Volume 4, Issue 1 March, 2024

ISSN: 2788-4856

Environmental Sustainability Initiatives and Employee Performance: The Moderating Effect of Organizational Culture

Ayaz Qaiser¹, Dr. Ansar Abbas²

- 1. PhD Scholar, Department of Management Sciences, MY University, Japan Road Islamabad Pakistan. qaiser.ayaz06@gmail.com
- 2. Assistant Professor, Department of Management Sciences, MY University, Japan Road Islamabad Pakistan. Ansar.abbas@myu.edu.pk

This paper explores the intricate relationship between environmental sustainability, organizational culture, human resource management (HRM) sustainability, and employee performance within Higher Education Institutions (HEIs) in Pakistan. Drawing on an extensive literature review, the study investigates how economic and political factors influence HRM sustainability and employee performance, mediated by organizational culture. The research adopts a cross-sectional design and employs social cognitive theory to elucidate behavior within Pakistani universities. Results indicate significant relationships between environmental sustainability, HRM sustainability, and employee performance, further moderated by organizational culture. The findings underscore the importance of integrating sustainable practices within HEIs to enhance organizational effectiveness and address societal challenges. Moreover, the study provides valuable insights for policymakers, educators, and practitioners seeking to promote sustainability initiatives in higher education contexts. Limitations and suggestions for future research are also discussed, emphasizing the need for comparative studies across diverse geographical zones to validate the proposed model. Overall, this research contributes to advancing knowledge on HRM sustainability and its implications for organizational behavior and performance in developing country contexts.

Keywords: Sustainability, Higher Education Institutions, Organizational Culture, Human Resource Management, Employee Performance

Introduction

Employees within universities who have expertise and receive comprehensive training are inclined towards greater motivation and dedication in their scholarly and instructional endeavors (Lew, 2009). Adopting HR practices at the institutional level can significantly enhance the overall performance of HEIs. Lew (2009) highlighted the vital role employees play in improving the university rankings across various domains such as academic research,

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institutional reputation, community outreach, and teaching standards. Recognizing the importance of enhancing academic performance, numerous educational institutions are leveraging human resource management strategies to achieve maximum outcomes (Amin et al., 2014), foster positive organizational dynamics (Wall & Wood, 2005), instill organizational commitment (Aladwan et al., 2015), and cultivate work engagement (Aktar & Pangil, 2018). In recent years, the body of research on sustainability has significantly expanded, both in its relevance and the quantity of published articles (Erturgut & Soyşekerci, 2009), underscoring the growing importance of sustainability knowledge and management skills across various disciplines to address sustainability challenges (Hesselbarth & Schaltegger, 2014). Higher Education Institutions (HEIs) play a vital role in shaping the future of societies and economies by imparting knowledge, skills, and values to students (Khalid et al., 2021). Within past few years, there has been a growing recognition of the need for sustainability within these institutions to address environmental, social, and economic challenges (Zhang et al., 2022). Education for sustainability, as a component of environmental education, facilitates the sharing of knowledge and experiences while promoting environmental consciousness and ethical behaviors (Wamsler, 2020).

Environmental sustainability focuses on minimizing the organization's ecological footprint and promoting environmentally responsible practices. This includes initiatives such as energy conservation, waste reduction, sustainable procurement, and incorporating environmental considerations into decision-making processes dealing with the economic and political factors (Renwick et al., 2013). Employee performance is a key outcome of HRM sustainability. When employees are supported, engaged, and aligned with the organization's sustainability goals, they are more likely to perform at a high level and contribute to the organization's overall success. Sustainable HRM practices positively impact employee performance through increased job satisfaction, motivation, and organizational commitment (Hansen et al., 2011). Organizational culture, another variable of interest, plays a crucial role in HRM sustainability. It refers to the shared values, beliefs, and practices that shape the behavior and decision-making within an organization. A strong culture that supports sustainability can foster employee engagement, commitment to sustainable practices, and the integration of sustainability into everyday operations (González-Romá et al., 2017).

Disterheft et al. (2013) acknowledge improvements in sustainability implementation within the academic community but emphasize the necessity of transitioning from unsustainable practices towards sustainability in higher education. They argue that universities have yet to fully embrace a comprehensive shift from traditional academic structures towards sustainability and address its attendant challenges (Caeiro et al., 2013). Sustainability has often been limited to its environmental aspect, potentially diminishing its overall reliability and significance, particularly considering extensive focus on terms like Sustainable Development (SD) and environmental conservation. Sustainable HRM holds particular importance for globally competitive universities, with the main challenge lying in understanding the factors influencing sustainable HRM for university staff (Hosseini & Sabokro, 2022). Additionally, universities are tasked with meeting the needs of the current generation without compromising the potential of future generations (Neamţu et al., 2020). As knowledge-intensive service providers, universities are

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poised to transform structures, introduce sustainable practices, and institutionalize sustainability within their operations. They can optimize energy consumption, water resources, and heating/cooling systems, while also pioneering sustainable initiatives in manufacturing, services, and distribution sectors through research, education, and collaboration with governmental bodies and industries (Caeiro et al., 2013).

In Pakistan, a developing nation facing myriad sustainability challenges, Higher Education Institutions (HEIs) are called upon to take proactive steps in promoting sustainable practices (Nadeem & Nawaz, 2022). Despite the global emphasis on sustainability in higher education, the implementation and impact of such initiatives in Pakistani HEIs remain largely unexplored (Shah Bukhari et al., 2022). This knowledge gap highlights the need for research to delve deeper into the factors influencing the adoption and effectiveness of sustainability practices in Pakistani HEIs. The current study aims to fill this void by examining how organizational culture moderates sustainability practices within higher education institutions in Pakistan. By exploring the interplay between sustainability initiatives and organizational culture, the study seeks to shed light on how cultural factors shape the outcomes of sustainability practices within HEIs. The insights gleaned from this research hold promise for informing the development of tailored interventions and strategies that resonate with the prevailing organizational culture, thereby enhancing the efficacy of sustainability efforts in Pakistani HEIs.

Literature Review

According to Pezzey (1989), Economic growth, characterized by a rise in consumption, could rely on the utilization of renewable natural resources. Meanwhile, Ehnert et al. (2016) highlighted that for an organization to achieve sustainability, it relies heavily on the active involvement of its employees in addressing environmental, social, and economic challenges. This suggests that employees play a crucial role as agents of change within the organization, contributing to its overall sustainability by actively participating in efforts to tackle environmental degradation, promote social responsibility, and address economic concerns. Choi and Ng (2011) suggest that economic sustainability is intertwined with the preservation of natural resources, the promotion of social well-being, and the health of ecosystems. Martin et al. (2005) argue that social security measures contribute to the enhancement of labor productivity. This, in turn, empowers individuals and strengthens the development of economic sustainability by harnessing human capital. Social security provisions provide a safety net for workers, ensuring their well-being and enabling them to focus on their work more effectively. By investing in social security measures, organizations and societies can foster a conducive environment for economic growth and sustainability, as individuals are better equipped to contribute to productivity and innovation.

Political factors often pose challenges to the adoption of urban sustainability practices. Hogwood and Gunn (1984) contend that policies or objectives aimed at sustainability may divert resources initially allocated to other groups or may conflict with the interests of powerful interest groups, such as party activists or trade unions, who have the ability to veto them by exerting pressure on the ruling party. According to Ferris et al., (2002) The dynamics of organizational

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politics have attracted considerable attention from a wide range of stakeholders, including scholars in behavioral science and the general public. He also stated that academia has shown considerable interest in workplace politics in recent years. Doldor (2007) explained that within organizations, political dynamics arise from the existence of diverse interests among members, prompting individuals to engage in various strategies to advance their objectives. This includes exerting power and influence over decision-making processes and organizational outcomes. Political behavior, therefore, encompasses the actions and maneuvers undertaken by individuals to navigate and shape these internal power dynamics. According to Mohiuddin et al. (2022), employees' perceptions of politics within the organization are shaped by the observed use of power, strategic maneuvers, and utilization of legal authorities to influence behaviors. This suggests that individuals within the organization interpret political dynamics based on their observations of how power is wielded, the tactics employed to achieve certain outcomes, and the extent to which legal mechanisms are utilized to exert influence. These perceptions influence how individuals navigate the organizational landscape and engage in their own political behaviors.

In recent times, there has been a heightened focus on the concept of sustainability, driven by increasing concerns about the environment, climate change, and the pressing challenges of poverty, socioeconomic disparities, and social conflicts. Despite the widespread acknowledgment of the importance of sustainable growth, there is limited debate or analysis on its nature and meaning. Over the past few decades, there has been a rapid increase in awareness of sustainability across various aspects of life, although it has been somewhat overlooked in higher education institutions (HEIs). Similarly, HEIs are now addressing ongoing issues in various research fields, including education, influenced by the changing landscape of sustainability (Abbas et al., 2022).

The success or failure of any organization hinges on its employees, who are its most valuable assets. They synergize with other resources like finance, technology, information, and production systems, thereby facilitating the organization's competitive advantage. To realize this potential, employees must collaborate and maintain positive relationships with their employers. Consequently, employee relationship management assumes a critical role in achieving organizational objectives. Recognizing this, fostering strong relationships between employees and managers, as well as between employees and the organization, becomes imperative. Such relationships foster productivity, motivation, and high performance among employees, thereby driving the organization towards success (Brhane & Zewdie 2018). Stewart (2010) highlighted that profitability is a primary goal for any organization. He suggests that one of the most effective starting points for improvement lies in examining the organization's work culture.

The term sustainable development refers to the long-term and systematic usage of natural resources, while considering that we need to conserve them for th future generations (Mohiuddin et al. 2022). Choi and Ng (2011) argue that natural resource, social well being and ecosystem are the blend of economic sustainability. According to the classical endogenous growth theory, human capital is having the leading role among technological advancement and economic growth sustainable development (Xu and Li, 2020). Labour productivity is enhanced by the

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social security, which therefore give power and strengthen to develop the economic sustainability through assembling human capital (Martin et al., 2005). Based on the available economic knowledge, economic sustainability means selecting an option that connects with overall economic growth and ling-term development (Mohiuddin et al. 2022). Hence, it can be hypothesized that:

H1. Economic Factors have positive relationship with HRM sustainability.

The power and the influence process is directly related to the political behavior (Doldor, 2007). Buchanan and Huczynski (2004) demonstrated that decision making is more influenced by the political behavior specially when employees have to handle unorganized decision and to work in the evolving environment. Organization senior management need to be political skilled as politics is more common at the upper level of the organizations. Politics at the workplace includes motivating management to make unessential decision through informal means (Salamzadeh et al. 2021). Nomartive aspects is the fundamental expectations from science in flourishing political stability as it includes political factors which make researcher commitimnt and institute support necessary (Van der Hel, 2018). Political behavior of employees encompasses wide range of effectual techniques for instance improvements in organizational position, reform, and maintenance (Vigoda-Gadot & Drory, 2006). The organization employees' political preception is rooted on the intended actions employing power, strategies and legal authorities for influencing behaviours (Mohiuddin et al. 2022). Organizations having ethics in it is more likely to achieve success (Buchanan & Badham, 2020). Hence, it can be hypothesized that:

H2. Political Factors have positive relationship with HRM sustainability.

In today's landscape, organizations are increasingly attuned to environmental challenges and sustainability imperatives, particularly prevalent in developing nations (Masri & Jaaron, 2017). One avenue through which organizations contribute to sustainability is by embracing the emergent concept of green human resource management or sustainable HRM (Ren, Tang, & Jackson, 2018). As the call for sustainability grows louder, organizations are turning to their HRM departments as key drivers of their sustainability agendas (Wirtenberg et al., 2007). HRM assumes a pivotal role in navigating various pressures from governmental and international entities, necessitating organizational adaptation and renewal (Bombiak and Marciniuk-Kluska, 2018). Consequently, HRM managers prioritize the implementation of environmentally friendly practices, aligning business efforts with sustainability goals (Gim et al., 2022). Recognizing the workforce as a cornerstone resource, organizations integrate sustainability principles into job roles and functions, ensuring every employee contributes to resource efficiency (Yong et al., 2019). Upholding high standards and sustainable processes is integral to performance accountability, driving organizations towards sustainable practices (Crawford & Scaletta, 2005). Research by Mesmer-Magnus et al. (2012) suggests that simultaneous achievement of organizational and environmental sustainability hinges on stakeholder commitment at all levels. From these insights, it can be inferred that HRM sustainability acts as a mediator between sustainability initiatives and employee performance. Hence, it can hypothesize that:

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- H3. HRM sustainability has a significant relationship with employee performance.
- *H4.* HRM sustainability mediates the relationship between economic factors and employee performance.
- *H*5. HRM sustainability mediates the relationship between political factors and employee performance.

Culture encompasses a set of norms, values, beliefs, and attitudes that profoundly influence organizational behavior (Aktaú et al., 2011). It subtly molds societal behaviors and significantly shapes decision-making processes, overtly and covertly (Hofstede, 2001). Kilmann (1985) describes organizational culture as a shared framework of philosophy, ideology, values, assumptions, beliefs, behaviors, and norms that bind an organization together. Research suggests that personal environmental values strongly drive environmentally friendly behavior (Andersson et al., 2005). Additionally, principles governing societies can be effectively applied to management science, as organizations mirror societies and communities, comprising individuals forming distinct boundaries (Erkutlu, 2011). When employees' environmental values align with those of the organization, their dedication to organizational objectives strengthens (Kim et al., 2019). The performance of organizations, teams, and individuals is significantly influenced by employees' attitudes and behaviors (Kalaiarasi & Sethuram, 2017). Organizational culture is recognized as a crucial factor influencing competitive strength (Schimmoeller, 2010), becoming increasingly significant for organizational sustainability (Indrasari, 2017). In the current dynamic environment, all organizations must adopt an entrepreneurial mindset, necessitating the integration of all elements of organizational culture for effective goal achievement and long-term sustainability, particularly for Higher Education Institutions (HEIs) (Ibrahim et al., 2018).

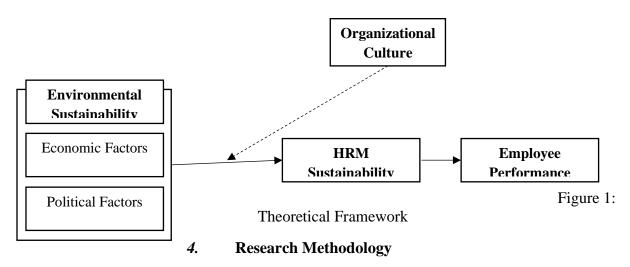
Human Resource Management (HRM) is pivotal in enhancing organizational effectiveness and efficiency (Kalaiarasi & Sethuram, 2017). Studies indicate that HRM can contribute to organizational sustainability through various components such as organizational change, recruitment and reward systems, professional development, employee participation, consultation, and work-life balance (Gollan et al., 2013). Combining environmental sustainability with individual factors is essential in this context, necessitating HRM systems that develop human capabilities, foster teamwork, and promote ongoing education to facilitate environmentally friendly practices (Gollan et al., 2013).

While previous studies have explored the moderation effect of organizational culture between different variables, little attention has been given to its role between organizational sustainability, environmental sustainability, and HRM sustainability. Therefore, this study aims to investigate the moderation effect of organizational culture between these variables. In conclusion, organizational culture moderates the relationship between sustainability, including organizational and environmental sustainability, and HRM sustainability. Hence it can be hypothesized that:

- H6. OC moderates the relationship between economic factors and HRM sustainability.
- H7. OC moderates the relationship between political factors and HRM sustainability.

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Social cognitive theory (SCT) provides valuable insights into human behavior by emphasizing psychosocial factors and their interaction with external influences (Beauchamp et al., 2019). Within organizations, organizational culture, shaped by leadership, plays a significant role in shaping employee behavior (Bandura, 2002). Increased environmental awareness has been linked to greater employee engagement in environmental issues (Darvishmotevali & Altinay, 2022). According to SCT, individuals' motivation and behavior are influenced by both internal and external factors, as well as by their personal participation and performance (Schunk & DiBenedetto, 2020). Employees are more likely to participate in environmentally friendly activities when they perceive personal benefits (Jabbar & Abid, 2014), highlighting the importance of involving a wide range of stakeholders (Mariappanadar, 2019). Additionally, individuals are inclined to adopt behaviors observed in others with whom they identify. By applying SCT principles, organizations can promote sustainable employee performance by leveraging individuals' rapid learning from their environment. Therefore, this study aims to investigate how SCT influences behavior within Pakistani universities.



The research focuses on faculty members employed at Higher Education Institutions (HEIs) across Pakistan's different regions. The target group consists of individuals who use smart handheld devices for m-commerce technologies, with a specific emphasis on HEI faculty members. A convenience sampling approach is adopted to collect responses from university students, in line with the study's aim of exploring connections among variables. Structured questionnaires are chosen as the primary data gathering method due to the absence of pertinent secondary data in the emerging field being studied. The survey questionnaire, found in the Appendix, is distributed in both hard and soft copy formats, comprising solely closed-ended questions. The questionnaire's initial section collects demographic information such as gender, age, marital status, education, and institute affiliation. The subsequent section consists of 25

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items concerning organizational sustainability, HRM sustainability, organizational culture, and employee performance, segmented into sub-parts based on study determinants.

All questionnaire items employ a five-point Likert scale, ranging from 'strongly disagree' to 'strongly agree', ensuring consistency and comparability across studies. The items are drawn from previous research studies and encompass scales for political and economic factors, HRM sustainability, organizational culture, and employee performance. The questionnaire incorporates measurement scales developed by Mohiuddin et al. (2022) for political and economic factors, Nugroho et al. (2021) for organizational culture, and Carmeli et al. (2007) for employee performance. Data analysis is carried out using IBM SPSS (Statistical Package for the Social Sciences) version 23 and AMOS (Analysis of Moment Structures) version 23 software.

Results and Discussion

Among the 458 respondents, 307 (67.0%) are male, with 151 (33.0%) being female. Further examination indicates a 37% difference between male and female respondents, which is statistically significant, highlighting a noticeable gender gap within Higher Education Institutions (HEIs) in Pakistan. Age-wise, 5.2% (n = 24) of respondents are below 25, while the largest proportion, 47.4% (n = 217), falls within the 25-35 age group. Moreover, 22.5% (n = 103) are aged 36-45, and 22.9% (n = 105) fall in the 46-55 age bracket, with only 2.0% (n = 9) above 55. These statistics shed light on the age distribution of HEI employees in Pakistan. According to data presented in Table 4.3 and the accompanying pie chart in Appendix D, among the 458 surveyed respondents, 185 (40.4%) are single, while the majority, 256 (55.9%), are married. Additionally, a smaller group of 17 (3.7%) respondents fall into other marital status categories. Regarding educational attainment, the majority hold Master's degrees, comprising 42.8% (n = 196) of the total, followed by 23.4% (n = 107) with Bachelor's degrees, and 33.8% (n = 155) with PhDs.

Table 1: Descriptive Statistics of Demographics

	Demographic variables	Demographic characteristics	Frequency	Percentage
1	Age	• Below 25	42	5.2
		25-3536-45	217	47.4
	• • Total	10 22	103	22.5
		Total	105	22.9
			9	2.0
			458	100.0
			458	100.0

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2	Gender	•	Female Male	151	33.0		
		Total		307 458	100.0		
3	Marital Status	•	Married Other	185	40.4		
		• • Total		256	55.9		
		10.001		17 458			
4	Education Level	•	Bachelors	107	23.4		
		•	Masters PhD	196	33.0 67.0 100.0 40.4 55.9 3.7 100.0		
		Total		155			
5	T		D 11:	458			
J	Institute	• • Total	Public Private	147 311			
		23001		458	100.0		

The mean values represent the average score for each variable, offering a measure of the central tendency. For example, the mean score for Social Factors is 3.94, suggesting the average level of performance expectations among respondents. Standard deviation measures the dispersion of data points around the mean, providing insights into the variability or spread of scores within each variable. A higher standard deviation indicates greater variability among responses. For instance, Employee Branding exhibits a standard deviation of 0.545, suggesting a relatively wide dispersion of motivational factors influencing respondents' behavior. The analysis reveals that Economic Factors, Political Factors, HRM Sustainability, and Employee Performance Effort exhibit a positive relationship with the dependent variable, Organizational Culture.

Table 2: Descriptive Statistics and Correlation Analysis

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Constructs	Mean	SD	EF	PF	HRMS	EP	OC
Economic Factors	2.47	.417	1				
Political Factors	4.10	.516	.793**	1			
HRM Sustainability	2.01	.516	.050*	.094*	1		
Employee Performance	3.02	.521	.107*	.117*	.007	1	
Organizational Culture	4.10	.337	.133**	.042	.170**	.077	1

Evaluating discriminant validity requires a thorough examination of both diagonal and off-diagonal values within a correlation matrix. Diagonal values denote the square root of Average Variance Extracted (AVE) values for each construct under study, including Economic factors, Political factors, HRM Sustainability (HRMS), and Employee Performance (EPM). It is crucial that these diagonal scores exceed the off-diagonal scores in corresponding rows and columns.

Table 3: Discriminant Validity							
	EFM	POF	HRMS	EPM			
EFM	0.549						
POF	0.235	0.683					
HRMS	0.415	0.450	0.685				
EPM	-0.007	0.102	0.082	0.684			

Results in table 4 show significant results for the direct relationships. The research investigates how HRM sustainability acts as a mediator between different factors and employee performance (EP). Findings in table 5 demonstrate that HRM sustainability partially mediates the connections between economic and political factors, and Employer Branding (EB) and EP. Initially, notable direct effects are observed between independent variables and EP, without the mediator. For instance, the direct beta value between HRMS and POF is $\beta = 0.419$, with

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corresponding p-values of p=0.001. Upon introducing the mediator, these direct effects remain significant, with beta values ranging from $\beta=0.284$ to $\beta=0.023$, and p-values still at p=0.001, suggesting partial mediation.

Table 4: Path Coefficients

Hypothesis	Relationship	Std. beta	SE	p-values	Decision
H1	HRMS → EF	.094	.030	.000	Supported
H2	HRMS → POF	.419	.040	.000	Supported
Н3	$EP \rightarrow HRMS$.311	.010	.000	Supported

This indicates that although HRM sustainability significantly contributes to the association between EF, POF, and EP, additional factors also influence employee performance. These results emphasize the importance of HRM sustainability in improving organizational performance, emphasizing its substantial influence on employee productivity. Moreover, they highlight the complex interplay between different factors and employee performance, indicating the need for a holistic approach to organizational management. The Cronbach alpha for items stands at 0.835, indicating high reliability.

Table 5: Indirect Effects

Hypothesis	Relationship	Without Mediation	With Mediation	Indirect β	Decision
H4	HRMS → EF → EP	$\beta = .315, p = .001$	β = .203, p = .001	$\beta = .112, p = .001$	Partially Supported
H5	HRMS → POF → EP	$\beta = .284, p = .001$	$\beta = .023, p$ = .001	$\beta = .225, p = .001$	Partially Supported

The results obtained from linear regression analyses reveal B1 = 1.681 (p < .001), B2 = 0.316 (p < .001), and B3 = 0.288 (p < .001) for Economic Factors, Organizational Culture, and their interaction, respectively in figure 2.

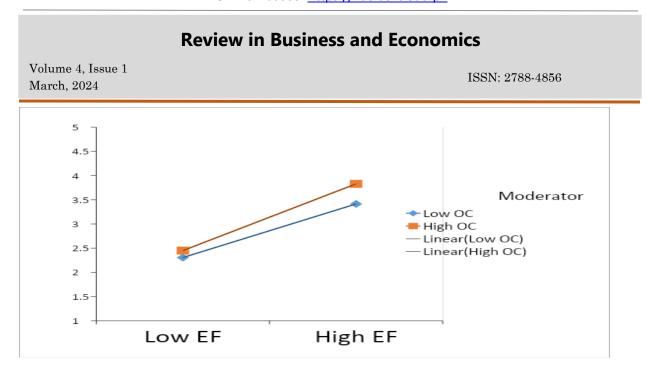


Figure 2: OC strengthens the positive relationship between EF and HRMS

The results obtained from linear regression analyses yield B1 = 0.491 (p < .001), B2 = 0.316 (p < .001), and B3 = 0.111 (p < .001) for Political Factors, Organizational Culture, and their interaction, respectively in figure 3.

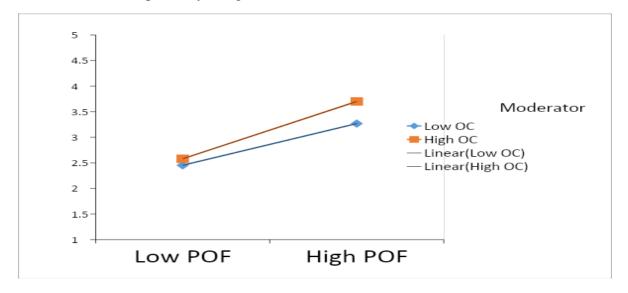


Figure 3: OC strengthens the positive relationship between POF and HRMS

Conclusion

This study has several limitations that should be acknowledged. Firstly, the sample consisted of higher education professionals, which may restrict the generalizability of the study

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findings to other contexts or industries. Secondly, as this phenomenon is still emerging, a longitudinal study capturing ongoing dynamic perceptions could provide a more comprehensive understanding of the phenomenon. However, this study adopted a cross-sectional design. Thirdly, the current study focused on specific factors of organizations such as environmental sustainability i.e economic factors & political factors with mediation role of HRM sustainabilityy and moderation role of organizational culture. Future research could expand the existing model by incorporating additional organizational factors. Fourthly, researchers in the future could explore the potential mediating role of organizational culture in their research models. This study solely focused on the higher education sector in Pakistan as a developing country. The authors suggest conducting comparative studies across different geographical zones in future research to further validate the proposed model.

This study makes valuable contributions to the existing knowledge on HRM sustainability and its link with employee performance in the higher education sector through significant discoveries. This study makes an important discovery that the environmental sustainability i.e economic factors & political factors in the higher education sector of Pakistan significantly and positively predicts employee performance. This research not only confirms previous findings but also enhances our understanding of how environmental factors promotes employee performance, thereby fostering social responsibility and organizational productivity. Additionally, the study highlights the significant role of HRM sustainability in enhancing sustainable organizational behavior. From a contextual standpoint, this research provides higher education institutions (HEIs) with strategies to enhance their sustainable position through the implementation of sustainable initiatives. Furthermore, the study reveals that the relationship between environmental sustainability i.e. economic factors & political factors and employee performance outcomes is moderated by organizational culture. In conclusion, employing the social cognitive theory as a theoretical foundation to establish a link between environmental sustainability i.e. economic factors & political factors and employee performance outcomes contributes to our understanding of the growing global trend of organization dynamics, particularly in developing countries.

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