primary producers are responsible for

refining and product recovery in the biological methods to create the required active ingredients (RAI), or chemical production involving segregation steps to accumulate the complex chemicals (Hasani et al., 2021). Additional production tasks like packing and completing SKU-based products are the responsibility of secondary manufacturers. Secondary manufacturers can be seen as manufacturing centers, whilst primary producers may be thought of as providers of raw ingredients. As a result, secondary producers contribute significantly to the creation of finished goods/ medicines (Sazvar et al., 2021), but they can only store a certain number of items at a time in a particular facility.

The marine supply chain has the responsibility of transporting inventory globally, including building ingredients, partially manufactured inventory (WIPs), and finished medications, as well as distributing them internationally. The primary DC and the regional distribution centers DCs are responsible for storing products to cater to the market demand. Local DCs can service more demand locations because they have a lesser capacity and are more dispersed than central DCs. Oftentimes, despite the utilization of cutting-edge technology and the development of innovative products, businesses are still unable to satisfy market demands issues and complexity of the marketplace (Ganguly & Kumar, 2019). The effect of maritime SC resiliency on customer value is investigated in this research study along with the elements that influence it. The pressure on the pharmaceutical business is continual and comes from a variety of nodes and entities that can affect its maritime MSC's node. Companies in this area should react instantly and effectively (Kanike, 2023) to cater to upcoming vulnerabilities.

The pharma sector ranks among the most tightly regulated in the world (Geremia et al., 2023), requiring businesses to follow a stringent set of rules to manufacture and market their goods. Unfortunately, because of all the regulations, some businesses feel needlessly constrained regarding their SCs. The current study focuses on the factors that influence MSC resiliency (MSCR) in a global SC setting and the impact of MSCR on the pharmaceutical sector's customer value. It is one of the most strictly regulated businesses in the world, with pharmaceutical corporations obliged to follow strict laws to synthesize and market their products. Furthermore, the pharmaceutical industry is continuously under stress because of disrupted variables affecting its maritime transportation network. As a result, pharmaceutical businesses must respond to disturbances swiftly and efficiently to avoid cascade interruptions. Unfortunately, growing uncertainty and stringent regulations keep the pharmaceutical SC underutilized. As a result, this study is guided by the following goals.:

- To identify factors impacting MSCR in the pharmaceutical sector.
- To assess the impact of MSC resilience on PSC customer value.

2. Review of the Literature

2.1 Theoretical background

As per the Resource-Based View (RBV), a company's internal, distinctive expertise (i.e., resource) is used to gauge performance through competitive advantage (Memon & Ooi, 2023). The RBV has already been extensively utilized in the domain of supply chain research to discover a variety of performance determinants. For instance, in the case of strategic capabilities (Ordanini & Rubera, 2008), Wu and Chiu (2015) highlighted innovative IT resources, Wong and Karia (2010) discussed strategic logistics abilities and, Wieland and Wallenburg (2013), emphasized SC resilience competence.

The modern era requires strategic collaboration with channel-wide members through investments in knowledge and resource-sharing abilities. In past studies, the ability of organizations to improve supply chain resilience was influenced by a variety of factors, including SC visibility (Brandon-Jones et al., 2014). However, SC-Resilience, which may improve operational performance, has also been noted as an organizational resource that supports enterprises in adapting to their surroundings (Ponomarov & Holcomb, 2009). Additionally, RBV can be used as a foundation to demonstrate how SC-Resilience affects the performance of cargo operations. Several forms of supply chain resilience fall within the scope of RBV's description of resources, including robustness (Wieland & Wallenburg, 2013), integration (Rodrguez-Dáz & Espino Rodrguez, 2006), and agility (Chiang et al., 2012), which probably raise the profitability of the firm, thus enhancing the customer value. In addition, this study introduces the Relational View (RV) as a supplement to the RBV.

The pharmaceutical industry's import and export departments are the primary unit of investigation in this research. Relational competencies, such as developed communications networks, relationship monitoring systems, and management systems, are significantly correlated with resilience, according to data from a case (Blackhurst et al., 2011) The relational view underpins this study's understanding of how good interpersonal skills might promote two dimensions of resilience.

2.2 SC-Resilience

According to Seddigh et al. (2023), PSCs are crucial for the growth of the medical and healthcare businesses. PSC's primary goal is to guarantee that pharmaceutical supply chains deliver on time, at the lowest possible cost, with a minimal stock out and the most efficient lead times. A company's SC orientation is defined as controlling the bidirectional flow chain's upstream and downstream flows, which has significant strategic outcomes (Modgil & Sharma, 2017a). (Zohaib & Zaidi, 2022) emphasized that when addressing PSC from a global context, regional diversity, localized compulsory norms, and conflicting organizational

structures provide challenges. The strengthening of GSC (Global Supply Chain), shortened PLCs (product life cycles), technological advancements, and changing consumer demands lead to extremely competitive PSCs.

The relationship between sourcing management, supply adaptability, and SC performance has already been researched and proven to have a beneficial influence on the customer value of the SC (Tripathi et al., 2019). Gupta and Kayande (2023) focused on identifying vulnerabilities in the pharmaceutical product distribution network and established an adaptive model to help the pharmaceutical PSC improve its resilience. However, research has analyzed the impact of the COVID-19 crisis on supply risk (Bø et al., 2023; Zohaib et al., 2023), resilience, and reliability in food and PSCs. Additionally, Silva et al. (2023) explored the integration of resiliency in a decision-support system (DSC) to investigate how resilience-driven strategies improve pharmaceutical SC operations under various scenarios. Hence, it has been established that risk management across the SC is gaining significance for global PSC.

The creation of an agile SC will demand some qualities, particularly competency, responsiveness, velocity, and flexibility. Numerous factors, such as market research, consumer demand, feedback from all parties, and estimations, define PSC's adaptability (Olfat et al., 2014). In addition, MSC has been studied in both centralized and decentralized supply chain environments. However, Modgil and Sharma (2017b), claimed that the availability and accessibility of supply data may be advantageous for decentralized setups.

2.3 Advanced ICT and MSC Agility

The advanced ICT application refers to the use of technical systems such as Web-based optimization tools, customized modules, Warehouse Management Systems (WMS), Transportation Management Systems (TMS), Port Community Systems (PCS) & Enterprise Resource Planning systems (ERPs) etc. There must be synchronization between the flow of information and inventory flow to make the SC more flexible. As far as maritime SC is concerned, IT infrastructure deployment is mandatory in making the shipping vessels proactive by making forecasts regarding upcoming damages resulting in the rescheduling of shipping routes enhancing the maritime SC agility (Lam & Bai, 2016). Furthermore, the earlier research enunciates that maritime SC agility is increased by attaining port efficiency, which is possible through the greater quality of information exchange due to the significance of the transmission of information (Loh & Thai, 2014). Resultantly, advantages such as increased collaboration among other transportation modes and optimum resource utilization are obtained (Notteboom & Winkelmans, 2001), which in turn enhances the port integration within the entire network. It also assists in establishing maritime agility by setting up required protocols (Loh & Thai, 2014).

Therefore, the IT system plays a vital role in enabling firms to gain timely information and facilitates them to make the communication process more rapid among maritime SC stakeholders (Fischer-Preßler et al., 2020). Consequently, the risk factors are minimized by reducing uncertainties making the maritime SC responsiveness better towards forthcoming risk factors. The presented arguments lead to hypothesize:

H1(a): Advanced ICT systems possess a positive and significant effect on MSCA.

2.4 Advanced ICT and MSC Robustness

ICT system deploys technological infrastructure to attain chain-wide integration enhancing SC visibility. According to Lavastre et al. (2012), efforts to improve SC visibility through information sharing about potential risks aid in the execution of risk mitigation techniques. Consequently, a standardized and harmonized IT system may significantly contribute to information transmission throughout the value chain (Speier et al., 2011; Hall & Saygin, 2012). Furthermore, a review-based study concluded that SC robustness is attained via information exchange at lower echelons. Lastly, Zhang et al. (2012) also argued that the risk resistance capability of SCs is enhanced via advanced information systems.

Nevertheless, With the development of contemporary technologies like Radio Frequency identification devices (RFID), Optical character recognition (OCR), and Global Positioning System (GPS), the efficiencies of SC have been enhanced more than ever before making them effective and cost-effective simultaneously. This has resulted in better implementation of contingency plans due to the reduced response time particularly in case of real-time situations (Blackhurst et al., 2005). Furthermore, IoT, defined as a dynamic system with the ability to regulate, track, and share useful information intelligently via smart interactions, has facilitated SC by effectively tracking and validating the consignment and providing information about their point of destination and expected arrival time (Galetsi et al., 2020). This leads to the visibility and transparency of information, reducing potential risk across the SC entities of the pharmaceutical industry integrating SC planning and production resulting in enhanced robustness.

H1(b): Advanced ICT system has a significant and positive effect on MSC Robustness.

2.5 Strategic Alliance and MSC Agility

The SC members' responsiveness can be enhanced via collaboration between the firm and SC partners (Gunasekaran et al., 2015), which is a preliminary step towards the development of strategic relationships. The focal firms must consider the relationship as an essential factor in making strategic contracts and sharing communication technologies (Gunasekaran et al., 2015). An organizational skill of dealing with agility entails the partner's

ability to react to the dynamic environment and circumstances (Liu et al., 2018), which requires aligning the partner's strategy with that of the focal business. It has been claimed (Huo, 2012) that the degree of supply chain integration must be investigated to realize either make strategic partnership or mutually cater to the organizational processes, to reduce SC vulnerabilities and more aggressively manage risks (Liu et al., 2018). In the pharma industry setting, the strategic alliance between the firm and maritime partners can result in reducing the risk associated with shutdown maintenance and better responsiveness towards environmental vulnerabilities. Consequently, it may be posited that:

H2(a): The Strategic Alliance possesses a positive and significant effect on MSCA.

2.6 Strategic Alliance and MSC Robustness

Enhanced interaction due to strategic alliances and collaborations among SC entities leads to port integration with other channel members. However, such relationships require enhanced coordination and cooperation levels to realize collaborative actions (Loh & Thai, 2015). This leads to enhanced bonding among pharma and internal LSPs, i.e., organizations which are a part of the value chain, hence increasing the PSC's customer value (Zohaib & Zaidi, 2022). The supply chains must prevent sub-optimization and competition among channel members can be realized only if the entire chain recognizes the importance of forming strategic alliances that channel numbers (Green et al., 2006; Loh & Thai, 2015). This may lead to enhanced customer service levels, which are because of resource-sharing capabilities among channel entities.

Furthermore, it has been claimed that alliances enable better utilization of similar resources of channel members resulting in risk mitigation leading to increased stability. This is advantageous for SME shipping companies since it allows shippers to capitalize during income generation days via common earnings. Therefore, measures such as the development of strategic alliances and relationship management among supply chain entities must be taken into consideration to develop a robust SC. Hence it is posited that:

H2(b): The Strategic Alliance possesses a positive and significant effect on MSC Robustness.

2.7 MSC Resilience and SC Customer Value:

This research focuses on the customer value of the pharmaceutical SC to realize the effect of agility and robustness, i.e., MSC resilience. This refers to the value driven by SC for specific pharma businesses and their consumers, which has been demonstrated to represent a significant resilience-related performance feature.

The maritime SC agility necessitates that ports and shipping carriers are adaptable and respond quickly to any disturbances or vulnerabilities within maritime supply chains to reestablish their prior steady position. Since the Maritimes supply chain is so large and interconnected, it is especially vulnerable to shock waves and must be able to quickly and effectively adapt to shifting market conditions and fluctuating consumer needs (Dubey et al., 2018; Aslam et al., 2020). As a result, the global system of supply chains needs to be extremely flexible and responsive (Brusset, 2016). As an additional piece of evidence, Wielandand and Wallenburg (2013) argued that speed is the most crucial factor in a supply chain's flexibility to meet the needs of the customer on time. The adoption of chain-wide agility lessens instability and enhances firms' responsiveness to shifting market demands (Christopher & Peck, 2004b), this is because the other allows for a quicker response to changing market conditions, risk mitigation, and customer needs (Aslam et al., 2020). In this way, pharmaceutical companies benefit from timely delivery requirements being met because it allows them to run their supply chains more smoothly.

As an essential component of resilience, robustness is crucial to the improvement of the global supply chain network. Maritime organizations that are well-prepared proactively through risk mitigation measures perform significantly better than other network agents. According to Hendricks et al. (2008), firms that prepare for their risks beforehand incur fewer losses. Moreover, according to Hendricks and Singhal (2005), Businesses do not immediately recover from the detrimental consequences of vulnerabilities. However, according to Hendricks et al. (2008), prepared businesses are less affected by disruptions. Therefore, the SC must be robust enough to accommodate the vulnerabilities.

Consequently, it may be hypothesized:

H3: MSC Agility has a positive and significant relationship with customer value of the Supply chain.

H4: MSC Robustness has a positive and significant relationship with customer value of the Supply chain.

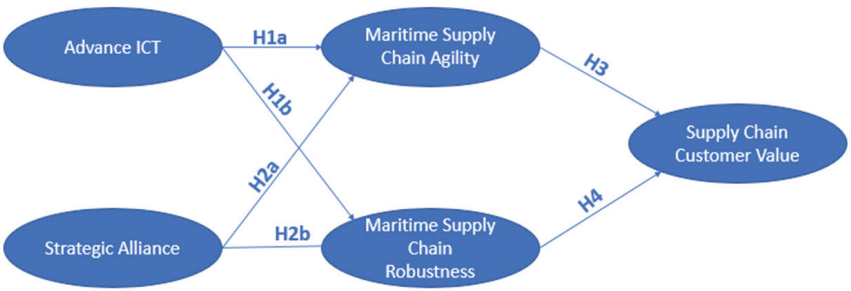

Figure 1: Conceptual Framework

3. Methodology

3.1 Sample Design and Data Collection

The inquiry employs a quantitative strategy based on a deductive methodology. The study's target demographic consisted of professionals working in the import and export departments of pharmaceutical companies and top hierarchy having past exposure to impex operations.

The sample size was calculated using the Daniel Sooper calculator (a web-based tool utilized for Sample Size Calculator for Structural Equation Models). The information was gathered from 113 respondents utilizing an online survey. However, only 98 responses were qualified after removing an outlier. Respondents were instructed to register their responses on a Likert scale ranging from 1 to 5. Individuals were contacted personally and provided with direct online access to fill out the survey. Using two components of the survey, a 5-point Likert scale questionnaire was designed. The preliminary part of the questionnaire comprised the questions related to the respondents' demographics, such as age, academic qualification, and professional experience; however, the elements influencing MSCR were evaluated in the second segment, which had 24 items. The responses were statistically analyzed via Smart PLS (Ver 4.0) via the deployment of the PLS-SEM technique. The outer and the inner model was validated, and further hypothesis testing was performed with 5000 iterations.

The research questionnaire was created using the combination and alteration of previously published measurement items. Each component's items were scored on a five-point Likert scale ranging from "strongly disagree" to "strongly agree,". Brandon-Jones et al. (2014), devised a four-item scale for measuring the 'Advance IT System' The Strategic Alliance was examined by adapting four questions from Sambasivan and Yen (2010) scale and developing three items to assess framework-related goals. For MSC Agility, the construct was examined using five adopted scale items (Whitten et al., 2012; Lotfi & Saghiri, 2018). In addition, Maritime SC's Robustness was examined by adopting one item from Brandon Jones et al. (2014) and four items from Wieland and Wallenburg (2013). Four SC Customer Value items were devised to evaluate the proposed model.

3.2 Demographics

This preliminary section includes age, gender, educational qualification, and experience. Table 1 shows the results. Male participants comprised 46.6% of the total sample, while female respondents were almost 53.4%. The age distribution of the participants indicates that 44.8% belonged to the age group of 18-25, 34.5% fell under 26 to 35, 15.5% were between the age group of 36-50, and merely 5.2% were above 50.

According to the segmentation of respondents by qualification, 31% were graduates and 69% had a master's degree. Based on the distribution of responders by experience, 51.2% had one to five years of experience, and 34.69% had six to ten years. The evaluation also revealed that 14.12% of the population had more than ten years of experience.

Table 1
Demographic Profile

		Count	Table N %
Gender	Male	46	46.6%
	Female	52	53.4%
Age	18-25	44	44.8%
	26-35	34	34.5%
	36-50	15	15.5%
	36-50, Above50	5	5.2%
Qualification	Graduation	30	31.0%
	Masters	68	69.0%
Experience	1 to 5 Years	50	51.02%
	6 to 10 Years	34	34.69%
	Above 10 Years	14	14.2%

4. Results

This empirical study focuses at the relationship among maritime elements that affect SCR and customer value of the supply chain. Data from the target audience was collected through questionnaire-based surveys. This data was evaluated and assessed after initial screening and Smart PLS 4.0 was used to draw meaningful conclusions. To investigate the predeveloped hypotheses, the models' reliability and validity were computed and analyzed.

4.1 The Evaluation of Measurement Model

Utilizing construct validation and reliability analysis, the outer model was evaluated via content, discriminant, and convergent validities according to their respective standards. The calculated results are reported and presented as follows for the current study:

4.1.1 Reliability Analysis

Reliability analysis is conducted to investigate the internal consistency of the model via the Cronbach alpha i.e., the measure to realize the internal consistency. The required minimum threshold for the Cronbach alpha is 0.7 (Hair et al., 2016). In the current study, all construct values are found to be greater than the required threshold of 0.7, which is acceptable as per the required benchmark, however, in the case of Advanced ICT, this value was found

to be 0.6, which is also considered adequate (Pallant, 2020). Below Table 2 represents the Cronbach Alpha values of the model constructs:

Table 2
Internal Consistency Reliability via Cronbach's Alpha

Constructs	Cronbach's Alpha
Advanced ICT	0.6
SA	0.806
MSC Agility (MSCA)	0.760
MSC Robustness (MSCR)	0.847
SC Customer Value (SCCV)	0.845

* Representing the Chronach Alpha values of the model constructs.

4.1.2 The Content Validity

The factor analysis step of the content validity test entails examining the factor loadings of the observed variables i.e., items forming latent variables. Factor loadings are referred to describe the coefficients that show the link between both the constructs and their associated indicators (Bagozzi & Yi, 2012). The outcomes of this study exhibit conformance to the requirement of all the items, which demonstrated a strong correlation among constructs along with the corresponding indicators. Below Table 3 represents the Standardized Outer Loading values of the constructs:

Table 3
Factor Loadings

	Advanced ICT	S.A	AG	Robust	MSCP
Advanced ICT_1	0.763				
Advanced ICT_2	0.723				
Advanced ICT_3	0.745				
S.A 1		0.727			
S.A 2		0.708			

To be continue

S.A 3	0.780			
S.A 4	0.749			
S.A 5	0.782			
AG-1		0.770		
AG-2		0.872		
AG -4		0.820		
Robust-1			0.782	
Robust-2			0.868	
Robust-3			0.845	
Robust-5			0.803	
SCCV 2				0.754
SCCV 3				0.815
SCCV 4				0.900
SCCV 5				0.832

*Represents the standardized outer loading (item) values of the model constraints.

4.1.3 Convergent Validity

Following that, the convergent validity of the hypotheses was evaluated to determine the outer model. Quantitatively, the factor loading values aid in determining the authenticity of the variables under consideration. Moreover, the convergent validity is reflected via the Composite Reliability (CR) value. Not only CR but Average Variance Extracted (AVE) also evaluates the model's convergent validity. There exists sufficient convergent validity if the values of the latent variables are more than 0.5, suggesting that the component represents fifty percent of the variance. (Chin, 1998). Table 4 below represents the Convergent validity values utilizing two parameters i.e., Average Variance Extracted (AVE) and composite reliability:

Table 4
Assessing Convergent Validity via CR and AVE

	CR	AVE
Advanced ICT	0.788	0.553
SA	0.865	0.562
MSCA	0.861	0.675
MSCR	0.895	0.681
SCCV	0.896	0.684

4.1.4 Discriminant Validity

Finally, discriminant validity aids in the comprehension of the correlation between dissimilar variables. Criteria utilized for the assessment of validation of the discriminant. HTMT and Fornell and Larcker tests were performed to measure the required validation. The AVE's square roots of alike combinations should be bigger than the correlation values of unlike pairs (Fornell & Larcker, 1981). Similarly, HTMT values must be below 0.85 to reflect the distinction between the different sets (Henseler et al., 2015). The below Table 5 outcome exhibits that the model adequately represents the presence of discriminant validity by meeting both the mentioned criteria.

Table 5(a)*
Assessing Discriminant Validity via Fornell and Larcker method

	Advanced. ICT	SA	MSC Agility	MSC Robustness	SCCV
AdvancedICT	0.744				
S.A	0.181	0.750			
MSC_Agility	0.341	0.242	0.822		
MSC_Robustness	0.253	0.296	0.362	0.825	
SC Customer Value	0.274	0.474	0.324	0.390	0.827

* Represents the discriminant validity via Fornell and Larcker criterion

Table 5(b)
Assessing Discriminant Validity via HTMT ratio

	Advanced. ICT	SA	MSC Agility	MSC Robustness	SCCV
Advanced. ICT					
SA	0.248				
MSCA	0.498	0.304			
MSCR	0.326	0.320	0.442		
SCCV	0.387	0.561	0.395	0.443	

*Represents the discriminant validity via HTMT Ratio

4.2 Path Analysis (Outer Model)

The structure model in the current study explains the extent and significance of relationships among constructs., the developed model examines antecedents of maritime supply chain resilience such as modern information and communication technology and strategic relationships influencing maritime SC resilience. and its effect on SC customer value. The path coefficient p-values in Table 6 represent the strength of the relationship. Furthermore, R2 values were calculated to determine the predictive power of the constructs. Lastly, all of the model hypotheses formulated were found to be statistically significant. Furthermore, the R2 showed that adv. ICT and SA determined 15% of MSCA and 12.9% of MSCR. Notwithstanding, agility, and robustness explained 19.1% of SCCV. Below Table 6 provides the significance values of the relationships and the path coefficients.

Table 6
*Hypothesis Testing***

Hypotheses	Coefficient	P-Values	Result
Adv. ICT → MSCA	0.307	0.002	Supported*
Adv. ICT → MSC Robustness	0.206	0.016	Supported*
SA → MSC Agility	0.186	0.086	Supported*
SA → MSC Robustness	0.259	0.004	Supported*
MSC Agility → SCCV	0.211	0.096	Supported*
MSC Robustness → SCCV	0.313	0.009	Supported*

* The confidence interval is considered to be 90%.
** Table 6 provides the significance values of the relationships and the path coefficients.

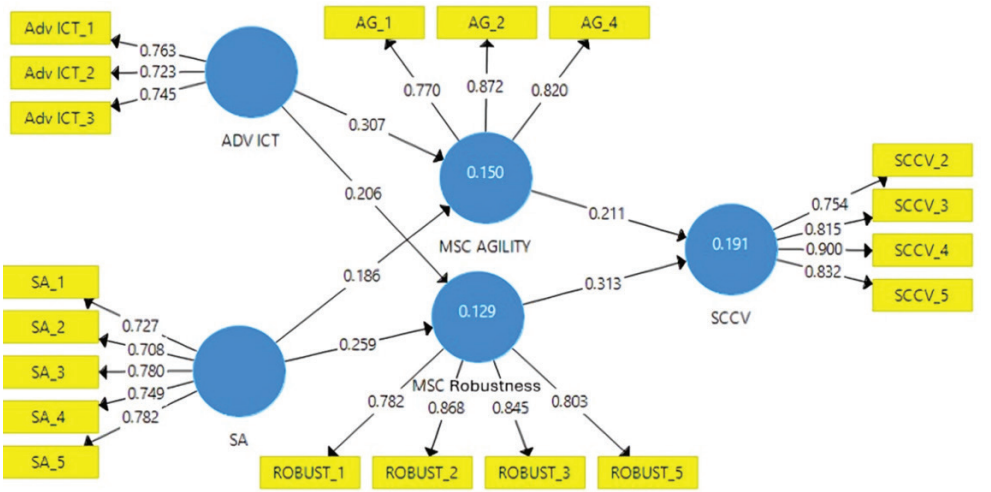

Figure 2: Representing outer loadings values and the values of R2 exhibiting variables' predictive power

5. Discussion

Sectors have recognized the need to establish an agile and resilient organization in the face of a very uncertain global market, increased variability in customer demand, and global transport chain vulnerabilities. This study emphasizes the importance of industry interdependence, particularly in the pharmaceutical business and the maritime chain, by illustrating the impact of MSCR on pharmaceutical SCP.

This study adopts the relational perspective, which has substantial implications for the interaction between the antecedents of maritime SC resilience and pharmaceutical SC's customer value. Previously, it was assumed that supply chain practices had to fit into stable corporate contexts. Nevertheless, Wieland and Wallenburg (2012) emphasized that agile and robust attributes, i.e. resilience and its dimensions, significantly impact the SC customer value Although various other aspects affect SC customer value the impact of agile and robust characteristics together is remarkably high. Currently, the pharmaceutical industry considers the availability of medications/vaccines to be vital for both commercial success and patient treatment. According to reports, seven of the top ten pharmaceutical items require temperature-controlled delivery. For example, flu vaccines and insulin must be kept at an extremely exact temperature to remain effective. It has been reported that a 2-degree Celsius difference can entirely damage a pharmaceutical product, resulting in a reduction in pharmaceutical consumer value. The scenario arose mostly as a result of late or low-quality shipments at the replenishment end. These two scenarios could be jeopardized at the maritime transport network's node, which is more susceptible to disturbances. As a result, this research explores the significance of MSC resilience and the drivers that may influence it.

Finally, it was discovered that maritime SC robustness possesses a significant impact on pharmaceutical SC consumer value. These findings show that steps to improve SC resilience across many parts of the organization are required to ensure optimal outcomes for PSCs. Building up the MSCR increases the customer value of PSC by reducing the probability of stockouts and low availability of medications at the downstream supply chain.

5.1 Managerial Implications

The pharmaceutical industry's managers are strongly urged to establish and enhance their Information and Communication Technology (ICT) infrastructure, particularly by integrating network capabilities for tracking and tracing. This initiative would not only enhance the overall visibility across the supply chain but also contribute to the development of a more agile and resilient supply chain. Furthermore, creating strategic alliances with international logistics companies can promote collaborative efforts to optimize maritime supply chains. To do this, pharmaceutical businesses need to link ERP systems with Port Community Systems and other modules. The PCS allows enhanced collaboration, integration and comprehensive port management (Zohaib et al., 2023), enabling supply chain stakeholders to benefit from increased transparency and improved planning and production scheduling. This may be achieved by realizing the channel-wide infrastructure and by enhancing the trust level. This may require fine-tuning of both the systems i.e., the ERP and PCS or by adding a module which may provide facilitation in integrating both the systems. Managers at the port and on the supply chain side may be authorized and share the data along with the process maps with the port to facilitate the integration.

Furthermore, the research findings emphasize the significance of building resilience within the pharmaceutical supply chain, given the critical importance of ensuring on-time delivery of pharmaceutical products to end consumers. By implementing measures to enhance SCR within an organization, it becomes feasible to prevent network vulnerabilities from triggering a domino effect within the supply chain, ultimately leading to increased value for end-consumers, including patients and hospital pharmacies, as well as the pharmaceutical companies themselves.

5.2 Future Research Avenues

In addition to present determinants impacting MSCR, additional factors, such as SC Relationship Management, Contingency Plan, and Monitoring & measuring, may be investigated and assessed within the context of the pharmaceutical sector to strengthen the PSCs. Based on the perspective of RV theory, coordination and collaboration may be analyzed to evaluate MSCR, unlike the RBV theory, which enunciates that factors such as SC connection, SC Ambidexterity, and SC alignment may be evaluated. These constructs' effect realization would provide a more comprehensive strategy with broader applicability.

Conflict of interest: The researchers have no competing interests.

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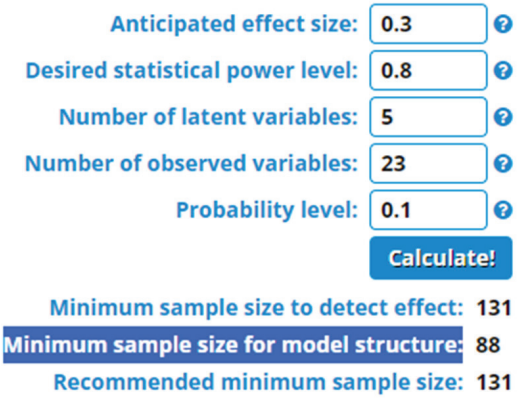
ANNEX I:



The Effect of High Involving Human Resource Practices on Employee Wellbeing and Performance: A Moderating Role of Psychosocial Safety Climate

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Abstract

The study aims to investigate high involving human resource practices i.e.; (training and development, career development, performance appraisal, compensation) on wellbeing and performance. The psychosocial safety climate was tested as a moderating variable on wellbeing and performance. The research was conducted in the primary education public sector in Pakistan using a total sample size of 244. The study used the quantitative research design while employing SPSS for the descriptive analysis and Smart PLS for the structural equation modeling. The findings revealed that high involving human resource practices are vital in achieving higher levels of wellbeing, particularly in public sector schools. The study revealed that the psychosocial safety climate positively moderates the relationship between wellbeing and performance. Further, this research could also influence the model's application in other industries. The study limitations and implications are also discussed.

Keywords: High involving HR practices; wellbeing; performance; psychosocial safety climate.

JEL Classification: O15, I31

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1. Introduction

Employee performance is favorably associated with high involving human resource practices (training and development, career development, performance appraisal, compensation) (Ahmad et al., 2019). Evidences showed that the critical role of human resource practices could play a crucial impact in improving employees' outcomes. It is crucial to recognize that high-involvement human resource practices in educational context have an impact on gaining higher employee wellbeing and performance.

The education sector plays a fundamental role in the uplifting and wellbeing of society towards a sustainable future (Cook et al., 2019). The teaching profession among education sectors is considered to be one of the highest stress levels while at work, leaving a negative impact on the wellbeing and performance of teachers (Wang & Rahimi, 2015). The wellbeing of human resources has always been one of the priorities in the educational sector (Kowalski & Loretto, 2017). In this regard, the agenda of 2030 for Sustainable Development Goals (SDGs), which were agreed upon in 2015 by the United Nations (UN) Member States, delivers a shared blueprint of peace and prosperity for people and the planet for today and the future. Among 17 other SDGs, "Good Health and Wellbeing" are third in number and follow the theme that "ensure healthy lives and promote well-being for all at all ages" (Lenkaitis, 2022). Further, according to Helliwell et al. (2020), wellbeing is a crucial component of the UN's SDG goals. The teachers' knowledge and capabilities are essential for restructuring educational organizations toward sustainability (Ridge & Kippels,2019).

Extant literature highlights the teachers' development, wellbeing and sustainable future (McCallum & Price, 2016). Viac and Fraser (2020) have emphasized that a teacher's wellbeing is related to his/her responses to the cognitive, emotional, health and social conditions pertaining to their work and profession. Despite the large number of studies that contribute to the literature on wellbeing, studies are limited to address the factors affecting teachers' wellbeing in the context of developing nations (Ahmed, 2022). Pakistan, a third-world country with a poor GDP, has yet to establish a will toward the development of education in general and school education in particular. According to Pasha (2020) Pakistan has the second lowest HDI value among South Asian countries, after Afghanistan. The HDI value for the year 2018-2019 was recorded at 0.570. A comparative study among Pakistani and Turkish school teachers found that Pakistani school teachers of both public and private sectors were less satisfied with their wellbeing than Turkish teachers. The study further advocates that Pakistani teachers were provided with fewer facilities at work in schools, as their score on facilities at work was the least among the five factors of Quality of School Work Life (Akram et al., 2017).

This study provided insight into the significance of human resource practices in educational settings that eventually enhance the teachers' wellbeing and sustainable

performance. In specific to address the gap in the extant literature, this study investigated the impact of high involving human resource practices on wellbeing and performances. In addition, the study assessed the moderating impact of psychosocial safety climate on the relationship between well-being and performance which was rarely tested before in literature.

1.1 Knowledge gap and objectives

This study contributes to knowledge in several ways by exploring the relationship between High involving HRM practices, wellbeing, psychosocial safety climate and performance. This study proposes crucial insights to educational professionals and decision makers for establishing interventions and practices to develop the wellbeing and performance of the school teachers. The earlier studies have outlined the need for more research into contextual factors that influence the implementation of positive education (Akram et al., 2017). Past studies have revealed that educational institutions have focused on schools' economic and environmental dimensions and ignored the social ones. The social dimension primarily focuses on teachers' wellbeing and development (Pagán -Castaño et al., 2021). Researchers also highlighted that the performance within educational institutions was mainly measured in terms of students' academic achievements rather than organizational outcomes, such as teachers' wellbeing (Bottiani et al., 2019). According to Pagán-Castaño et al. (2021), changes within the organizational working context and social environment (i.e. digitalization, flexibility, increased inequality) pose a severe threat to people's general wellbeing and employee in particular. This research established there is a need for more research into employees' wellbeing in school education within Pakistan in general and Balochistan in particular.

The dynamic of the education sector requires and demands that their employees should improve and update their capacity in a changing environment. In order to protect and ensure safety of educational professionals, policymakers may use High involving HRM practices in schools as a tool to promote wellbeing and their engagement. In this connection, sustainable education scholars argue that there is a need to balance the teachers' performance and quality of work-life through the human resource practices, (Sousa et al., 2022). In addition, the study aims to measure the extent to which it is necessary to encourage sustainable learning in schools that promotes employees' wellbeing. The sustainable learning further highlights the role of high involving human resource practices as key elements in maintaining the quality of education in societies (Viac & Fraser, 2020; Pagán - Castaño et al., 2021).

This research is first in its nature, emphasizing on teachers' wellbeing and performance through the consideration of high involving human resource practices in public schools. However, the psychosocial safety climate being a crucial issue for today's organization, and rarely tested in literature which can play a pivotal role in enhancing the employees' wellbeing towards improved performance, (Hu et al., 2022). Moreover, psychosocial safety

climate acts as a leading indicator and works as a moderating variable which may strengthen the relationship between teacher's wellbeing and performance. Thus, the study confirms the significant effects of high involving human resource practices on employee wellbeing and performance.

Further, from the knowledge gap analysis this study has derived three main research objectives which are, to study the impact of high involving human resource practices on employee wellbeing, to study the impact of employees' wellbeing on the performance, and to test the moderating impact of psychosocial safety climate on the relationship between employee wellbeing and performance.

2. Literature Review and Hypotheses Development

Human resource practices as "the process involves the development of number of interrelated processes that together makes an impact on the performance within the organization through its employees. It can be achieved by enhancing the employees' skills, education, and incentives and engaging the common interests. Further, this argument is supported theoretically by Social Exchange Theory (SET) and Job Demands Resource (JDR). The social exchange is widely linked with the human resource practices and performance Gould-Williams and Davies (2005).It can be used to enhance the school teachers' performance through the use of soft human resource approach (Pagán - Castaño et al., 2021). It is evident that the organizations promote their commitment by investing in employees to gain higher level of employees' satisfaction and performance. In addition, the study objectives are also supported by JDR theory, as the teachers' wellbeing generated by the balance among human resource practices, it contributes positively to school teachers' performance. The JDR model focuses on the teacher wellbeing and their performance is the result of a balance between demand and labor force (Dollard & Bakker, 2010).

The current study has adopted training and development, career development, performances appraisal and compensation as high involving human resource practices and tested their impact on teachers' wellbeing and performance in the education institutions.

2.1 Training and Development and Wellbeing

Training and development provide employees with greater knowledge, skills, abilities and attitudes that further enhance the organizational performance. Cook et al. (2017) argues that when the teachers receive training a number of positive outcomes is expected as a result. Moreover, teachers' active involvement in training and development process can enhance their knowledge, effectiveness, job engagement, avoid burnout situations and most importantly enhance students' achievements. Mishra et al. (2020) has concluded that the training and development is significantly and positively related with wellbeing. Moreover,

the process of teachers' involvement in the training and development not only improve teachers' efficacy but also avoid burnout situations and further strengthens students' achievement (Hervie & Winful, 2018). It can be assumed that training and development will improve the wellbeing of the teachers. Hence, it is hypothesized that:

H1: Training and development has a positive impact on employee wellbeing.

2.2 Career Development and Wellbeing

McInerney and Simon (2012) defined career development as "the approach taken by an organization to certify that the individuals who meet the criteria and knowledge required for successful career. Career development is a tool of human resource practices can help the schools to attract as well as retain the motivated and competent teachers (Loeb et al., 2012). The career development among other human resource practices is unique as it emphasizes the organizational top management to make the human resource well prepared for the higher duties and rotating within the organizational growth setup. Researchers highlighted that career development in education sectors needs much attention in an effective and systematic manner (Haug & Mork, 2021). Past studies findings support that career development of an employee has significant impact on wellbeing of an employee. Hence, it is hypothesized that:

H2: Career development of the employee has positive influence on employee wellbeing.

2.3 Performance Appraisal and Wellbeing

Performance appraisal is considered as a vital tool for the development of employees to accomplish organizational goals (Sawaneh & Kamara, 2019). Researchers argue that performance appraisal is a small part in the process of a larger process in the overall performance management (Muguongo et al., 2015). Attaining higher organizational productivity in terms of performance, the performance appraisal should be widely interconnected with organizational goals in order to achieve effective work results (Bortolotti et al., 2015). Thus, the performance appraisal among other human resource practices is one that is more related to employees' intrinsic motivations towards employees' wellbeing (McInerney & Simon, 2012). Thus, the mechanism of performance appraisal needs to be associated with organizational objectives in order to achieve higher efficiency. Hence, it is hypothesized that:

H3: Performance appraisal of the employee has positive influence on employee wellbeing.

2.4 Compensation and Wellbeing

Compensation is referred as "all of the rewards either tangible or intangible employees get from their organizations as part of the relationship between employee and employer (Muguongo et al., 2015). The act of compensation not only benefits the employees but also achieves different purposes like helping in hiring or induction process and retaining

them for a longer period of time. Some other forms of reward and fringe benefits are considered as parts of compensation program that are significant for both the employer and employees, (McInerney & Simon, 2012). According to Fuzi and Salleh (2017), compensation as a component of high involving human resource practices have positive impact on teachers' wellbeing in the education sector. Researchers revealed that compensation is an important factor of high involving HR practices that could significantly improve the wellbeing of an employee, (Huettermann & Bruch, 2019). Hence, it is hypothesized that:

H4: Compensation of the employee has positive influence on employee wellbeing.

2.5 Employee Wellbeing and Performance

The wellbeing of an employee has huge impact on the performance. Numerous studies have found the positive impact of employees' wellbeing on organizational performances (Pagán -Castaño et al., 2021; Dabrowski, 2021). Researchers posited that employees who reported higher levels of wellbeing at work also reported higher levels of job performance (Bakker et al., 2004). Other researchers argued that employees who experienced positive emotions at work were more likely to have higher levels of job performance, as well as better problem-solving skills and creativity (Heslin et al., 2006). In line with this, Runhaar et al. (2013) found positive relationship between performance and employee wellbeing. Pagán-Castaño et al. (2021) highlighted the significance of psychological wellbeing of teachers' work practices. Another study by Huettermann and Bruch (2019) found that physical wellbeing has negative impact on teachers' performances. It can be assumed that wellbeing will positively influence teachers' performances. Hence, it is hypothesized that:

H5: Employees' wellbeing has positive impact on the performance.

2.6 Moderating impact of Psychosocial Safety Climate

Organizational studies have focused that the improvement of psychosocial safety climate in the organization leads to better performances of the employee, (Dollard & Bakker, 2010; Mansour et al., 2021; Loh et al., 2018). For instance, the study conducted by Yulita et al. (2014) found that psychosocial safety climate enhances employees' performance in the organization. In the context of educational institutions, researchers found that establishing a strong climate that helps in preventing the teachers' problems related to workplace conditions (Zadow & Dollard, 2015). In addition to this, others found that clear policies regarding the working environment improves the psychosocial climate in promoting and protecting the teachers' psychological health (Idris et al., 2011). Based on the past studies, it can be assumed that psychosocial safety climate will enhance the relationship between the wellbeing and teachers' performance. Hence, it is hypothesized that:

H6: Psychosocial safety climate will moderate the relationship between employee wellbeing and performance.

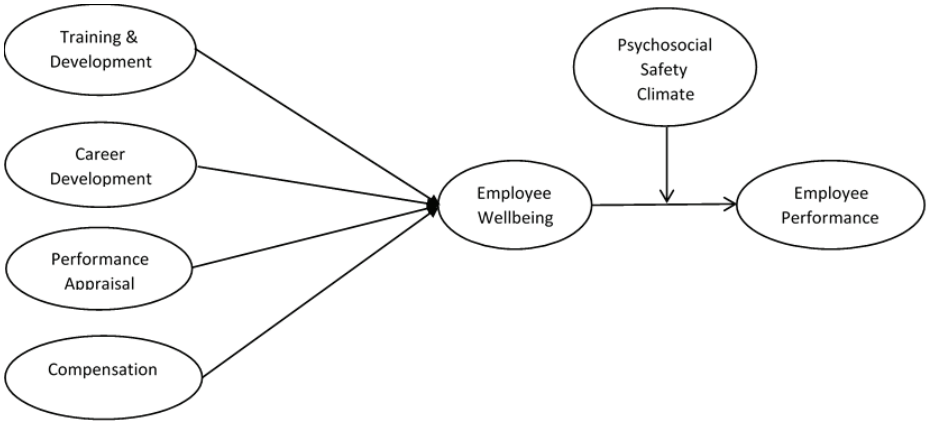

Figure 1: Conceptual framework

3. Methodology

3.1 Data Collection and sampling

This study adopted quantitative research design and gathered the primary data from public sector high school teachers via self-administered questionnaire. The present study had the population of all public sector high school teachers (male and female) of Balochistan province in Pakistan. According to Sekaran and Bougie (2016) the population consists of the group of people, things of interest and events that need to be investigated by the concerned researcher. Moreover, the selection of the correct sample, researchers can draw the conclusions that could be generalized in terms of the population of interest because the process of identifying the target population is critical so that errors to be avoided while selecting the samples. The non-probability convenience sampling method was deployed for sampling purpose. This method was used for the easiness and cost effective to access the data collection.

As this method tends to be particularly useful for addressing basic or foundational research inquiries and hypotheses during the initial phases of study development or in some cases in exploratory investigations, it is important to note that convenience samples also come with certain limitations. These samples lack generalizability and are less applicable to broader research domains where the aim is to establish scientific patterns. In such cases, obtaining results that can be readily extended to the larger population may not be guaranteed (Saunders et al., 2007). Further, the data were collected from twenty-eight schools among which eleven schools from girls and seventeen from boys. The collected samples were of mix

caliber to avoid further biasness. The sample size for data collection was 288. According to Hair et al. (2012) the number of observations for sample size should be at least five times as the number of variables to be analyzed in the study. Based on the above arguments, this study had multiplied the total number of items (48) with (5), as a result 240 was the minimum number of sample size. However, for more accurate results 288 questionnaires were distributed among respondents.

3.2 Survey Instruments

The questionnaires were adopted which were previously used by researchers and their reliability and validity were significant. The instrument was tested for reliability and value of Cronbach's Alpha was 0.79 which is considered as significant according to Hair et al. (2012). The study adopted the established scales used by the previous researchers. The scale for measuring high involving human resource practices were adapted from Tremblay et al. (1998). The scale for the employees were adapted from Guest (2002) study. The scale for the teacher performance was adapted from the study of Heneman and Milanowski (2004). The scale for the measurement of psychosocial safety climate was adapted from Idris et al. (2011). The questionnaire was comprised of four constructs namely, high involving human resource practices, teacher wellbeing, psychosocial safety climate and teacher performance. Each category further had 12, 20, 4 and 12 items respectively measuring on a Likert-Scale from 1 to 5. For example, 1= (Strongly Disagree) to 5= (Strongly Agree) and 1= (Never) to 5= (Always). Among the four categories, there was a concise letter of invitation with relevant information about the survey as well as a separate section for questions relating to demographic variables, such as age, gender, teaching experience, job title, qualification and administrative position held within school.

3.3 Results and Analysis

The Statistical Package for Social Sciences (SPSS) version 27.0 was used to perform the descriptive part of the demographic variables, whereas, the Smart Partial Least Square (PLS) version 3.3.9 was used to carry out the measurement model and structural model. A total of 288 survey sheets were distributed among school teachers, only 246 were received back from respondents. Among 246 surveys, two (2) were not usable, therefore 244 questionnaires were considered for the study. The response rate for this study was 85.41%.

3.4 Common Method Bias

Since the study is self-reported, therefore, Harman's Single Factor test was run in SPSS to check the presence of common method bias. All items from each construct was implemented for the factor analysis to confirm if more than 50% variance comes from a general factor before being rotated, (Beavers et al., 2013). However, the results of this study

reported a variance of 44.681% for all constructs' items. Thus, the results of this test confirm that there is no common method bias that may affect the results.

Table 1
Measurement Model

Variables	Items	Factor Loading	A V E	CR
Training and Development	T&D1	0.715	0.547	0.82
	T&D2	0.823		
	T&D3	0.673		
Career Development	CD1	0.771	0.628	0.89
	CD2	0.794		
	CD3	0.812		
Performance Appraisal	PA2	0.711	0.603	0.75
	PA3	0.702		
Compensation	C1	0.684	0.561	0.73
	C3	0.661		
Employee Wellbeing	EW1	0.811	0.601	0.76
	EW2	0.718		
EW3 0.688				
	EW4	0.641		
	EW5	0.834		
	EW6	0.874		
	EW7	0.779		
EW8 0.783				
	EW9	0.895		
	EW10	0.689		
EW11 0.672				
	EW12	0.869		
	EW13	0.711		
	EW15	0.861		
	EW16	0.755		
EW17 0.691				
	EW18	0.642		
	EW19	0.816		
Psychosocial Safety Climate	PSC1	0.833	0.698	0.74
	PSC2	0.809		
	PSC3	0.823		
	PSC4	0.880		
Performance	P1	0.781	0.523	0.80
	P2	0.674		
	P3	0.689		
	P4	0.813		

To be continue

P6	0.553
P7	0.897
P8	0.669
P9	0.818
P10	0.608
P11	0.721
P12	0.661

The A.V.E shows (Average Variance Extracted) and the C.R shows (Composite Reliability). Whereas, Factor Loading > 0.5, AVE > 0.5 and C.R > 0.7

3.5 Reliability and Convergent Validity

The study examined the reliability values via two methods: Cronbach alpha's values and composite reliability values (See Table I). All constructs' value was 0.70 which is considered a good internal consistency (Garson, 2008). The findings show that Cronbach's alpha values of individual items range between 0.73 and 0.90. The second method was based on the composite reliability values. Composite Reliability (CR) for all constructs obtained is also greater than 0.7. The highest value for composite reliability recorded was (0.89) for career and development construct and the lowest value was (0.73) for compensation. The convergent validity was also assessed. First, as the values for factor loadings are greater than 0.5, therefore, the factor loadings are significant in this study. Second, the Average Variance Extracted (AVE) is greater than 0.5. Therefore, the present study fulfills all the minimum requirements of convergent validity.

3.6 Discriminant Validity

The discriminant validity was run through the Smart PLS (version 3.3.9) to examine the correlation among the measures of various constructs in the model. Hence, a low correlation between two measures shows that the specific construct does not represent the other construct in the model (Sarstedt & Cheah, 2019). Fornell and Larcker (1981) suggests that the square root of Average Variance Extracted (AVE) for all constructs should be higher than square of the correlation between constructs. The AVE values for all constructs were above (0.50). The highest and lowest values recorded were (0.836) and (0.723) for psychosocial safety climate and performance respectively. Furthermore, all constructs' correlations were lower than the AVE of each constructs. However, based on the above arguments, the measurement model proved that convergent validity and the discriminant validity which demonstrates that the measurements of all constructs in present study were valid. Thus, based on the results of measurement model, the data also met the requirements for analysis. The Table-II shows the calculation of discriminant validity results.

Table 2
Discriminant Validity Results

Variables	1	2	3	4	5	6	7
Training & Development	**0.740**						
Career Development	0.391	**0.793**					
Performance Appraisal		0.244	0.436	**0.776**			
Compensation		0.472	0.511	0.272	**0.748**		
Employee Wellbeing	0.368	0.632	0.254	0.369	**0.775**		
Psychosocial Safety Climate	0.461	0.377	0.407	0.670	0.210	**0.836**	
Performance	0.689	0.421	0.447	0.491	0.645	0.249	**0.723**

Diagonal values represent the square root of AVE; whereas, the values below the diagonal represent the correlation between the constructs.

3.7 The Structural Model Assessment

The structural model in PLS was used to reflect the paths that were hypothesized in the research framework of the study. The study used to the PLS Bootstrap with a subsample of one thousand (1000) and having the significance level at 0.05.

Table 3
Structural Model Results

Hypotheses	Path	β	St DevT-Statistics	P-Value	Results	
H1	T&D -> EW	0.117	0.114	1.978	0.000	Supported
H2	CD -> EW	0.209	0.147	2.610	0.001	Supported
H3	PA -> EW	0.233	0.091	1.983	0.042	Supported
H4	C -> EW	0.198	0.055	3.844	0.031	Supported
H5	EW -> EP	0.210	0.144	2.972	0.000	Supported
H6	PSC*(EW -> EP)	0.109	0.087	2.801	0.004	Supported

The significance levels at (t value: > 1.96 and p value: < 0.05)

The current study tested a total of six hypotheses in order to find the relationship as well as the significance of variables (Refer to Table III). The first hypothesis H1 evaluates the Training and Development (T&D) has a significant impact on Employee Wellbeing (EW). Thus, the results for H1 show that there is a significant impact of T&D on EW and there exists a positive relationship too. Whereas, the values calculated were (β=0.117, t=1.978, p = 0.000). Therefore, the hypothesis (H1) is said to be supported. The second hypothesis H2 was hypothesized between Career Development (CD) and Employee Wellbeing (EW) to determine whether a significant impact exists. The H2 was also supported as it qualified the minimum values required, such that (β=0.209, t=2.610, p= 0.001). Therefore, the H2 was also supported. H3 was hypothesized between Performance Appraisal (PA) and Employee

Wellbeing (EW). The results also support this hypothesis; thus, a positive relationship exists. The results for H3 were (β = -0.233, t = 1.983, p = 0.042). Similarly, the fourth hypothesis H4 is also supported. H4 was tested between Compensation (C) and Employee Well-being (EW). The results show that (β = 0.0198, t = 3.844, p = 0.031) a significant relationship exists. In addition, the fifth hypothesis H5 was tested between Employee Well-being (EW) and Employee Performance (EP). This hypothesis is accepted. The results for H5 are (β = 0.210, t = 2.972, p = 0.000). Moreover, the study hypothesized the sixth hypothesis H6 as a moderator (Psychosocial Safety Climate) between Employee Wellbeing (EW) and Employee Performance (EP). The results revealed that this relationship was supported. The hypothesis is therefore supported because the t value qualified the minimum requirements, (β = 0.109, t = 2.801, p = 0.004). It is concluded that the moderating effect of psychosocial safety climate is between employee well-being and employee performance. It also strengthens the relationship between well-being and performance.

4. Discussion and Conclusion

The study findings strongly validate the given model. The results highlight the importance of human resource practices in the school context as a mechanism to attain a higher level of teachers' well-being and performance. The study findings reveal that the obtained results are more consistent and relevant to Social Exchange Theory (SET) and the Job Demands Resource (JD-R) Model which explains the positive relationship between human resource management practices and employee performance in organizations. This argument was also supported by some other studies in the literature (Pagán-Castaño et al., 2021; Gallego-Nicholls et al., 2022). The literature also supports these arguments that the high involvement in human resource practices towards teachers' performance show higher level of commitment (Alam, 2022; Masud & Daud, 2019). The results further endorse that the four high involving human resource practices lead to an improved teacher performance within the public sector schools and also result the overall students' achievements. Therefore, it is again crucial for policy makers to keep in view that without the proper human resource unit in educational systems the teachers' performance may decline drastically, as a result it further worsens the students' achievements. The recent studies suggest that teachers' performance is directly associated with students' performance or achievements (Esther & Paul, 2021; Goetz et al., 2015). Another study by Bryson et al. (2019) confirms that the elements of teacher's wellbeing and satisfaction have a positive relationship and to the effectiveness of performance and teaching in educational institutions. This trend makes human resource practices a factor in boosting the teacher's performance and competitive advantage. It is important to note that a human resources management unit in a school system not only makes the teachers performance improved but also feels them motivated, appreciated and valued.

It is evident that the high involving human resource practices have been less studied in school context in Pakistan but has gained wide consideration in Western countries for a

decade. Rehman (2018) study shows that education planning and human resources practices are tantamount in achieving high performance in Pakistani schools. Further, the findings of the study are also supported by Ahmed et al. (2019). The results show that all the proposed hypotheses were accepted and their relationships were supported which again validates the research model. It is concluded that the government must promptly act towards schooling systems by establishing the human resource units which not only boosts the teachers' wellbeing and performance but also the overall employees' management on a well-established manner. The human resource practices have been proven in the western countries by adopting its practices and functions in schools because without running a human resource management unit or department the teachers' well-being (associated with motivation, satisfaction, and commitment) and performance (students' achievements and school performance) drastically declines. Therefore, the study findings emphasized that establishment of HR unit and practicing the high involving practices of human resource management in schools on a regular basis to advance the overall school system. This also enhances the social sustainability in the desired areas.

4.1 Theoretical Implications

There are several theoretical contributions of the current study. The positive and significant impact of high involving HR practices contributes to the social exchange theory. According to social exchange theory, people engage in social interactions with others based on the perceived costs and benefits of those interactions. The manner an organization treats its employees can greatly affect their perceptions of rewards in high HR practices. The satisfied employees exert more efforts due to sense of loyalty and commitment to the organization, enhancing productivity, commitment and satisfaction with their work. Secondly, it contributes to social exchange theory by indicating HR practices that improve employee personal wellbeing and creating trust and mutual respect among the employees. In this manner, employees reciprocate the by exerting more efforts on organizational performance and development. These efforts lead to productive work environment, where employees work together effectively. The significant effect of wellbeing on teachers' performance add to social exchange theory by emphasizing that teachers' wellbeing improves performance and development of organization. In addition, this study adds to job demand resource theory by establishing the link between employee's well-being and performance. The findings confirmed significant positive influence of employees' wellbeing and performance increases due to psychosocial safety climate. It indicates that a helpful and secure work environment provides satisfaction to employees and make them feel to be valued that eventually increases work performances.

4.2 Practical Implications

There are several implications of the present research with respect to employees'

performance in the organization. High-involvement HR practices provides autonomy to employees and contributes to the decision-making. These results findings depict that HR practices positively influences employee well-being. HR practices include training and development programs have a positive influence on employees' wellbeing. The training programs help employees to learn additional skills that help in career advancement and job security. Additionally, these programs provide employees to be more connected with the organization. Organizations provide resources and support to employees to grow and promote a sense of attachment with the organization. Therefore, it is recommended to schools to establish a learning culture and professional growth. They can implement strategies that soft skills and provision of training programs for learning technical skills. Schools should provide incentives to teacher for their participation, recognizing that confidence and increase competencies lead to increased employee's wellbeing and organizational development. It is recommended to policies makers to allocate resources for the professional development and training of the teachers. The resources can be in the form grants or subsidies that engage teachers in continuous skill development and learning in a more dynamic environment. The findings of the study indicate career development positively influences employees' well-being. Career development help employees to nourish and achieve the targets in their work. These targets help employees towards career advancement, and serve to motivate and engage them to be efficient and productive. Based, on these findings, it is recommended policy makers to prioritize employees career development that help them to achieve professional growth and improve their wellbeing.

Furthermore, the findings help schools to design and implement a comprehensive career development plans for employees' growth that include mentorship programs, goal-setting mechanisms, and direction for education sector development. They can also help in promoting initiatives for teachers' career goals that include leadership training, on the job training, and higher education scholarship.

Moreover, the results of this study show the constructive impact of performance appraisals on employees' wellbeing. The performance appraisals help workforce to get the feedback about their performance. This will motivate and enhance workforce self-esteem and their wellbeing. Similarly, the performance appraisals provide the clears direction to the teachers regarding objectives they need to achieved. This way they can be more productive at work. Therefore, there should be clear policies regarding teachers perks and privileges such as a handsome amount of salary which covers the basic cost of living and performance-based compensations. Such efforts enhance the satisfaction level of employees. Similarly, the well compensated employees feel sense of financial stability and security. The teachers will be more secure and satisfied when they are well compensated. Such perks will be the reason of satisfaction that bring more work-life balance. Such benefits motivate them to take additional responsibility at work. These benefits reduce employees stress and enhance their focus towards their assigned duties. The schools can support their teachers in numerous to

ways such as to initiate health and wellness programs, on site fitness facilities.

Schools can also implement policies and practices that promote work-life balance, such as flexible working arrangements or time off for personal needs. The result of moderating impact of psychosocial safety climate on the relationship between teachers' wellbeing and performance is strength when teachers feel psychosocial safety in the schools. A positive psychosocial safety climate is crucial for the well-being and performance of teachers. Employers can create a positive psychosocial safety climate by promoting healthy work practices, supporting employee well-being, and addressing and managing psychosocial risks in the workplace. Furthermore, schools should consider implementing peer support programs and providing training in conflict resolution to facilitate a psychologically safe environment. Finally, the policymakers play a significant role in this regard by developing guidelines for schools to create a psychologically safe environment. They should invest in anti-bullying and harassment training and policies that support a positive psychosocial safety climate, thus creating a nurturing and supportive work environment for teachers.

4.3 Future Research Recommendations

The study suggests several potential future directions. First, the future researchers can extend the existing research model by incorporating additional high-involving HR practices, such as recognition and rewards, safety and health, talent management and succession planning, along with exploring psychological variables that may influence teachers' performance at both the school and higher education levels. Second, it is advisable for researchers to conduct qualitative studies aimed at assessing transparent and open communication environments within schools, where feedback and ideas are not only welcomed but actively encouraged. Such investigations can shed light on opportunities for teacher training and professional development, while also providing a clearer path for career advancement. Third, while this study focuses on public sector high school teachers in Balochistan province, Pakistan, the same model can be applied in other provinces like Punjab, Sindh, and Khyber Pakhtunkhwa to compare HR practices and their impact on employee wellbeing. Finally, scholars should consider conducting a comprehensive systematic literature review to highlight the benefits of HR practices in educational institutions. This review should involve the identification of key performance indicators (KPIs) and the development of HR policies and practices that directly support the achievement of these KPIs.

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The Impact of IQ and EQ on Students' Psychological Well-being: An Empirical Study on University Students

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Abstract

The study attempts to gauge empirically the impact of Intelligence Quotient (IQ) and Emotional Quotient (EQ) on the student's psychological well-being. The population comprises university students. Data is collected through convenience sampling via a five-point Likert scale questionnaire. The total number of respondents in the survey were 200, which consisted of 109 males and 91 females. IQ and EQ are the independent variables, whereas psychological well-being is the dependent variable, with the moderating variables of Age and Gender. The study's findings reveal that IQ and EQ positively impact psychological well-being and are significant at a 99 per cent confidence interval ($p<0.01$). Gender does not moderate the relationship of IQ and EQ with well-being. On the other hand, the age group does moderate the relationship between EQ and psychological well-being.

Keywords: IQ; EQ; psychological well-being.

JEL Classification: C12, E71, I23, I31

1. Introduction

1.1 Background of the study

Emotional Quotient (EQ) became a subject of analysis in academic articles and thus reached its height in the early 1999s. According to Goleman (2003), this is EQ, not Intelligence Quotient (IQ), that predicts specific task-oriented skills and prospective leadership qualities. Goleman cited Lyle Spencer, Jr., president of Spencer Research and co-founder of Capacity

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International, who also works in EQ and technology. Only a small percentage of the five hundred or so jobs on which studies were conducted show that what one learns in school makes someone a better worker in future. One must enter the field, but having it does not mean it would automatically make one a star. Rather, possessing crucial traits of IQ leads to more venerable performance (Mashar & Astuti, 2022; Rainie & Anderson, 2017).

According to many studies, EQ is a more reliable indicator of work performance. Langston (2001) contributed to research that identified the accomplishments and shortcomings of eleven (Robbins et al., 2009), American presidents. The six attributes evaluated were organization, communication, vision, political skill, cognitive style, and EQ. These skills help people perform better even in their academics prior to joining specific professions. Although some studies have identified a positive correlation between EQ and academic achievement, the findings are variant. Additionally, it has been proposed that developing EQ can have a maturing effect (Goleman, 2003).

EQ is criticized for being a term that is too ambiguous, unable to be consistent, and whose validity has been questioned throughout recent years. The following are some of the early researchers' definitions of EQ: Goleman (2003) describes EQ as the ability to understand our own and other people's feelings, to inspire ourselves, and to effectively manage our own and other people's emotions. EQ refers to skills different from yet complementary to IQ-measured or academic intelligence. Bar-On (2004) states that EQ refers to connected emotional and social skills. These competencies determine how effectively we know and communicate with ourselves, understand and relate to others, and handle the demands and responsibilities of daily life. Recently, some research has also revealed that a person's aptitude for succeeding in architecture may rely on concepts from EQ, such as imagination, emotional intelligibility, and other forms of tacit knowledge (Hutabarat et al., 2023). As a result, it has been proposed that the traditional aptitude measures, such as more significant academic standing and IQ, are inadequate.

The psychological concepts of intelligence and happiness are two of the most well-known indicators. Academic articles examine how EQ is employed, which gained climax in the early 1999s. Works in EQ and technology have only a small number of better associations which recognize one's academic achievements (Segal et al., 2021, 2023). Numerous researches support the idea that EQ is a better indicator of work performance. (Langston, 2001) identified the accomplishments and shortcomings of eleven American presidents in research. EQ's detractors claim that it is an idea that is too unclear to be consistent, and its validity is questioned (Robbins et al., 2009). Over the past few years, EQ has become a prominent study area. Modern researchers have described EQ in the following ways. The ability to identify one's own and other people's emotions, support oneself, and effectively manage emotions in one's relationships was described as EQ (Goleman, 2003). Bar-On (2004) stands for skills different from academic intelligence or the precisely cognizable

qualities consistent with IQ, but they complement it. EQ is a cross-section of interrelated emotional and social competencies.

These competencies determine how well we understand and express ourselves, comprehend and relate to others, and manage daily demands and pressures. The capacity of people to succeed in architecture may also depend on EQ ideologies like creativity, emotional awareness, and other mien of tacit knowledge, according to some recent research (Hutabarat et al., 2023). As a result, it has been proposed that the traditional aptitude measures, such as more significant academic standing and IQ, are inadequate. Intelligence and happiness are two of the best-known constructs in psychology. Early studies examined the relationship between these two components, but the relationship stays uncertain for all purposes. Thus, few large-scale quantitative analyses have been conducted. Most studies have examined the relationship between intelligence and mental and functional disorders. (Jauk et al., 2013; Nakano et al., 2021; Seligman & Csikszentmihalyi, 2000; Su et al., 2022)

1.2 Objectives of the Study

The study's objectives are to investigate the relationship between EQ, IQ and students' well-being psychology and determine whether age groups and gender moderate the relationship of EQ and IQ with students' well-being.

1.3 Scope of the Study

The study aims to investigate the relationship between emotional and intellectual quotients and psychological well-being. It involves investigating the correlation between IQ, EQ and other measures of psychological well-being, including stress, academic achievements, self-esteem and interpersonal connections. A couple of moderating factors Age and Gender are also investigated in this study. The study attempts to shed light on the respective contribution of IQ and EQ on students' mental health and general well-being through empirical research.

1.4 Research Questions

1. What is the relationship between EQ and students' well-being psychology?
2. What is the relationship between IQ and students' well-being psychology?
3. How do EQ and IQ affect students' well-being psychology?
4. How does gender moderate EQ?
5. How does gender moderate IQ?
6. How does the age factor moderate EQ?
7. How does the age factor moderate IQ?

1.5 Statement of the Problem

One can track one's emotions, identify them apart from others, and use them to direct one's thoughts, feelings, and behaviors if one possesses EQ. Interpersonal relationships need EQ; thus, teachers anticipate emotionally intelligent pupils who can rapidly advance through the skills and master most of them. To succeed academically, one must have the ability to produce favorable results, such as self-awareness, teamwork, and social skills. Everyone faces numerous obstacles and challenges in this life. Students who struggle to earn a degree face a variety of difficulties. They must perform well academically, adhere to deadlines and regulations, complete tasks on time, and maintain positive relationships with their peers in a way that is acceptable to society. In contrast, keeping in mind that there is a lack of research examining the influence of EQ and IQ on students' psychological well-being in our cultural setting. These gaps must be filled over time through empirical research. Therefore, the modern study was created to investigate the relationship between EQ and IQ and students' well-being psychology. It also examines the connection between student demographic variations, such as gender, age, family income level, discipline, EQ and IQ levels.

2. Literature Review

2.1 Emotional Quotient

Emotions are crucial in controlling and managing our conduct; they are often so dominant that we have no choice but to act by their wishes. Emotions can be defined as the enthusiastic frame of our brain. Instead of being able to live normally, people become disabled if they lack emotional current. "Emotion" originates in the Latin word "mover," meaning evoke. Many psychologists have agreed to support the meaning of "emotion" in their ways, drawing inspiration from this derivation (Elfenbein, 2022a, 2022b, 2023; Eliot & Hirumi, 2019; Hascher, 2010; Izard, 2009; Slovak et al., 2023).

Morris (1979) claimed that intelligence is a general capacity and that emotion is a distinct, perceptive, and subjective experience that entails ongoing physiological changes of a person to adapt his thoughts to changing demands intentionally. The term means intelligence, which is the ability to act with devotion, analyses critically, and effectively manage one's emotional intelligence, as defined by (Wechsler, 1944). The capacity of an agent to accomplish goals in a range of situations is measured by intelligence (Legg & Hutter, 2007).

There are many ways to define emotional intelligence, but the question now on everyone's mind is: What is EQ? Describe emotions. What precisely is intelligence? In order to respond to this query, we can define EQ as the capacity to distinguish between various feelings and recognize emotions. The term "emotional intelligence" connects intelligence, feelings and emotions. It refers to the intelligent interaction of thoughts and controlled

emotions. It stands for the capacity to express emotions and develop thoughts. It increases our ability to precisely detect and provoke feelings, allowing us to regulate those emotions to promote intellectual and emotional development. The term "emotional intelligence" relates to joy, anxiety, and a desire to run away from others. (Segal et al., 2021, 2023).

Additionally, Beldoch (2017) coined the term "emotional intelligence," which is the capability to understand, control, and convey one's and other people's feelings. Although Beldoch coined the phrase in 1964, it only became widely used in 1995 by Golman. According to Golman's theory, Self-awareness, self-management, social awareness, and relationship management are the four components. Goleman (2003) described EQ as a range of abilities and traits that support effective leadership. Differentiating between emotions and feelings, modifying the environment, and achieving one's objectives are all examples of having EQ. Its final piece was lost when average people outperformed those with the highest IQs. Years of study suggest that EQ is a demanding trait that is somewhat imaginary. Four essential competencies that fall under social and personal competencies make up EQ. Personal competency assures one's capacity for self-awareness and self-management, whereas relationship management and social awareness abilities make up social competency. Self-management is the ability to use emotions to guide action. Self-awareness focuses on noteworthy emotions.

Mayer et al. (1990) concluded that EQ is a part of social intelligence. It requires the ability to monitor both one's own and other people's emotions. They list the four components of emotional intelligence: managing emotions, emotional perception, employing emotions, and understanding emotions. These components are organized from the most fundamental to the most advanced psychological processes; the lowest level, 25, is designed and managed with the most fundamental capacities to experience, understand, and express emotions, while the highest-level component is concerned with the contemplation of emotional regulation. Emotions spend much time in all facets of interpersonal interaction (Segal et al., 2023; Sotvedt, 2014).

The concept of "social intelligence," which (Mayer et al., 1990)used to describe a person's capacity to direct and use in adaptive social interactions, served as a foundation for the theory of EQ. Thorndike distinguished three types of intelligence: social, mechanical, and abstract.

2.2 Intelligence Quotient

Human intelligence includes reasoning, planning, problem-solving, abstract thought, understanding complex concepts, fast learning, and experience. It involves more than only reading books, developing specialized academic skills, or passing tests. Instead, it demonstrates a more profound and broader capacity to interpret our environment: to see,

comprehend, or comprehend what is required and what needs to be done (Colom et al., 2010). Intelligence differs from person to person, just like other human characteristics. Individual intelligence varies as a result of variances in upbringing and environment. It suggests that IQ disparities between people are more influenced by inheritance than by environment. However, individuals from the same family members typically have very different intellectual levels (by an average of about 12 IQ points). Among the social factors influencing intelligence, the child's school appears to have a significant impact. Unexpectedly, the caliber of kindergarten and first-grade education also matters a lot. Because of the more experienced teachers in higher grades, academic improvements diminish while non-cognitive gains continue. In addition to these social influences, physical activity also plays a part in intelligence. When it comes to children, it helps build and consolidate memory; for the elderly, it helps maintain executive functions like planning and scheduling mental processes (Li et al., 2021).

2.3 Psychological well-being

According to Strickland et al. (2019), in psychological well-being, a 12-week follow-up study examined the mediating role of perceived stress in female students as health professionals about emotional intelligence, life fulfilment, and subjective enjoyment. They discovered that those with higher EQ reported less stress and more enjoyment and fulfilment from life. Their findings imply that perceived stress mediates the association between emotional quotient and well-being markers, particularly life satisfaction and happiness. High levels of EQ encourage or assist a person in creating a good sense of who they are, which helps them to achieve high levels of self-esteem. People with high levels of self-esteem are more outgoing, self-assured, and capable of managing difficulties, which results in successful performance and a happy existence. Cazan and Năstasă (2015) demonstrate how intense success in academic settings or improved adjustment correlates with EQ. Furthermore, high EQ is linked to lower stress, anxiety, and burnout and higher life satisfaction.

2.4 Emotional Quotient and Psychological Well-being

Emotional Quotient is an emotional intelligence that is highly associated with psychological well-being. The people who have more emotions live happier. Many researches reveal that emotional intelligence and psychological well-being are correlated with happiness. The higher the positive emotions, the lower the negative emotions, and the more satisfaction. According to previous studies, emotional intelligence, greater intelligence, and psychological well-being impact students in the face of mental or physical health. There is clear evidence that emotional intelligence capacities predict characteristics connected to psychological well-being, including a positive relationship between life satisfaction and happiness. (Guerra-Bustamante et al., 2019)

H1: EQ has a positive impact on students' psychological well-being.

2.5 Intellectual quotient and psychological well-being

The intellectual quotient is human intelligence, and it differs from person to person. (Gottfredson, 2008) posited that (subjective well-being) has no relationship of happiness with intelligence. However, the students IQ have a positive impact on psychological well-being. (Wigtil & Henriques, 2015) finds that IQ has a positive relationship with psychological well-being as well as with their dimensions, psychological well-being is a broad dimension, i.e., environmental mastery, personal growth dimension, and purpose in life of psychological well-being.

H2: IQ has a positive impact on students' psychological well-being.

2.6 Theories of Emotion

There are many ideas about emotions. However, a few that are relevant to this research are listed below in more detail:

2.6.1 James Lange Theory

Lange (1984) claimed that physiological reactions give rise to emotions. We may experience emotions due to physical and physiological changes brought on by the perception of a stimulus. A common misconception about emotions is that they are judgments about situations that cause feelings and bodily changes. These bodily alterations come before emotions, similar to feelings in that they represent our subjective experience. People feel emotions as they see their bodies' physiological reactions to outside stimuli. This hypothesis claims that people do not cry because they are depressed. Instead, when individuals are unhappy, they cry; when joyful, they smile. According to this hypothesis, many physiological states correspond to the various experiences of emotions.

2.6.2 Cannon-Bard Theory

According to the theory, the thalamus and hypothalamus, two lower brain regions, trigger emotional responses. Cannon asserts that an external input may activate receptors, causing excitation to initiate cortical impulses. Upon entry, the impulses are connected to conditioned processes in the cortex, which choose the appropriate course for the subsequent reaction. This reaction causes the thalamic processes to be stimulated. The thalamic processes may be prepared to discharge after they have begun to function. A unique combination of thalamic neurons firing creates the given emotional expression. Then, these neurons release abruptly and vigorously. Cannon noted that these neurons reside in and around the thalamus and are close to relaying information into sensory systems from the periphery to the brain. Additionally, these neurons fire in a particular order; they enervate muscles

while simultaneously stimulating visceral afferent pathways, which in turn stimulate afferent pathways into the cortex by irradiation and direct association. (Lang, 1994)

2.6.3 Activation Theory

Stalker (1961) proposed a theory named activation theory and observed that Emotions describe situations of boosted arousal in ways that are qualitatively distinct types of mental, physiological, and behavioral processes for the mental provocation it is essential to be effectively motivated. According to Lindsley, activating the brain's cortical areas from the reticular system eventually excites the organism. The emotional provocation could stimulate the reticular portion of the intellect residing in the brainstem, delivering signals to the brain and thalamus to arouse emotions. An overview of the outdated emotional idea of energy mobilization is a frequent activation theory (Lang, 1994). Early studies demonstrated how emotions like anger and terror help the body prepare for emergency responses.

2.6.4 Evolutionary Theory of Emotion

Campbell (1997) offered that emotions are developed because they are changeable and adapted to social beings and animals at birth. Feelings of love, devotion, fear and hate are different feelings. The feeling of love and affection guides people to search for their partners. Moreover, from any danger or fear, people self-defense and change their place to protect themselves from the danger, or they fight if they are vital to compete against their fear. Emotions also work positively in the related environment, which helps people improve themselves for survival and success. Not every person feels the emotions of people. Only some people can understand their emotions and feelings, and those people play an essential role in the environment for the survival and safety of people.

2.7 Conceptual Framework

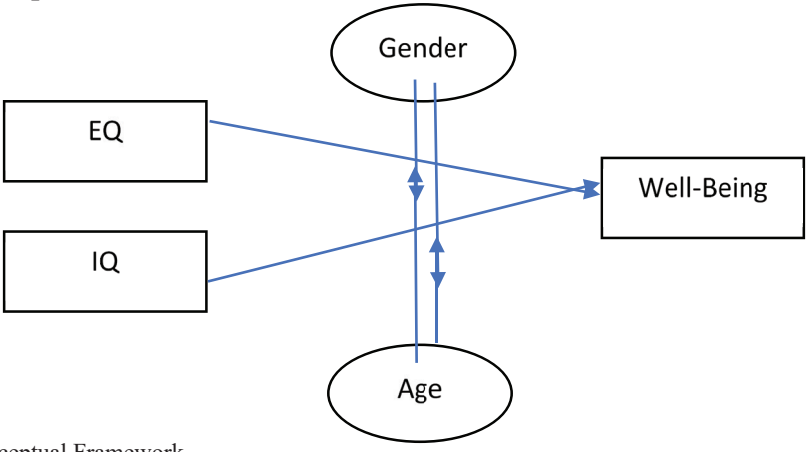

Figure 1: Conceptual Framework

2.8 Hypotheses

H3: Gender moderates the relationship between EQ and psychological well-being.
H4: Gender moderates the relationship between IQ and psychological well-being.
H5: Age moderates the relationship between EQ and psychological well-being.
H6: Age moderates the relationship between IQ and psychological well-being.

3. Methodology

3.1 Data & variables

The report follows the primary facts-gathering methods. The study variables are IQ and EQ independent variables, and psychology is the dependent variable. The records have been accumulated through the survey. The survey was ready on Google Forms, and it was closed-ended questions. The unipolar Likert scale was employed in this survey. Scales comprising 1, 2, 3, 4, and 5, from the least to the highest level of agreement was used.

3.2 Population

The information was gathered from university students. The survey was taken from different areas of Pakistan: Nawabshah, Sanghar, Karachi, Lahore etc. We targeted university students and collected a sample from a wide range of data from different cultures.

3.3 Inclusion Criteria

Samples would be taken from university students who were students of different universities. Data could have been obtained from university students via online surveys about the impact of IQ and EQ on student well-being.

3.4 Sample and Sampling Technique

The sample size is 200. The convenience sampling strategy to pick up the sample indicated that the questionnaire was filled out at certain places. The purposive sampling technique was used for collecting information since the respondents fulfilled the criteria.

3.5 Statistical Analysis

Descriptive statistics, including the questionnaire's reliability, demographics' frequencies, averages and dispersion, are computed. Moreover, correlation analysis is carried out to establish the association among variables. In order to compute impact assessment, a multiple regression analysis is executed. Furthermore, moderation analysis is also carried out to gauge whether being male or female and different age groups influence the relationship

between the variables.

4. Results & Discussion

4.1 Reliability Statistics

The reliability statistics have been used to assess the reliability or internal consistency of items to measure the constructs in the context of the ongoing research. The literature showed that Cronbach alpha values indicated the construct's reliability. EQ and psychological well-being results are shown below in Table 1. The results showed that EQ, IQ, and psychological well-being had achieved their reliability based upon Cronbach alpha values of 0.760, 0.836, and 0.886, considered good as they are greater than 0.7 – the benchmark.

Table 1
Reliability Statistics

Variables	Cronbach's Alpha	No of items
EQ	.760	8
IQ	.836	8
PWB	.886	8

4.2 Demographics

The Demographics table shows that the overall number of respondents was 200, dominated by male respondents comprised 54.5% of the sample. In the age matrix, respondents aged 21-23 are the highest (37%), followed by 18-20 (27.5%), which depicts that 64.5% of the respondents are youngsters.

Table 2
Demographic Statistics

	Classes	Frequency	Per cent
Age	18-20	55	27.5
	21-23	74	37.0
	24-26	25	12.5
	27-29	22	11.0
	30+	24	12.0
	Total	200	100.0
Gender	Male	109	54.5
	Female	91	45.5
	Total	200	100.0

4.3 Descriptive Statistics

The descriptive statistics table shows that the average score of all the variables is greater than 3, which falls in the upper half on the five-point Likert scale and is considerable. The spread about the average score (standard deviation) is less than one, and in one case, it is also considerable. So far, the distribution statistics are concerned; both are close to zero, which depicts that the variables are normally distributed.

Table 3
Descriptive Statistics

	N	Mean	Std. Deviation	Variance	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
EQ	200	3.2375	.82049	.673	-.511	.172	.093	.342
IQ	200	3.3888	.90502	.819	-.665	.172	.200	.342
PWB	197	3.5457	1.00785	1.016	-.850	.173	.011	.345
Valid N (list-wise)	197							

4.4 Correlation Analysis

The correlation analysis, as shown in the table below, describes that the association of EQ and IQ with psychological well-being are positive and significant at a 99% confidence interval. Every incremental score in EQ and IQ has a positive association with the psychological well-being score of university students.

Table 4
Correlations

		PWB	EQ	IQ
PWB	Pearson Correlation	1	.711**	.810**
	Sig. (2-tailed)		.000	.000
	N	200	200	200
EQ	Pearson Correlation	.711**	1	.702**
	Sig. (2-tailed)	.000		.000
	N	200	200	200
IQ	Pearson Correlation	.810**	.702**	1
	Sig. (2-tailed)	.000	.000	
	N	200	200	200

**. Correlation is significant at the 0.01 level (2-tailed).

4.5 Regression Analysis

The table below shows that the model's goodness of fit is 69.6%, i.e., changes in the IQ and EQ scores translate to 69.6% changes in the psychological well-being score.

Moreover, the R-square and adjusted R-square are closer, i.e., the difference between the R-square (.696) and the adjusted R-square (.693) is less than 5%, which endorses the adequacy of the sample size.

Table 5
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.834[a]	.696	.693	.55515
a. Predictors: (Constant), IQ, EQ				

The ANOVA result shows that the overall model is significant as F=225.928 (F≥4), followed by the p-value=0.000 (p<0.01). It also shows the model's goodness of fit (R-square; sum square of regression to sum square of total ratio) is significant.

Table 6
ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	139.256	2	69.628	225.928	.000[b]
	Residual	60.713	197	.308		
	Total	199.969	199			
a. Dependent Variable: PWB						
b. Predictors: (Constant), IQ, EQ						

The regression table shows the gradients of the exogenous variables. If one unit of IQ and EQ score increases, the corresponding psychological well-being score will increase by 0.679 and 0.343 units, respectively. Both variables are significant as their t-values are greater than 2, followed by their p-values are less than 0.01. moreover, there is no multicollinearity issue as the VIF – variance inflationary factor is less than 5.

Table 7
Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	.126	.169		.746	.457		
	EQ	.343	.067	.281	5.092	.000	.507	1.974
	IQ	.679	.061	.613	11.112	.000	.507	1.974
a. Dependent Variable: PWB								

4.6 Gender as a Moderator

An important investigation is whether the relationship between EQ and IQ with psychological well-being differs concerning gender, i.e., for male and female respondents. Gender does not moderate the relationship of EQ and IQ with psychological well-being because the same results were obtained (positive and significant; p-value<0.01) for male and female respondents when the data was segregated on the basis of gender.

Table 8
Coefficients[a]

Gender	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
			B	Std. Error	Beta			Tolerance	VIF
		(Constant)	.198	.220		.902	.369		
Male	1	EQ	.292	.101	.248	2.879	.005	.381	2.623
		IQ	.694	.095	.627	7.280	.000	.381	2.623
		(Constant)	-.036	.268		-.133	.895		
Female	1	EQ	.411	.092	.318	4.453	.000	.668	1.498
		IQ	.678	.079	.612	8.561	.000	.668	1.498

a. Dependent Variable: PWB

4.7 Age as a Moderator

Another important investigation is whether the relationship between EQ and IQ with psychological well-being differs concerning different age groups. The data set was segregated based on age groups. The age group was found to be moderating for EQ. The IQ for all age groups was found significant; therefore, it does not moderate the relationship. On the other hand, EQ was found significant for age groups 21-23 (p<0.000) and 30+ (p<0.05), whereas insignificant for the rest of the age groups (p>0.05).

Table 9
Coefficients[a]

Age	Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
			B	Std. Error	Beta			Tolerance	VIF
18-20	1	(Constant)	.226	.277		.817	.418		
		EQ	.188	.127	.153	1.478	.145	.401	2.492
		IQ	.793	.108	.758	7.337	.000	.401	2.492
21-23	1	(Constant)	.477	.263		1.815	.074		
		EQ	.660	.106	.587	6.224	.000	.500	2.000
		IQ	.320	.101	.300	3.178	.002	.500	2.000
24-26	1	(Constant)	.614	.535		1.149	.263		
		EQ	.056	.159	.047	.355	.726	.735	1.360
		IQ	.837	.137	.818	6.120	.000	.735	1.360
27-29	1	(Constant)	.216	.511		.423	.677		
		EQ	.087	.215	.072	.404	.690	.467	2.140
		IQ	.869	.194	.795	4.482	.000	.467	2.140
30+	1	(Constant)	-1.764	.529		-3.337	.003		
		EQ	.436	.190	.262	2.297	.032	.617	1.620
		IQ	1.081	.170	.726	6.351	.000	.617	1.620

a. Dependent Variable: PWB

5. Discussion

The study aimed to investigate the relationship between EQ, IQ, and students' psychological well-being. EQ positively impacted psychological well-being, and IQ also had positive impacts. Two moderators were used in this research: gender and Age. Gender was not moderating here. The EQ was higher in females as compared to males. However, some age groups were moderating here because people's emotions changed with age.

EQ and IQ, both positively impacted students' psychological well-being. This result is consistent with previous research indicating a relationship between emotional intelligence, cognitive abilities, and overall well-being. Strickland et al. (2019), Higher levels of emotional and intellectual intelligence are associated with better psychological well-being among university students, according to the correlation study, which found a substantial positive relationship[p] between EQ, IQ, and psychological well-being scores.

Moreover, the study also discovered that the association between EQ, IQ and psychological well-being was not moderated by gender. Both EQ and IQ have a favorable effect on psychological well-being, independent of gender. This finding is similar to the Cazan and Năstasă (2015) It has been demonstrated that emotional intelligence varies by gender and has implications for well-being. Still, this is consistent with other studies showing

comparable emotional intelligence and well-being levels in genders. Strickland et al. (2019).

Furthermore, Age was found significant for age groups 21-23 and 30+, whereas insignificant for the rest of the age groups. Their fore, it found to moderate with some age groups with the relationship between EQ and psychological well-being, and results are similar to the Strickland et al. (2019), but not with IQ and psychological well-being across all age groups.

Overall, the study's findings provide more support to university students with EQ, IQ and psychological well-being. In order to improve students' mental health and quality of life, they pay attention to the necessity of interventions and educational initiatives to strengthen these skills. Furthermore, the results indicate that age and gender must be considered when creating these kinds of treatments to guarantee their efficacy across a range of demographics.

6. Conclusion, Limitations & Recommendation

6.1 Conclusion

Better psychological well-being resulted from EQ, while depression and anxiety disorders were more likely to affect those with lower EQ scores. On average, older persons were better at managing their emotions and had higher levels of EQ, but emotional skills could also boost EQ. The results concerning the current study on EQ and student psychology well-being determined a strong positive association between psychological health and IQ. As a result, this study shed light on how EQ affected students' mental well-being, personal or social entrepreneurship, academic success, and psychological health in general. This significantly affected research since it showed how EQ development might improve teenagers' social well-being.

The study investigated the relationship between students' personalities, EQ, and other psychological health indicators. EQ was significant in a student's success and personal well-being. In addition to intelligence, social skills and emotional maturity aided in adjustment and life success. Additionally, it attempts to look into the connections between IQ and EQ scores and differences in student demographics such as gender, age, family income, and discipline. While keeping in mind that, in our cultural context, there was a lack of studies examining the impact of EQ and IQ on students' psychological well-being. These gaps need to be gradually filled by empirical study. Consequently, the current study aimed to examine the connection between Students' psychological well-being, IQ, and EQ, all measured using a quantitative approach.

6.2 Limitations

This study focused on the impacts of IQ and EQ on students' psychological well-being. Still, other related variables like social quotient, spiritual quotient, and adversity quotient were not included. Other researchers would study these variables in similar geographic and demographic conditions. The second limitation was the demographics in this study. We included only university students. Considering the population of Pakistan, i.e., over 200 million, we could not generalize results according to the whole population and other demographic areas like working class, school students, and aged population. Hence, future researchers could study other demographic and geographic areas.

6.3 Recommendation

The survey of this research included the university students of different cities, i.e., Nawabshah, Sanghar, Karachi and Lahore, through online surveys for the data collection of IQ, EQ and psychological well-being. Moreover, it was found that the IQ of students was the same as since childhood. The emotions of the people were changed from time to time. Thus, it was recommended that we work on different age factors, study IQ, and develop scales for measuring IQ in the future.

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Questionnaire

1 is the lowest, and 5 is the highest level of agreement over the Likert scale.

Age	**18-20**	**21-23**	**24-26**	**27-29**	**30+**
Gender	**Male**		**Female**		
When I experience a positive emotion, I know to make it last?	1	2	3	4	5
Emotions are one of the things that to make my life worth living?	1	2	3	4	5
I arrange events to others enjoy?	1	2	3	4	5
I find it hard to understand non-verbal message of other people?	1	2	3	4	5
I accept good things to happen?	1	2	3	4	5
When I am in a positive mood, solving problem is easy for me?	1	2	3	4	5
When I am face with a challenge, I gave up because believe I will fail?	1	2	3	4	5
It is difficult for me to understand why people feel the way they do?	1	2	3	4	5
I do not become defensive when criticized?	1	2	3	4	5
I can stay calm under pressure?	1	2	3	4	5
I am positive?	1	2	3	4	5
I can freely admit to making a mistake?	1	2	3	4	5
I manage anxiety, stress, anger, and fear for growth?	1	2	3	4	5
I maintain a sense of humor?	1	2	3	4	5
I try to see things from another's perspective?	1	2	3	4	5
I recognize how my behavior affects others?	1	2	3	4	5
I felt that others Love me and appreciate me?	1	2	3	4	5
My life was well balanced between my family, personal and school activity?	1	2	3	4	5
I am able to find answers my problems without trouble?	1	2	3	4	5
I smile easily?	1	2	3	4	5
I have goals and ambitions?	1	2	3	4	5
I have self-confidence?	1	2	3	4	5
I am true to my self being natural at all times?	1	2	3	4	5
I feel emotionally balanced?	1	2	3	4	5

Green Human Resource Management: A Decadal Examination of Eco-Friendly HR Practices

Waheed Ullah* Syed Mudasser Abbas** Lihua Wei*** Atif Nadeem****

Abstract

Academic and professional communities throughout the world have shown a great deal of interest in the topic of environmental or green human resource management (HRM) in the last decade. Despite this growing interest, there remains a lack of comprehensive analysis in this area. This study aims to fill this lack by conducting a systematic and extensive review of the literature. The objectives of this paper consist of three spectrums: firstly, to conduct an in-depth examination of literature related to the Green HRM studies encompassing diverse scopes, methodologies, and contexts, secondly, to explain various focal themes within the Green HRM discourse; and thirdly, to suggest potential avenues for future scholarly inquiry. Adopting systematic literature review, the selected articles for the review were classified into five distinct thematic areas within Green HRM, as identified from the existing body of literature. The research in the area of Green HRM has witnessed a substantial increase over the past 12 years. This review encompasses 70 articles, predominantly employing quantitative methodologies and originating from developing countries. The analysis reveals that the most significant focus within these studies has been on how Green HRM influences both the firm and employees. The scope of this review is confined to academic articles accessible through online databases, specifically those containing terms such as "Environmental training", "Green training," "Green HRM," and "Green human resource". Only peer-reviewed journal papers of the highest caliber are included in the review; books and conference proceedings are not included. This research organizes and synthesizes seventy peer-reviewed articles researches that were published in renowned research journals between 2007 and 2019. It advances our knowledge of the state, trends, and prospects for Green HRM research in greater detail.

Keywords: Green HRM; environmental HRM; green training; online databases.

JEL Classification: M12, 015

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1. Introduction

Nations worldwide, from developed countries like Australia and the USA to emerging economies such as China and Brazil, are experiencing significant impacts due to the escalating demand for sustainability and eco-friendly practices. This global trend underscores the urgency for adopting green practices. In contemporary global economy, businesses ought to be environmentally sentient, moreover, being competent and value-driven in today's unsparing worldwide economy. Conferring to the rising apprehensions about the environment around the globe have led to upsurge in the espousal of eco-friendly operations by businesses, serving them to become both competitive. Scholars like de Souza Freitas et al. (2012), Jackson et al. (2011), and Renwick et al. (2016) have stressed the serious role of human resource management (HRM) in this green evolution. Applying green methods in HRM processes could lead to sustainable organizations. Green HRM has grown significant consideration in the last ten years as more people comprehend how significant it is for refining business sustainability and dropping environmental effects. Subsequently 2016, there has been significant growth in this arena of study due to a rise in scholarly emphasis on Green HRM research (Yusliza et al., 2017; Dumont et al., 2016; Jabbour & Renwick, 2018; Guerci et al., 2016; Yong et al., 2019).

HR departments are implementing Green HR practices as a consequence of increased public awareness of environmental issues. These practices center on projects like waste management, paperless operations, and carbon footprint reduction (Ahmad, 2015). HR is essential for starting green projects, engaging employees in green initiatives, and modernizing existing protocols (Mishra et al., 2017). According to Jabbour and Santos (2008), green HRM is seen as a strategic, ongoing organizational transformation with great potential for sustainability (Sawang & Kivits, 2014). However, for implementing environmental measures within a firm to be effective, many organizational functions, especially HRM, must participate in diverse ways (Del Brio et al., 2007). The HR department plays a vital role in developing and putting into practice sustainable company strategies, establishing corporate values and sustainability plans, and striking a balance between traditional financial measurements and social and environmental goals (Abbas et al., 2024). Despite the growing attention on Green HRM, research topics and focus areas within this discipline are still scattered. Therefore, developing a comprehensive understanding and overview of Green HRM research is essential. Currently, there is a gap in extensive literature reviews that explore and analyze the promising literature in Green HRM. This study attempts to fill this knowledge gap by providing in-depth perspectives and insights into Green HRM research published in esteemed research journals. The research aims to investigate how Green HRM studies are represented in terms

of journals, years, settings, and research methodologies, among other aspects. Furthermore, the objective is to carry out a methodical analysis of the previous scholars highlight the areas in Green HRM for further investigation and issues that have already been explored. Two main research questions are addressed in this paper:

- RQ1. What is the developmental trajectory of Green HRM research current literature?
- RQ2. What is the mechanism of dividing green HRM into specific discourse?

The organization of the research is as below: Section 2 explains the review process. The results are shown in Section 3. Section 4 presents the discussion and summary of the review While section 5 concludes, which also offers recommendations, future research directions, and a summary of its distinctive contributions.

2. Review Methodology

In order to perform meta-analysis of the extant literature and consequently derive tangible conclusion in the field of Green HRM, this scholarship adopts a systematic literature review as recommended by Tranfield et al. (2003). The objective of this research is to systematically categorize the existing knowledge base about Green HRM among various thematic areas and to pinpoint potential directions for forthcoming scholarly inquiries. Following the proposed methodologies of Rashman et al. (2009) and Hohenstein et al. (2014), the study was conducted in four phases: literature selection in specified time frame, selection of relevant databases, choosing articles relevant to the study, and categorization of the articles.

2.1 Determining the Time Frame for Literature Selection

The study covers articles that we published between 2007 and 2019. The starting years of 2007 is based on Unnikrishnan and Hegde's (2007) work, which accentuated the significance of environmental training in the Indian industry's adoption of pro-environmental practices. Moreover, 2019 as a ceiling years was selected to incorporate the latest developments in the field that is increasing gaining scholarly attention. addressing this increasingly vital subject.

2.2 Database Selection Criteria

To gather relevant literature on Green HRM, this study utilized multiple online databases, conducting searches exclusively in English. Among the databases included were Emerald, Science Direct, Taylor & Francis, SAGE Publications, Wiley Online Library, and Intercedence Publishers. However, this study acknowledges that the database compilation is not exhaustive.

2.3 Process of Article Selection

Adhering to a systematic review process depicted in Figure 1, the initial step involved defining specific keywords for the database search. These keywords included terms like “Green HRM”, “Green human resource management”, “Environmental HRM”, “Environmental training” and “Green training”. Searching was conducted across titles and full texts in the selected databases, focusing on publications from 2007 to 2019. This initial search yielded 110 articles. Subsequent steps involved scrutinizing the abstracts to assess their relevance to Green HRM. Articles not aligning with the study’s focus were excluded to maintain thematic consistency and minimize bias. Additionally, duplicate articles were removed following Rashman et al. (2009) approach. This refinement resulted in a final selection of 70 articles, chosen for their originality, clear objectives, and relevance.

2.4 Classification of Selected Articles

To organize the 70 selected journal articles, a bibliographic list was compiled and entered into an Excel spreadsheet for analysis. The articles were then categorized into five primary thematic areas, reflecting the predominant trends in the existing literature.

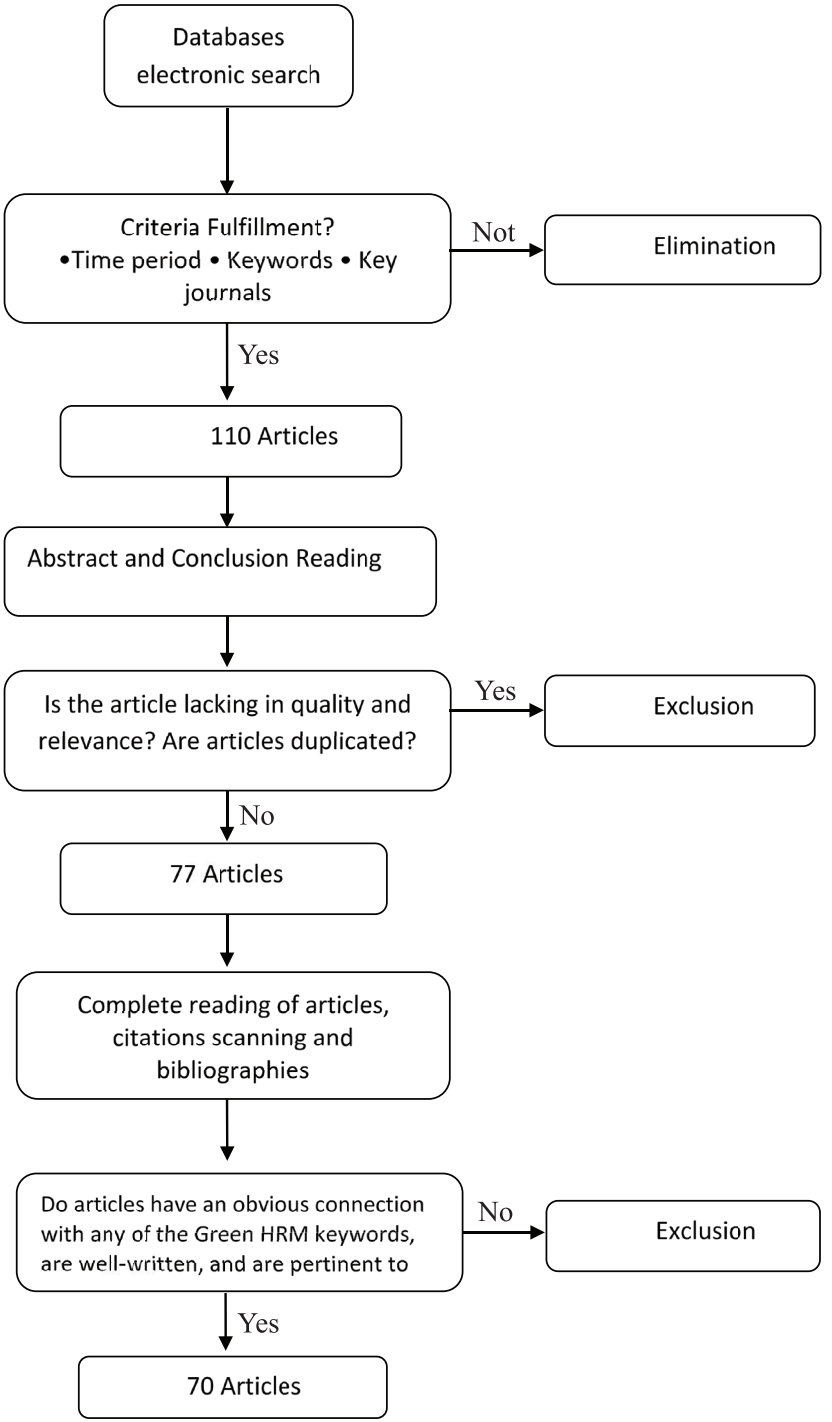

Figure 1: Overview of article selection Process

3. Findings

In the exploration of Green HRM, this study meticulously analyzed 70 articles, categorizing them into five primary focus areas. The essential findings from these articles, distributed across the different focus areas, are concisely presented in Table I. The subsequent sections provide an in-depth discussion of these critical dimensions.

3.1 Focal Area 1: Conceptualization, Reviews and Models of Green Human Resource Management

Given the relatively recent emergence of Green HRM as a field of study, numerous scholars have endeavored to conceptualize this area. Through analysis across diverse contexts, they scrutinized Green HRM, proposing conceptual frameworks to clarify its impact on individuals and organizational dynamics.

Five dimensions are most frequently mentioned in the literature, despite significant variation in the dimensions reported by different studies. These consist of green performance management, green hiring, training, green selection, and development, as well as green awards and pay. Furthermore, Jackson et al. (2011) offered a thorough examination of numerous functional HRM methods and recommended topics for further study of the interplay between environmental management and strategic HRM. Additionally, it has been suggested that green HRM influences cost-cutting environmental (Siyambalapitiya et al., 2018), and organizational efficiencies (Sriram & Suba, 2017), and employee eco-friendly behavior (Mukherjee & Chandra, 2018).

Table 1
Concepts/Model/Reviews of Green HR

Author(s)	Year	Key Themes
Shah	2019	Multidimensional nature of Green HRM (e.g., green job design, recruitment, training).
Jabbour and Renwick	2018	Human element in sustainable organizations, new research agenda proposal

To be continue

Mukherjee and Chandra	2018	Impact of Green HRM on employee behavior towards environmental sustainability
Siyambalapitiya et al.	2018	Eight dimensions of Green HRM (functions, practices, employee relations).
Zaid et al.	2018	Model studying Green HRM's effect on environmental performance.
Ren et al.	2018	Refined Green HRM conceptualization, measurement, and integrated model development are required.
Sriram and Suba	2017	Employee commitment's link to Green HRM effectiveness, impacts on organizational effectiveness.
Tang et al.	2017	Five core dimensions of Green HRM (e.g., green recruitment, training, performance management).
Jabbour and De Sousa	2016	Foundation of Green Supply Chain Management, role of culture, teamwork, empowerment.

To be continue

Renwick et al.	2016	Factors such as eco-friendly hiring, skill sets, staff involvement, and connections between financial and environmental performance.
Tariq et al.	2016	Employee empowerment's mediating effect on motivation for Green HR practices.
Chen and Wang	2013	Role of Green production HRM in reducing costs, addressing workforce diversity.
Jabbour	2013	Framework for research on environmental training.
Milliman	2013	HR's role in encouraging employees' commitment to sustainability and proactive environmental initiatives
Renwick et al.	2013	Recognizing how green HRM practises affect employees' enthusiasm for environmental causes.
Jackson et al.	2011	In-depth analysis of HRM functions in environmental sustainability.
Muster and Schrader	2011	Innovative concepts in green work-life balance and strategic HRM integration with environmental sustainability.

Table 2
Implementation of Green HRM

Author(s)	Year	Key Themes and Findings
Leidner et al.	2019	Green HRM practices influenced by contextual situations.
Gupta	2018	Identification of six main attributes of Green HRM with an emphasis on green training.
Jain and D'lima, Nobari et al.	2018	Generation Y's attitudes towards environmental sustainability and key factors in Green HRM implementation.
Mishra, Guerci and Carollo, Haddock-Millar et al.	2016	Informal practice of Green HRM in the Indian sector and variability in environmental sustainability integration.
Dias-Angelo et al. Mishra et al. Neto et al.	2014	Alignment of HRM with environmental objectives and best practices for sustainable development.
Unnikrishnan and Hegde,	2007	Training methods for eco-friendly production and the influence of green human and relational capital on Green Human Resource Management

Table 3
Enablers of adoption of Green HRM (company level)

Author(s)	Year	Key Themes
Yong et al.	2019	Green HRM is positively affected by green human and relational capitals, however, green structural capital does not show a noteworthy relationship with Green HRM. The effectiveness of Green HRM is significantly enhanced by the support of senior management and a commitment to environmental principles.
Obeidat et al.	2018	Green employee empowerment significantly enhances all Green HRM practices.
Yusliza et al.	2017	The role of HR business associate is vital for successful Green HRM implementation, while E-HRM's influence on Green HRM is minimal.
Guerci et al.	2016	All Green HRM practises are impacted by customer pressure, but regulatory pressure has the biggest impact on green recruiting. Green HRM acts as a mediator in the interaction between stakeholder demand and environmental performance.
Yong and MohdYusoff	2016	Green HR practices have positive coorelation with the strategic positioner role, while green job analysis, descriptions, and awards are positively correlated with the change advocate role.
Sawang and Kivits	2014	Environmental attitudes of senior management, stakeholder norms, and perceived green resource readiness drive the adoption of green HR initiatives.

To be continue

Teixeira et al.	2016	Transforming environmental training into proactive green management requires technical green practices, organizational culture and teamwork, and backing from senior management.
Yusliza et al.	2017	Employee empowerment in green initiatives significantly influences all aspects of Eco-HRM. The HR business partner's role is critical for successful Green HRM, while E-HRM shows minimal impact.
Guerci et al.	2016	While regulatory pressure primarily affects green employment, customer pressure affects all Green HRM practises. The impact of stakeholder pressure on environmental performance is mitigated by green HRM.
Yong and Mohd-Yusoff	2016	All Green HRM practices have a favorable correlation with the strategic positioner role, while certain green HR activities and rewards are associated with the change champion role.
Sawang and Kivits	2014	The decision to implement green HR initiatives is largely influenced by senior management's environmental attitudes, stakeholder conventions, and preparedness for green resources.
Teixeira et al.	2016	Environmental training can become proactive green management through the use of technical green practices, teamwork, organizational culture, and top executives support.

Table 4
Outcome of the Adoption of Green HRM (Company level)

Author(s)	Year	Findings
Pham et al.	2019	Direct influences of Green HRM on OCBE. Enhancement of voluntary environmental actions through training, performance management, and employee engagement.
Silva et al.	2019	Organized environmental training aligned with sustainability goals enhances competencies for environmental sustainability.
Al Kerdawy	2018	Positive impact of Green HRM and CSEV on CSR activities adoption, with CSEV amplifying Green HRM's effect.
Bombiak and Marciniuk-Kluska	2018	Positive correlation between the impact assessment of Green HRM activities and their implementation for sustainable development.
Obeidat et al.	2018	Through mediating the relationship between management support, internal orientation, and performance, green HRM positively influence environmental performance.
Rawashdeh	2018	Green HRM is being implemented in Jordanian hospitals in a moderate manner that connects its principles to environmental performance.
Yusoff et al.	2018	Positive relationships between green recruitment, training, development, compensation, and environmental performance, except for green performance appraisal.

To be continue

Zaid et al.	2018	They found that green supply chain management (SCM) and green human resource management (HRM) work together to positively impact sustainable performance in all spheres—economic, social, and environmental. The limited outcomes of environmental training are viewed as having the ability to co-evolve sustainable procurement, environmental maturity, and training.
Aragão and Jabbour	2017	Implementation of Green HRM at a moderate level that has a favourable relationship with environmental performance.
Masri and Jaaron	2017	Significant positive impacts on GSCM from green training, empowerment, pay and rewards, with resistance to change as a moderating factor.
Nejati et al.	2017	Green HRM system enhances sustainability strategies, potentially improving employee well-being and organizational performance.
Gholami et al.	2016	Green training, participation, pay, performance management, and environmental performance are all positively correlated.
Guerci et al.	2016	Financial and environmental performance are positively impacted by green HRM and GSCM, with GSCM acting as a mediating component.
Longoni et al.	2016	Enhancement of the link between environmental management and financial performance by Green HRM.

To be continue

O'Donohue and Torugsa	2016	Green HRM practices encourage voluntary environmental behaviors, mediated by employee support for environmental management.
Pinzone et al.	2016	Green purchasing, customer cooperation, and supply chain management are all made easier by green training.
Teixeira et al.	2016	Environmental training correlates with the environmental management in majority of Brazilian companies having ISO14001.
Jabbour	2015	Limited use of HRM practices to encourage eco-friendly employee behaviors.
Zibarras and Coan	2015	Positive link between EMS implementation and work satisfaction, staff retention/recruitment, and HR economic benefits.
Wagner	2013	Businesses that use sophisticated environmental human resource strategies stand out from the competition and save money on pollution control devices.
Carmona-Moreno et al.	2013	Incomplete integration of environmental issues in traditional HRM practices like selection and financial rewards.

Table 5
Outcome of the Adoption of Green HRM (Employee level)

Authors	**Year**	**Findings**
Kim et al.	2019	Green HRM improves environmental performance, pro-environmental behavior, and organizational commitment in hotels.
Roscoe et al.	2019	The association between green HRM practices and environmental performance is positively mediated by aspects of a green company culture.

To be continue

Chaudhary	2018	Green HRM's influence on job pursuit intentions, mediated by organizational prestige and moderated by environmental orientation.
Luu	2018	Positive relationship between training, empowerment, rewarding for eco-friendly behaviors, and green recovery performance, with mediating and moderating factors.
Moraes et al.	2018	Environmental training's influence on eco-efficiency, with potential improvements through employee autonomy and green team integration.
Saeed et al.	2018	Pro-environmental behavior benefits from green human resource management, mediated by psychological capital and moderated by environmental knowledge.
Cheema and Javed	2017	The sustainable environment is significantly influenced by green HRM, and there is a partial mediation effect between green HRM and CSR.
Ragas et al.	2017	Green HRM's effect on employee lifestyle and job performance.
Dumont et al.	2016	Direct and indirect influence of Green HRM on in-role and extra-role green behavior, mediated by psychological green climate.
Guerci et al.	2016	Impact of green reputation on applicant attraction and the relationship between green and traditional recruitment practices.

To be continue

Shen et al.	2016	Employee task performance, organizational citizenship behavior, and intention to quit are all influenced by perceived green HRM via a motivating, social, and psychological procedures involving identification of the organization. Perceived organizational support, which also indirectly affects employee workplace outcomes through this identification, attenuates the impact of perceived green HRM on organizational identification.

3.2 Focal Area 2: Implementation of Green HRM

Green initiatives are being incorporated into HR procedures as a result of firms' need to reduce their environmental effect. According to Haddock-Millar et al. (2016), implementing Green HRM necessitates environmental sustainability and sustainable development. According to a review of the literature, many firms have either not yet completely integrated environmental goals with HRM practices (Dias-Angelo et al., 2014) or have implemented some eco-friendly HRM practices without a defined structure or regular application (Mishra, 2017). Notably, the most important Green HRM program is frequently acknowledged to be green training, also known as environmental training. There is a need to combat environmental deterioration (Neto et al., 2014), managing pro-environmental businesses (Gupta, 2018), and advocating cleaner productivity (Unnikrishnan & Hegde, 2007). According to Leidner et al. (2019), contextual circumstances, as opposed to being peripheral, intermediate, or entrenched, determine Green HRM practices. They also observed a mismatch between the goals of managers and leaders who support sustainability and the creation of green HRM policies. Based on this, they recommend that practitioners take contextual variables into account when choosing the right green Human Resource Management guidelines.

3.3 Focal Area 3: Enablers of Adoption of Green HRM at the Company Level

The goal of the research is to determine the variables that affect an organization's adoption of green HRM. The majority of studies have been on organizational factors. Important factors impacting the implementation of green HRM include executive-level environmental attitudes, stakeholder subjective norms, perceived green resource readiness, and green intellectual capital (Yong et al., 2019; Obeidat et al., 2018); green employee empowerment; the role of HR Business associates (Yusliza et al., 2017); and HR competencies (Yong & Mohd-Yusoff, 2016). Green HRM strategies have been found to moderate the impact of environmental performance on stakeholder demand (Guerci et al., 2016). According to

Teixeira et al. (2016), environmental training can become proactive green management through the use of technical green management methods, teamwork, organizational culture, and support from top executives.

3.4 Focal Area 4: Outcomes of Adoption of Green Human Resource Management at the Company Level

One important source of sustainability and competitive edge is green HRM. Businesses can get cost advantages and differentiation by implementing advanced environmental HR practices (Carmona-Moreno et al., 2012). Green HRM improves fiscal outcomes (Longoni et al., 2016; Zaid et al., 2018), social (Zaid et al., 2018), and environmental productivity, concerning the three pillars of sustainability (Guerci et al., 2016; Longoni et al., 2016; Masri & Jaaron, 2017; Obeidat et al., 2018; Yusoff et al., 2018; Zaid et al., 2018). Also, study on the connection between green HRM and green supply chain management has been carried by (Nejati et al., 2017; Longoni et al., 2016; Teixeira et al., 2016). Teixeira et al. (2016) explicitly noted the importance of green training for improving green supply green purchasing, customer satisfaction, and chain management.

3.5 Focal Area 5: Outcomes of Green HRM Adoption at the Individual Level

Many employee-related results of Green HRM have been established at the individual level. These contain organizational commitment (Kim et al., 2019; Luu, 2018), staff productivity (Ragas et al., 2017; Shen et al., 2016), and eco-friendly conduct (Kim et al., 2019; Dumont et al., 2016; Saeed et al., 2018). Furthermore, Green HRM has an unintended influence on employees' wills to continue separate jobs or leave their existing ones. Chaudhary (2018) exposed that prospective employees' intent to continue jobs were indirectly effected by green HRM. Shen et al. (2016) originate that organizational identification, an inspired social and psychological procedure, represented as a mediating feature among the indirect effect of Green HRM and employees' intention to resign.

4. Discussion

An indication of the evaluation and conversation Numerous impressive research journals, namely Emerald Insight, ScienceDirect, SpringerLink, Wiley Online Library, Taylor & Francis, SAGE Publications, and Inderscience Publishers, have published articles on Green HRM in the past decades. This unit delves into the Green HRM evolution research, examining the literature's focus areas, article distribution, publication years, national contexts, methodologies, and theoretical frameworks.

4.1 Focal Areas in the Field of Green HRM

Analysis of the articles revealed that there are five main areas of concentration for the Green HRM literature. Most research focuses on two areas: "Concepts, Reviews, and Models of Green HRM" (20 out of 70 publications) and "Outcomes of Adoption of Green HRM at the Company Level" (22 out of 70 papers). Remarkably, the least attention was paid in the surveyed literature to the "Enablers of the Adoption of Green HRM Adoption at the Company Level" (8 out of 70 studies). Research on the effects of adopting Green HRM at the company and employee levels has also significantly increased in recent years. This increased interest shows how important it is to incorporate environmental factors into HRM processes and how strategically important Green HRM is becoming to achieving both individual and organizational performance. This pattern points to an increase in publications in these specified fields.

4.2 Distribution of Articles

70 publications from various databases were reviewed for the study. About forty per cent of the publications were found in five journals, as Figure 2 illustrates. The most common sources were The International Journal of Human Resource Management (7 publications) and The Journal of Cleaner Production (10 publications). Other frequently cited journals included the Journal of Business Ethics (3), Industrial and Commercial Training (5), and German Journal of Human Resource Management (3).

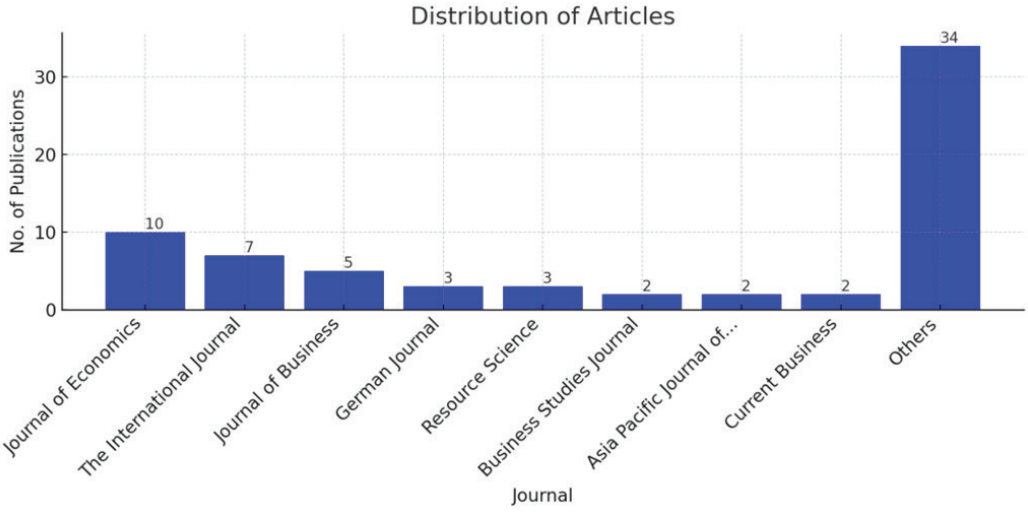

Figure 2: Assessment of the 70 selected journal articles (2007-2019)

***Note:** Journals having less than two papers published in the area were labelled as "other"

Figure 2: Publications in Various Journals in the Theme of Green HRM

4.3 Publication timeframe

The present study initiates its examination with literature published since 2007, marking the advent of the eco-friendly paradigm within Human Resource Management (HRM), as indicated by seminal works such as those by Unnikrishnan and Hegde (2007).

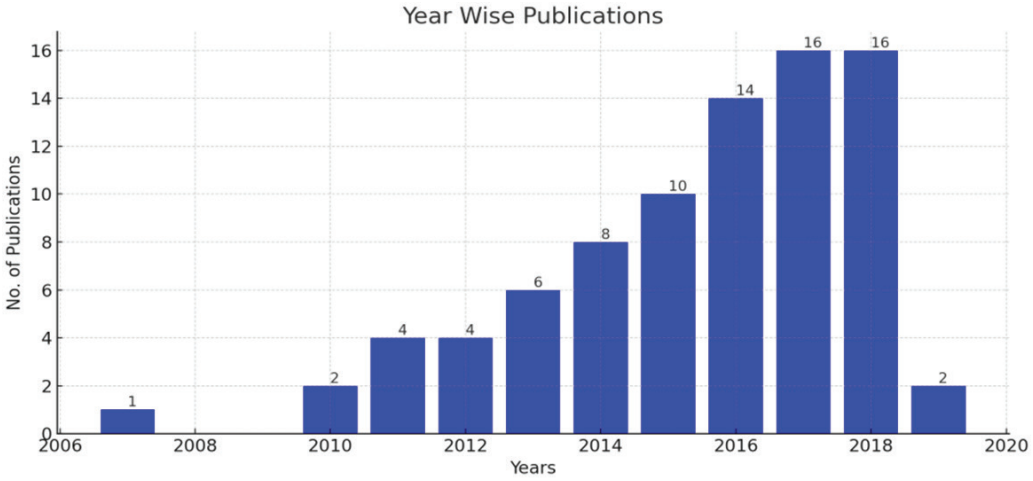

Figure 3: Years of publication

Initially, the inception phase of Green HRM, spanning from 2007 to 2015, witnessed a sparse volume of publications. This scarcity can be attributed to the novelty of the Green HRM concept and the concurrent industry focus on electronic HRM and technological integration in HRM practices (Abbas et al., 2023)

In more recent years, escalating concerns regarding environmental sustainability have propelled organizations to accentuate environmental management. This shift has subsequently heightened the significance of Green HRM. An analysis of Figure 3 reveals a notable escalation in research activity from 2016 onwards, exhibiting a persistently positive trajectory. This period has been characterized by a proliferation of both conceptual and empirical studies, aiming to refine the Green HRM framework. Moreover, Green HRM techniques have been widely adopted across a range of economic sectors. The sustained research interest and practical application of Green HRM since 2016 suggest its emergence as a prominent field of academic inquiry on a global scale.

As shown in Figure 4, the current study divides the examined literature on green HRM into 4 separate national categories: “Developing Economies”, “Developed Economies”,

"Cross Economies," and "Not Applicable." Eighteen articles fall under the "Not Applicable" category; these articles do not concentrate on any one nation. The research reveals a tendency toward an emphasis on specific national contexts, particularly in emerging nations (Brazil being the most prolific country with nine pieces).

On the other hand, just 12 research have been carried out in industrialized nations. Two of these studies provide cross-national comparisons that provide insight into how Green HRM is being implemented in different European countries. Haddock-Millar et al. (2016) investigated Green HRM practices in three of an American restaurant chain's European subsidiaries: the UK, Germany, and Sweden. Leidner et al. (2019) investigated the design and execution stages of Green HRM across multiple European firms, encompassing entities from the United Kingdom, the Netherlands, Belgium, Germany, and France.

It is noteworthy that scholars from poor nations have mostly concentrated on examining the performance outcomes, causes, and application of Green HRM. Much of the research focuses on the performance results of Green HRM at the individual (Kim et al., 2019; Chaudhary, 2018; Roscoe et al., 2019; Luu, 2018) and organizational levels (Obeidat et al., 2018; Al Kerdawy, 2018; Silva et al., 2019; Pham et al., 2019).

The few Green HRM studies conducted in industrialized nations have a variety of objectives. Some look at Green Human Resource Management outcomes (Guerci et al., 2016), implementation (Guerci & Carollo, 2016), and antecedents of Green HRM (Guerci et al,. 2016; Sawang & Kivits, 2014; Rangarajan & Rahm, 2011). Some, such as O'Donohue and Torugsa (2016), Longoni et al. (2016), Bombiak and Marciniuk-Kluska (2018), and Pinzone et al. (2016), primarily concentrate on the organizational productivity results of green human resource management.

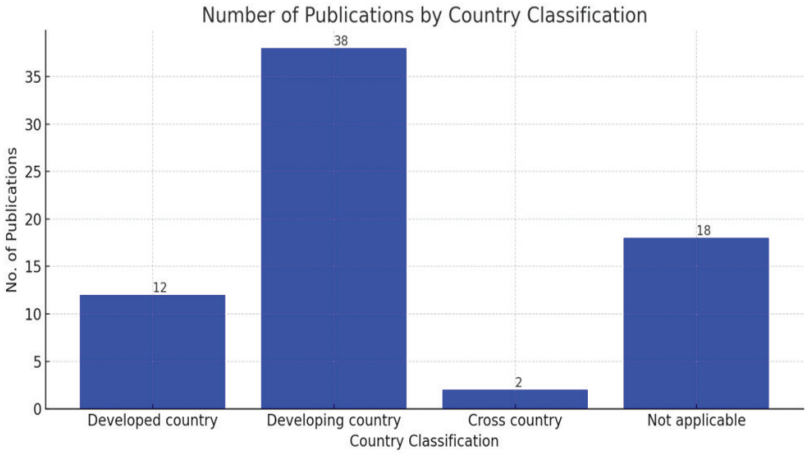

Figure 4: National context distribution

Both developed and developing countries, with their competitive business environments, have significantly contributed to Green HRM research, particularly emphasizing the productivity outcomes of Green HRM.

4.4 Research Methods

Research on green Human Resource Management employs a variety of approaches, such as mixed, conceptual, quantitative, and qualitative approaches. The theories, models, and research gaps found in earlier literature are discussed in conceptual studies. The factors influencing the adoption of Green HRM or its performance outcomes at the personal and organizational levels are experimentally investigated through quantitative research. Qualitative research employs case studies, interviews, or observations to offer comprehensive insights. Mixed-method approaches refer to studies that combine quantitative and qualitative methods.

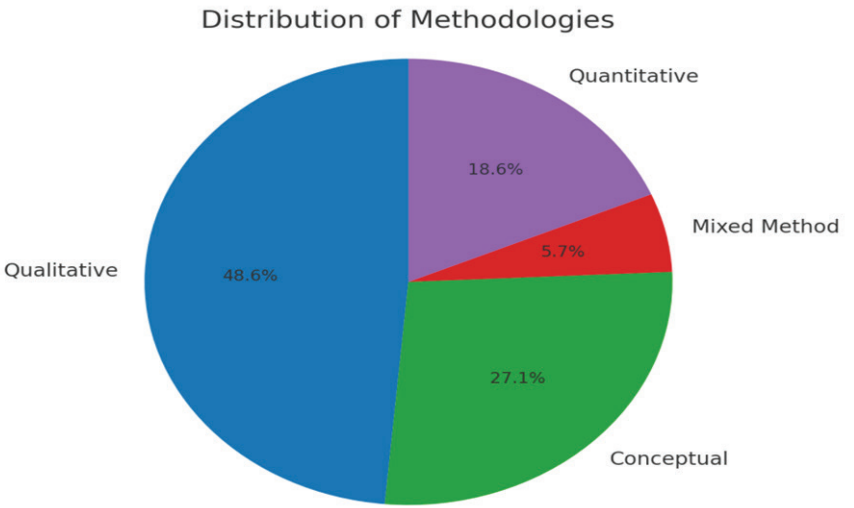

Figure 5: Research methodologies used in Green HRM research

Figure 5 displays the methodological distribution utilized in Green Human Resource Management (HRM) research. It is evident from the figure that quantitative research methods predominated in the study period, comprising 34 out of 70 papers, with surveys being the most commonly employed quantitative technique. The intended methodological approach aims at examining the antecedents and consequences of Green HRM. Furthermore, a significant share of research conducted so far (approximately 27 per cent) involved the publication of conceptual papers.

This trend suggests a strong inclination towards empirical research in Green HRM and forecasts an increased future focus on qualitative and exploratory research in this academic field. Current research has emphasized how crucial it is to examine real-world case studies from a range of industries to examine how Green HRM is being implemented and to determine the best methods that support sustainable growth. Nobari et al. (2018), Mishra (2017), Aragão and Jabbour (2017), and Silva et al. (2019) are a few notable examples. Despite of using mixed methodological approach adopted by several scholars, its application to the area of Green HRM remains in infancy.

4.5 Theoretical Papers

In terms of theoretical foundations, it was observed that 9 out of 34 empirical studies have not incorporated or utilized any theoretical support. Those that did so frequently employed the Resource-Based View (RBV), particularly in organizational-level studies. According to Barney (1991), the RBV emphasizes the strategic importance of distinctive resource bundles and competencies that are essential for gaining long-term competitive advantages. To provide a competitive advantage, these resources need to be rare, precious, unique, and non-replaceable, according to Barney (1991). While most RBV-based papers have concentrated on Green HRM, Longoni et al. (2016), Carmona-Moreno et al. (2012), Zaid et al. (2018), Yusoff et al. (2018), Longoni et al. (2016), and Zaid et al. (2018) have all explored various outcomes related to HRM, including competitive advantage, financial performance, and social performance. These outcomes are typically assessed through the use of questionnaires. In the context of Green HRM, Social Identity Theory offers a foundational lens for understanding the psychological processes of employees concerning an organization's environmental initiatives. Research papers utilizing this theoretical framework in the current sample have explored various consequences of Green HRM from an employee's perspective. This encapsulate investigating factors like organizational commitment, employees' pro-environmental behavior (Kim et al., 2019), employees task performance, and organizational citizenship behavior displayed in the organization. In addition, some articles also cover important aspects including employees' intention to quit (Shen et al., 2016), resulting in provision of holistic understanding of the influence of Green HRM practices on attitudes and behaviors of the employees.

The primary focus from the perspective of employees drawing on Social Identity Theory highlights the complex relationship between firm's pro-environmental efforts and employee's personal identity. Furthermore, it underlines the fostering the employee's personal identity and sense of shared purpose through Green HRM, that transform into employees and firm level outcomes.

Besides two important theories, the stakeholder theory by Wagner (2013) and Guerci et al. (2016) and the theory of planned behavior (TPB) by Sawang and Kivits (2014), several

other theories have been used in the organizational studies. A few most prominent are social exchange theory (Al Kerdawy, 2018), absorptive capacity O'Donohue and Torugsa (2016), intellectual capital-based view (ICT) (Yong et al., 2019), and ability–motivation–opportunity (AMO) (Pinzone et al., 2016). The field of individual-level research has benefited greatly from theories like the signaling theory (Chaudhary, 2018; Guerci et al., 2016), the AMO theory (Moraes et al., 2018; Cheema & Javed, 2017; Ragas et al., 2017), the supplies-values fit theory (Dumont et al., 2016), the stakeholder theory (Shen et al., 2016), the attribution theory (Luu, 2018), and the spillover theory (Ragas et al., 2017).

5. Conclusion, Implications and Future Research Recommendations

The analysis of the past studies (2007-2019) revealed that competitive advantage and environmental sustainability in contemporary companies can be leverages through the implementation of Green HRM by encouraging participation at individual and organizational level. This research makes a significant contribution to the existing body of knowledge by utilizing objective process for data collection from top tier journals. Furthermore, contrary to the past studies, the present study offers a novel understanding of Green HRM through a unique lens. In addition, this review also provides an exhaustive understanding of Green HRM practices. The conceptualization, implementation, drivers, and consequences of Green Human Resource Management in both company and employee contexts are highlighted through a comprehensive study of publications published between 2007 and 2019 that adheres to particular criteria and techniques.

Addressing two research questions, the RQ1 in Figure 3 reveals a potential interest in Green HRM since 2007, with a significant surge beyond the year 2016. This surge is attributed to the evolving perception of environmental sustainability as a strategic asset in organizations and the increased emphasis by governments and NGOs on ecological concerns. The keen focus on human involvement in environmental sustainability, particularly following the 2015 UN Sustainable Development Summit, further explains this trend. Additionally, in Figure 2, the review indicates that while Green HRM research is expanding, it remains a relatively emerging field.

For RQ2, Table 1 shows the literature predominantly explores concepts, models, and reviews of Green HRM, exploring its various dimensions. In the context of the individual, it focuses on the ramifications of implementing Green HRM practices. It also covers the implementation, enablers, and consequences of Green HRM in organizational contexts. Figure 4 presents the Green HRM literature's distribution by national context revealing predominance in developing countries, and Figure 5 illuminates the mixed-method approach is noted to be the least employed in the reviewed articles. This current research endeavors to reduce the difference between theoretical frameworks and practical applications by pinpointing research outcomes that can guide organizational policies and strategies. The primary focus of this

effort is the implementation of Green Human Resource Management (HRM) practices inside enterprises. This trend aligns with the goals of sustainable development that were emphasized during the 2015 Paris Climate Agreement and the UN Summit on Sustainable Development.

The research outcomes are of significant value to both academics and practitioners who seek a more holistic understanding of Green HRM, especially where its conceptual framework is ambiguous. The primary contribution of the present study is to offer unique understanding of various aspects of Green HRM that were mentioned in extant studies. The lack of consensus in understanding the concept of Green HRM practices can bar its implementation and acceptance. Hence, the present study illuminates that existing scholarship and offers a road to advancing the conceptualization of Green HRM research.

One other significant contribution of the present study is the categorization of Green HRM on geographical basis. The research conducted so far on the importance of Green HRM is limited to developed countries, there is a dire need of such studies in the context of developing economies. Such emerging economies are more engaged in manufacturing processes thereby making a more significant ecological impact. Therefore, the role of Green HRM in these countries cannot be ignored as it can significantly leverage their competitive position. Being manufacturing economies, these countries are more prone to higher CO2 and consumption of other environmental resources. Adopting Green HRM practices may results in resource sustainability and lowering the deteriorating effects of industrial activity on the environment.

This research put forth vital insights for the practitioners of Green HRM. It stresses on the significance of Green HRM in fostering pro-environmental practices in the various domains such as green supply chain management. In order to achieve sustainable competitive advantage that improves financial, social, and environmental outcomes, the incorporation of Green HRM protocols into core operations can play a decisive role. Managers must align the strategic goals of the organization with Green HRM practices, especially in the utilization of resources like water, paper water, and power sustainably. Such steps lower the operating expenses and possible government subsidies on one hand and on other hand improve the company's position resulting in positive impact on environmental preservation.

In addition, this study ascertain that top management adapt the Green HRM practices in accordance to their company's environment. Such adaptive approach is instrumental in addressing unanticipated challenges faced by the organization. This study also suggest that companies should focus on hiring employees valuing organization's pro-environmental goals, continuous training and assessment of pro-environmental capabilities. Organizations can motivate employees to adopt green behaviors, support implementation of Green HRM by fostering a workplace culture that values environmental stewardship.

This research extends its implications to government and societies. When organizations implement effective Green HRM practices, they become more familiar with their impact on society, recognizing the need for cleaner air and a less polluted environment. Collaborations between organizations, governments, and NGOs are crucial in mitigating negative environmental impacts from corporate activities, thereby improving societal well-being. Moreover, promoting green behaviors in the workplace can influence employees' personal lives, as organizational environmental values are internalized and manifested in their daily activities, contributing to the reduction of environmental pollution.

This study also lays out directions for future studies. Future studies should investigate this topic to understand the role of employees in accepting Green HRM inside firms, as there has been little research on the individual-level factors of Green HRM adoption. Additionally, there is a need for research into the development and implementation of effective, adaptable, and efficient Green HRM practices. This entails investigating how to improve Green HRM practices through the use of Big Data management, managerial assistance, and stakeholder pressure. As Big Data management becomes increasingly interdisciplinary, its application in fields like sustainable manufacturing and environmental management offers valuable insights. Future research should investigate how Big Data can provide critical, timely data to support the effective implementation of Green HRM and align HRM practices with environmental goals.

In addition, for making such activities attractive for both company and workers, there is a need to have a thorough understanding of the consequences of Green HRM. Being in infancy, further research is recommended at both institutional and individual levels. Future researchers should attempt to further investigate the topics like employee green behavior at workplace, work-life balance and sustainable competitiveness of the organizations. In the rapidly developing world, such investigations hold its own significance because it illuminates the mechanism of how Green HRM is instrumental in promoting sustainable competitive advantage, impact employee behavior and decision making that fosters environmental sustainability. Furthermore, the support from Resource-Based View (RBV) and social identity theories to the Green HRM research provide further insights. The attainment of the competitive advantage, according to resource based view (RBV) theory, is significantly dependent on organizational distinctive resources. On the contrary, the social identity theory ascertains the vitality of individual's identity with a group within social unit or an organization because of its significance role in implementing Green HRM practices.

The findings of the present study indicate the limited theoretical applications of Green HRM research. The social identity theory is mostly used in individual setting, while the Resource-Based View (RBV) is used as a theoretical anchor in organizational studies. Hence, it would be interesting to know how the Theory of Planned Behavior (TPB) influences individual's attitude and behaviors in future research. Such a study may examine the interplay

between green HRM policies and employees' intentions and employee green behavior. It will help in attaining in-depth understanding of how employee intentions and pro-environmental approach are influenced by Green HRM. Moreover, integrating theories like the Ability-Motivation-Opportunity (AMO) theory, the social exchange theory, the natural RBV, and the goal-setting theory could significantly enrich the Green HRM research landscape. Such theories provide deeper understanding of how Green HRM practices plays a pivotal role in impacting employee behavior and performance. Geographical diversity in future research is also crucial. Whereas developing countries may share similar economic environments, cultural variances could lead to diverse results. Understanding these shades is vigorous in human and organizational studies. Hence, upcoming research should explore these cultural differences and their influence on Green HRM practices and results.

Moreover, the implementation of mixed-method research methods is highly suggested. This methodology can reduce the boundaries of single-method research by providing a more detailed understanding through the triangulation of data. Mixed-method research can significantly surge the dependability and credibility of the results, even though it could require more thorough examination, analysis, time, and resources. The details of information gained from this method can make a huge addition to the corpus of present knowledge. In conclusion, the value of Green Human Resource Management operations in organizations cannot be overstated. Policymakers and top management should implement a holistic and committed method to successfully implement these operations into organizational strategies, thus contributing positively to both humanity and the environment.

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