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GREEN HUMAN RESOURCE MANAGEMENT AND SUSTAINABLE ORGANIZATIONAL PERFORMANCE: A STRUCTURAL EQUATION MODELING APPROACH

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Abstract

The paper will analyze the effects of GHRM on SOP mediated by Green Employee Behavior. The research design used was quantitative and cross-sectional and data analyzed through Structural Equation Modeling. The analytical model comprised three latent constructs, namely: GHRM, Green Employee Behavior and SOP. The last sample included 300 valid answers. The analysis of reliability revealed that the internal consistency is excellent with the values of Cronbach alpha of 0.966 of GHRM, 0.954 of Green Employee Behavior and 0.969 of Sustainable Organizational Performance. Correlation results showed positive associations among all constructs, with coefficients ranging from 0.579 to 0.624. Model fit indices indicated strong model adequacy, including CFI = 1.006, GFI = 0.992, AGFI = 0.990, NFI = 0.992, TLI = 1.007, and RMSEA = 0.000. The structural model demonstrated that GHRM significantly predicted Sustainable Organizational Performance, $\beta = 0.329$, $p < 0.001$, and Green Employee Behavior, $\beta = 0.626$, $p < 0.001$. Green Employee Behavior also significantly influenced SOP, $\beta = 0.476$, $p < 0.001$. Mediation analysis showed an indirect effect of 0.298 and a total effect of 0.627, confirming partial mediation. The findings suggest that green HR practices enhance sustainable performance both directly and by encouraging environmentally responsible employee behavior.

Keywords: GHRM; Sustainable Organizational Performance; Green Employee Behavior; SEM; Sustainability.

1. Introduction

Sustainability is a key focus for today's organizations as companies are increasingly expected to deliver economic outcomes while

minimizing environmental impacts and increasing social responsibility. The triple bottom line approach suggests that organizational performance should be measured in terms of

economic, environmental and social rather than financial performance (Elkington, 1997). In this regard, human resource management has emerged as an important organizational strategy for institutionalizing sustainability in day-to-day practices, employee attitudes and long-term organizational capabilities. GHRM is the HR policies and practices that embed environmental goals into recruitment, training, performance evaluation, rewards and employee engagement (Ahmad, 2015).

The increasing importance of GHRM is based on the understanding that environmental performance does not depend solely on technology, regulation or environmental management systems. It also requires the knowledge, attitudes and behaviors of employees. By training, rewarding and engaging employees in environmental initiatives, organizations are more likely to build the internal capability to achieve sustainability-oriented performance. Previous research has found that green HR practices can enhance environmental commitment, enhance employee involvement in green activities, and contribute to organizational sustainability performance (Jackson et al., 2011; Gholami et al., 2016).

SOP can be defined in terms of environmental, social and economic performance. Environmentally sustainable practices have been linked to enhanced performance, efficiency and competitiveness (Golobic & Smith, 2013). Likewise, environmental standards can increase productivity through improvements in organizational routines and employee motivation to achieve sustainability goals (Delmas & Pekovic, 2013). These claims suggest that sustainability can be a valuable strategic resource when it is integrated into the organization system rather than seen as a compliance issue.

Although there is a growing literature on GHRM, more empirical research is needed on how green HR practices affect sustainability. Green Employee Behavior is critical because HR systems can influence employees' green behavior, such as energy saving, waste reduction, following environmentally related procedures, and voluntary engagement in green activities. This micro-level mechanism is important because it is the actions of employees which determine the sustainability performance of the organization.

The present study explores the link between GHRM and SOP via Green Employee Behavior. The research uses a SEM approach because SEM allows for simultaneous evaluation of latent variables, measurement model and structural

model. SEM is recommended for testing complex models that include both measurement and causal relationships (Anderson & Gerbing, 1988). SEM has also found wide application in management studies for predictive models and latent variable analysis using the partial least squares approach (Chin, 1998). It is important to have sufficient statistical power for such analysis because the ability to test hypotheses depends on the sample size and power to detect effects (Cohen, 1988).

The aim of this study is to test if GHRM is directly related to SOP and if Green Employee Behavior is a mediator of this relationship. By including GHRM, employee green behavior and sustainable performance in an SEM model, study adds to sustainability and HRM literature by providing insight into how green HR practices translate into sustainable performance.

2. Literature Review

GHRM the embedding of environmental management practices in HR. It encompasses green staffing and selection, environmental training, green performance management, green compensation, & employee participation in environmental management. In early studies on green HRM, it was highlighted that HR practices can be used to integrate employees' abilities, motivation and opportunities with environmental objectives (Jackson et al., 2011). Ahmad (2015) also noted that GHRM policies institutionalize environmental sustainability through formal HR processes.

GHRM is intimately related to the RBV and NRBV of the firm. The resource-based view posits that firms can maintain competitive advantage if they develop valuable, rare, inimitable and non-substitutable resources (Barney, 1991). Building on this, the natural-resource-based view argues that environmental capabilities can be strategic resources if firms develop pollution prevention, product stewardship and sustainable development capabilities (Hart & Dowell, 2011). In this view, GHRM can be seen as a firm capability that enables firms to develop environmentally knowledgeable and motivated human resources.

Another perspective on the role of GHRM comes from stakeholder theory. Firms have environmental and social expectations from employees, consumers, regulators, communities and shareholders (Freeman, 1984). GHRM practices help organizations to respond to these expectations by operationalizing environmental expectations into organizational policy and practice. Guerci et al. (2016) demonstrated that stakeholder pressures can affect environmental performance through the moderating effect of

GHRM practices, revealing the pivotal role of HR systems in sustainability efforts.

Green Employee Behavior is an intermediary between GHRM and performance. Green Employee Behavior is employees' environmentally sustainable actions on the job, such as resource conservation, waste reduction, adherence to environmental policies, and proactively participating in green activities. At the employee level, HRM has been shown to impact environmental performance through its effect on employee behavior and attitudes (Paillé et al., 2014). Dumont et al. (2017) showed that green HRM practices and psychological green climate and green values at work are positively associated with green behavior in the workplace. Likewise, Fawehinmi et al. (2020) found that GHRM and environmental knowledge lead to green behavior. The behavior component of sustainability is also corroborated by studies on workplace pro-environmental behavior. Bissing-Olson et al. (2013) showed that emotional states and pro-environmental attitudes predict daily green behavior at work. Boiral et al. (2015) highlighted that pro-environmental employee behavior can be both mandatory and discretionary actions contributing to meeting organizational environmental goals. Norton et al. (2015) also suggested that pro-environmental culture and climate are important contextual factors of employees' consistent green behavior.

The role of training and teamwork in GHRM-performance link is also critical. Jabbour (2013) claimed that environmental training is one of the key practices that organizations use to foster employee awareness, skills and involvement in environmental management. Daily et al. (2007) showed that HR can affect perceived environmental performance via EMS teamwork, suggesting employees need to work together to implement environmental management systems. These results show that green HR practices are not merely administrative processes but behavioral mechanisms that can be used to motivate employees to take part in sustainability.

Sustainable Organizational Performance refers to the ability of an organization to strike a balance between environmental, social and economic objectives. Amrutha and Geetha (2020) highlighted that GHRM is relevant for environmental sustainability but also for social sustainability, in terms of employee well-being and sustainable practices. This further means that the firm performance can be achieved through sustainable supply chain practices, thus indicating that sustainable supply chain systems can result in

operational and strategic benefits (Golicic & Smith, 2013). Delmas and Pekovic (2013) also showed that environmental standards can enhance productivity by enhancing the internal processes.

The validity and measurement quality are important to sustainability studies when using SEM. Fornell and Larcker (1981) came up with a list of criteria used to determine convergent and discriminant validity in latent variables model. The criterion of discriminant validity in variance-based SEM was then introduced by Henseler et al. (2015), who introduced the HTMT criterion used in measuring discriminant validity in variance-based SEM. These criteria are also relevant, as GHRM, Green Employee Behavior, and Sustainable Organizational Performance are latent variables, which require to be measured using a variety of observed items.

Overall, the evidence suggests that GHRM has the potential to enhance sustainable performance through the promotion of green knowledge, motivation and engagement of employees. But the link is not likely to be direct. Green Employee Behavior is a crucial mediator since HR practices must be converted into employee behavior to have an effect on sustainable performance. As a result, this research suggests GHRM has a positive direct and indirect effect on SOP through Green Employee Behavior.

3. Methodology

3.1 Research Design

Quantitative, explanatory, and cross-sectional design was used in study to investigate the effect of GHRM on Sustainable Organizational Performance mediated by Green Employee Behavior. The design was quantitative because the focus was on testing relationships between latent constructs based on theory and using indicators and statistical models. The explanatory design enabled testing of both direct and indirect relationships among the variables.

GHRM was the independent variable; Green Employee Behavior the mediating variable and SOP was the dependent variable in the conceptual model. Structural Equation Modeling was employed because it allows for the evaluation of measurement and structural relationships among latent variables. This was appropriate to test the impact of environmentally oriented HR practices on organizational sustainability performance, both directly and through Green Employee Behavior.

3.2 Population and Sampling

The study population included employees and managers in organizations where HR practices,

environment-related programs and sustainability-related activities are important for the operation of the organization. This includes manufacturing companies, service firms, educational, healthcare, banking, hospitality companies and other businesses that are engaged in formal or informal sustainability activities.

The study employed a purposive sampling method because it was necessary to include respondents who are well-informed about HR practices, environmental initiatives, employee behavior and other sustainability-related outcomes in an organization. Inclusion criteria for respondents were having previous work experience in the organization and the ability to evaluate the existence of green HR practices and environmental behavior in the workplace. The sampling technique was suitable for the study as it was based on expert opinion rather than public opinion.

A sample of 300 was used for the final analysis. This was sufficient for SEM because the model consisted of three latent and fourteen observed variables. It also ensured enough statistical power for estimating path coefficients, mediation effects and measurement model estimates.

3.3 Data Collection Method

We used a questionnaire to gather primary data. The questionnaire was developed to elicit standardized responses on GHRM, Green Employee Behavior and SOP. The questionnaire contained a 5-point Likert scale from 1 = strongly disagree to 5 = strongly agree. We chose Likert scale because it is commonly used to measure perceptions, attitudes and evaluations in organizational and sustainability studies.

The survey had two sections. The first part of the questionnaire gathered demographic and organizational data such as industry, size of the company, years of experience, gender, age and education. The second section captured the three main constructs of the study. GHRM was measured by five items capturing green recruitment, green training, green performance management, green rewards, and green employee involvement. Green Employee Behavior was measured using four items reflecting environmentally sustainable actions in the workplace (e.g., energy saving, waste recycling, adherence to environmental policies and procedures, voluntary involvement in green activities). Sustainable Organizational Performance was measured by five items capturing environmental, social and economic performance. The items were measured as reflective indicators as the items were expected to reflect the latent construct. The questionnaire was pre-tested for

clarity, appropriateness and conceptual fit to ensure that the items were appropriate for the context of the study.

3.4 Data Analysis Technique

A stepwise analytical approach was used to analyze the data. Initially, data were checked for missing values, response inconsistencies & response errors. The next step involved descriptive statistics to describe the sample demographic and key variables of interest. The mean scores of the constructs were calculated by averaging the corresponding items for GHRM, Green Employee Behavior and Sustainable Organizational Performance.

Cronbach's alpha was calculated to evaluate the reliability (internal consistency), with a threshold of 0.70 or higher deemed acceptable. The measurement model was assessed in terms of factor loadings, reliability, and model fit. The structural model was then evaluated to examine relationships between latent variables.

SEM was conducted using SEM procedures in Python. The latent variables in model were GHRM, Green Employee Behavior and SOP. The paths included GHRM to Green Employee Behavior, GHRM to SOP, and Green Employee Behavior to Sustainable Organizational Performance. The indirect effect of GHRM on SOP through Green Employee Behavior was used to test the mediation of Green Employee Behavior.

The fit of the model was evaluated using the commonly reported fit indices for SEM such as chi-square, CFI, Goodness-of-Fit Index, Adjusted Goodness-of-Fit Index, NFI, TL Index, RMSE of Approximation, Akaike Information Criterion and Bayesian Information Criterion. The path coefficients, SE, z-values and p-values were used to test statistical significance and direction of relationships.

3.5 Ethical Considerations

The research adheres to the ethical guidelines for survey-based research in organizations. Respondents were free to choose whether to participate in the study, and they were briefed about the research purpose prior to answering the questionnaire. We did not ask for any identifiable data, and responses were confidential. Participants were informed that there were no risks associated with participating, and they could withdraw from the research at any time.

Data was only used for research purposes. Data were presented in aggregate to avoid identification of the respondents or organizations. The management and analysis of data was ethically conducted, considering the privacy, transparency

and accuracy. These steps were taken to make sure that the study met ethical standards of conducting research with human participants and to ensure the integrity of the research process.

4. Results

4.1 Descriptive Statistics

The descriptive analysis was done to provide a summary of the distributional characteristics of the

three latent constructs that were employed in the study: GHRM, Green Employee Behavior, and SOP. The findings are the number of observations, mean, standard deviation, minimum, quartile, and maximum scores of each construct, as shown in Table 1.

Table 1. Descriptive Statistics of the Main Constructs

Construct	count	mean	std	min	25%	50%	75%	Max
GHRM	300	3.698	0.593	1.622	3.282	3.695	4.127	5.000
GEB	300	2.399	0.591	1.042	1.966	2.392	2.823	4.187
SOP	300	2.518	0.623	1.000	2.089	2.510	2.927	4.454

The descriptive results reveal that GHRM had the highest mean score of the three constructs with the mean of 3.698 and the SD of 0.593.

This implies that respondents had mentioned a moderately high degree of green HR practices. Green Employee Behavior had a mean of 2.399 and Sustainable Organizational Performance had a mean of 2.518. The values lead to the conclusion that despite the relatively high visibility of green HR practices, green behavior at the employee level, and sustainability performance outcomes were relatively low.

4.2 Graphical Presentation of Construct Means

The mean scores of the three major constructs were also analyzed graphically to give a better visual comparison of the relative levels of GHRM, Green Employee Behavior and SOP. These constructed means are graphically compared and the results are given in Figure 1.

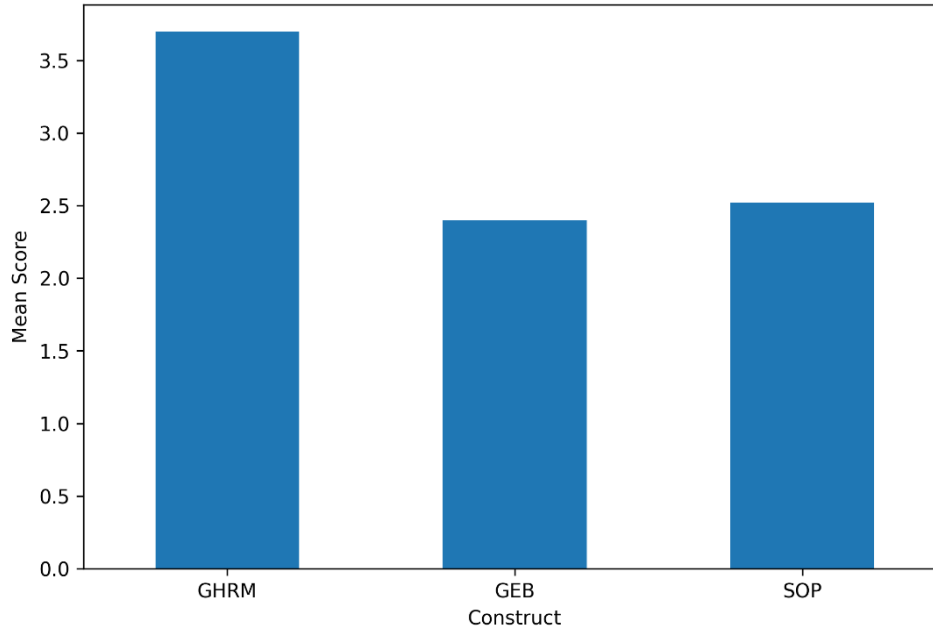


Figure 1. Mean Scores of Main Constructs

As Figure 1 verifies, the GHRM had highest mean score of study variables.

The apparent distinction between the constructs of GHRM and the two outcome-related constructs indicates that the presence of green HR practices does not necessarily lead to equally high levels of employee green behavior or sustainable

performance. This trend offers a preliminary rationale in testing mediating role of Green Employee Behavior on structural model.

4.3 Correlation Analysis

Pearson correlation analysis was conducted to test initial direction and strength of association of

GHRM, Green Employee Behavior, and SOP. The analysis gives a first statistical foundation of the analysis of whether the observed associations are

consistent with the theoretical relationships proposed in the study as indicated in Table 2.

Table 2. Correlation Matrix of the Main Constructs

Construct	GHRM	GEB	SOP
GHRM	1	0.608	0.579
GEB	0.608	1	0.624
SOP	0.579	0.624	1

The correlation results show positive associations among all constructs.

GHRM had a positive relationship with Green Employee Behavior, $r = 0.608$, and Sustainable Organizational Performance, $r = 0.579$. A positive correlation was also found between Green Employee Behavior and Sustainable Organizational Performance, $r = 0.624$. These coefficients are indicative of moderate to strong positive relationships and give initial support on the hypothesized structural paths.

4.4 Correlation Matrix Figure

A graphical correlation matrix was generated to supplement numerical correlation results and make the relative strength of the associations more visible. This figure provides a compact visual representation of correlation coefficients among three main constructs, as presented in Figure 2.

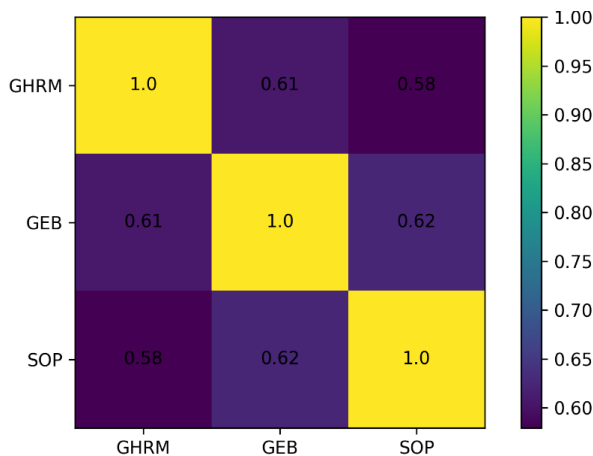


Figure 2 supports the numerical correlation results reported in Table 2.

The strongest bivariate correlation was observed between Green Employee Behavior and SOP with a correlation = 0.624. This means that actions at an individual level are closely associated with the perceived sustainable performance. The positive relationship that exists between GHRM and Green Employee Behavior, also indicates that green HR practices can have their way to green employee behavior.

4.5 Reliability Analysis

The reliability of internal consistency was evaluated to evaluate the consistency of the measurement items of each construct to reflect the same underlying construct. The reliability criterion was Cronbachs alpha and the reliability estimates of the constructs are provided in Table 3

Table 3. Reliability Analysis

Index	Construct	Cronbach Alpha
0	GHRM	0.966
1	Green Employee Behavior	0.954
2	SOP	0.969

The Cronbach’s alpha values exceeded recommended threshold of 0.70 for all constructs.

GHRM has an alpha of 0.966, Green Employee Behavior has an alpha of 0.954, and Sustainable

Organizational Performance has an alpha of 0.969. The values reflect great internal consistency.

Hence, the measurement items were deemed as reliable to be further structural equation modelled.

4.6 Model Fit Assessment

The sufficiency of developed SEM was tested on the basis of various model fit indices. The indices are used to determine how close the model-implied covariance matrix is to the observed covariance matrix, and the entire results of model fit are shown in Table 4.

Table 4. Model Fit Indices

Model Fit Index	Value
DoF	74.0
DoF Baseline	91.0
chi2	44.8
chi2 p-value	1.0
chi2 Baseline	5399.5
CFI	1.0
GFI	1.0
AGFI	1.0
NFI	1.0
TLI	1.0
RMSEA	0.0

AIC	61.7
BIC	176.5
LogLik	0.1

The model fit results indicate very strong fit between the proposed SEM model and observed data.

The chi-square value was 44.794 and the covariance matrices model implied and observed had 74 degrees of freedom and 0.997 chi-square p-value respectively. All the values of CFI, GFI, AGFI, NFI and TLI were greater than 0.99, which is an excellent model fit. The RMSEA was 0.000 which also indicated that there was virtually no approximation errors in the model. In general, the model fit measures indicate the sufficiency of the suggested measure and structural model.

4.7 Structural Model Results

Structural path analysis was used to test hypothesized direct relationships. The findings are path coefficients, SE, z-values, p-values, and the decisions regarding the hypothesis under the direct effects between GHRM, Green Employee Behavior, and SOP which are reported in Table 5.

Table 5. Structural Model Path Coefficients

lval	op	rval	Estimate	Std. Err	z-value	p-value
GEB	~	GHRM	0.626150074	0.050949348	12.28965815	0
SOP	~	GHRM	0.32851861	0.062124904	5.288034045	1.23638E-07
SOP	~	GEB	0.476206492	0.064080791	7.431345438	1.0747E-13

The structural model results show that all direct paths were positive and statistically significant.

The positive impact of GHRM on SOP, $\beta = 0.329$, $z = 5.288$, $p < 0.001$, which supports H1. GHRM was also significant in its positive impact on Green Employee Behavior, $\beta = 0.626$, $z = 12.290$, $p < 0.001$, which supports H2. As well, Green Employee Behavior positively and significantly affected Sustainable Organizational Performance, $\beta = 0.476$, $z = 7.431$, $p < 0.001$ which supports H3. These findings suggest that green HR practices not only have a direct impact on sustainable performance but also indirectly through reinforcing employees to be green.

4.8 Structural Equation Model Figure

The estimated structural model was visualized to present the direction and relative magnitude of the relationships among the three latent constructs. The path model includes the direct effect of GHRM on SOP and the indirect pathway operating through Green Employee Behavior, as shown in Figure 3.

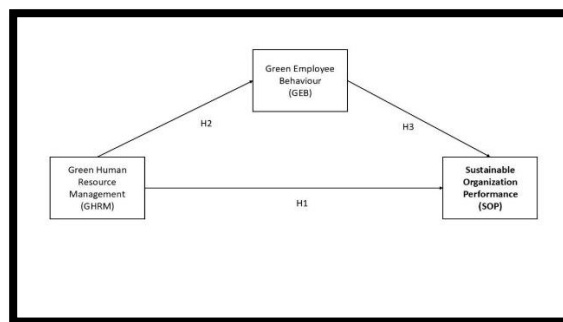


Figure 3. Structural Equation Model

Figure 3 visually summarizes the estimated structural relationships. The direct path from GHRM to Green Employee Behavior was the strongest, $\beta = 0.626$. This suggests that Green HR Management has significant impact on green employee behaviors. The path from Green Employee Behavior to Sustainable Organizational Performance was also significant and strong, $\beta = 0.476$, although the direct path from GHRM to SOP was significant, $\beta = 0.329$. This indicates partial

mediation, with GHRM having a direct influence on SOP as well as an indirect influence via GEB.

4.9 Mediation Analysis

The mediation analysis was conducted to assess whether Green Employee Behavior explains the

relationship between GHRM and SOP. The analysis decomposed total effect into direct and indirect effects, with mediation results presented in **Table 6.**

Table 6. Mediation Analysis

Index	Effect	Path	Estimate
0	Direct Effect	GHRM → SOP	0.32851861
1	Indirect Effect	GHRM → GEB → SOP	0.29817673
2	Total Effect	Total	0.62669534

The mediation analysis shows that the indirect effect of GHRM on SOP through Green Employee Behavior was 0.298.

The direct effect was 0.329 and the total effect 0.627. Given both direct and indirect effects are positive, findings suggest that Green Employee Behavior partially mediates effects of GHRM on SOP. In other words, green HR practices enhance

sustainability performance by promoting green employee behavior.

4.10 Hypotheses Testing Summary

Direct-effect testing and mediation analysis results were combined to conclude the ultimate position of the proposed hypotheses. The summary involves the hypothesized relationship, direction, and empirical decision provided in Table 7.

Table 7. Hypotheses Summary

Hypothesis	Relationship	Expected Direction	Result
H1	GHRM → SOP	Positive	Supported
H2	GHRM → GEB	Positive	Supported
H3	GEB → SOP	Positive	Supported
H4	GHRM → GEB → SOP	Positive mediation	Supported

The hypotheses testing results show that all proposed hypotheses were supported.

The results support that GHRM positively influences SOP, GHRM positively affects Green Employee Behavior, and Green Employee Behavior positively affects Sustainable Organizational Performance. The mediation findings also support H4 by showing that Green Employee Behavior has a positive mediation effect on the association between GHRM and SOP.

4.11 Summary of Empirical Findings

The empirical findings support the SEM model statistically. The reliability coefficients ranged from 0.954 to 0.969, indicating excellent reliability of the measurement scales. The correlation matrix showed positive and substantial correlations between the constructs, ranging from 0.579 to 0.624. The SEM fit indices showed excellent model adequacy, with CFI = 1.006, GFI = 0.992, TLI = 1.007, and RMSEA = 0.000. The structural model showed that GHRM was a significant predictor of Green Employee Behavior, $\beta = 0.626, p < 0.001$, and SOP, $\beta = 0.329, p < 0.001$. Green Employee Behavior was also a significant predictor of SOP, $\beta = 0.476, p < 0.001$. Finally, there was an indirect effect of

GHRM on SOP through GEB, $\beta = 0.298$, thus confirming that Green Employee Behavior mediated relationship between GHRM and SOP. The findings confirm that green HR practices have a direct influence on and indirectly influence SOP through Green Employee Behavior.

5. Discussion

The results strongly support the theorized link between GHRM, Green Employee Behavior and SOP. The descriptive findings revealed that GHRM had the highest mean score of the three constructs, suggesting that the respondents considered green HR practices to be moderately prevalent in their organizations. The lower mean scores for Green Employee Behavior and SOP indicate that the adoption of formal green HR practices do not necessarily result in equally high levels of green employee behavior and SOP. This is significant in that it suggests that implementation of green policy at the organizational level must be translated into action at the employee level for sustainability benefits to be realized.

The correlation results indicated positive and significant correlations between all constructs. GHRM was positively correlated with Green

Employee Behavior and SOP, but Green Employee Behavior was most strongly correlated with Sustainable Organizational Performance. These results provide evidence for the claim that employee behavior plays a crucial role in the sustainability process. For example, companies may develop green hiring, training, appraisal and rewards practices but the impact of these practices will depend on whether employees participate in energy saving, waste reduction, environmental compliance and proactive green initiatives.

The results of the structural model also supported the proposed links. GHRM positively influenced SOP, suggesting that green HR systems can have positive impact on organizational sustainability. This finding is in line with Ahmad (2015), who stressed that green HR policies institutionalize environmental responsibility in organization. It is also in line with Jackson et al. (2011), who suggested that HRM is a key part of the strategy to improve environmental management by institutionalizing sustainability through employee-related systems and practices.

The path from GHRM to Green Employee Behavior confirms that green HR policies and practices affect employees' green behavior. This finding supports Dumont et al. (2017), who showed that Green HRM practices improve green employee behavior in the workplace through psychological green climate and employee green values. It also corroborates Fawehinmi et al. (2020) who demonstrated that GHRM and environmental knowledge predict employees' green behavior. This finding suggests employees are more likely to engage in pro-environmental actions when sustainability-related expectations are communicated to them through HR policies, training, appraisal and rewards.

The positive influence of Green Employee Behavior on SOP suggests that employees' actions have impact on sustainability performance of the organization. This finding confirms Paillé et al. (2014), who showed that HRM affects employee-level environmental performance. It also aligns with Boiral et al. (2015), who suggested that employees' pro-environmental behavior is a combination of formal and informal actions to achieve environmental goals. The result supports the notion that sustainable performance is not only a top-down, managerial result but also a bottom-up result of employee actions.

The mediation analysis revealed that Green Employee Behavior partially mediates the GHRM-SOP relationship. This suggests that GHRM positively affects sustainable performance directly and indirectly. The direct influence implies that HR policies can improve sustainability through formal

institutional structures, routines and strategies. The indirect effect suggests that there is an influence via employee conduct. This is in line with the resource-based view, which implies that organizational resources are valuable when they are embedded in human capital and routines (Barney, 1991; Hart & Dowell, 2011). It is also consistent with stakeholder theory as green HR practices assist organizations in meeting sustainability demands by influencing their employees' behavior (Freeman, 1984; Guerci et al., 2016).

The results have several implications. Theoretically, our study adds to the GHRM research by conceptualizing Green Employee Behavior as a behavioral mechanism that connects HR systems and sustainable performance. In terms of research methodology, the SEM analysis confirms that GHRM, Green Employee Behavior and SOP can be modelled as latent variables in an integrated way. Pragmatically, the results show that businesses cannot implement green HRM policies just because it will put them on the right side. Instead, Human Resources ought to come up with training, rewards, appraisal and employee participation schemes which will lead to observable green behavior. Supervisors ought also to monitor whether their subordinates apply green policies in the work place.

There are limitations to the study. First, the study was cross-sectional and therefore, it did not lend to causal inferences as all the variables had been measured simultaneously. Second, common method variance can be due to the use of perceptual data that is collected through the use of a survey, but this can be controlled using confidentiality and standardization of measurements. Third, the model was minimalistic and had one mediator, yet other variables like green culture, environmental commitment, green innovation or leadership can also mediate the GHRM-performance relationship. Fourth, the findings might vary across industries, firm size and country. In future studies, longitudinal designs, multiple sources of data, industry specific sample and other alternative models should be considered.

6. Conclusion

This research investigated the effects of Green Human Resource Management on Sustainable Organizational Performance via Green Employee Behavior. The study revealed that GHRM positively affects the Sustainable Organizational Performance and Green Employee Behavior. Sustainable Organizational Performance also had a positive impact on the Green Employee Behavior. Also, the mediation test confirmed the partial

mediation of Green Employee Behavior on the relationship between GHRM and SOP. Such a discovery implies that green HR practices will lead to sustainability not only by formalizing the organizational systems but also by green employee behavior. The research builds on existing knowledge, by bringing together GHRM, Green Employee Behavior and SOP in the SEM model. It supports the view that employee behavior plays a role in the sustainability outcomes generated by green HR systems. It also confirms that HRM may be used as a tool to build sustainability-focused organizational capability. The research provides practitioners with insights about the need to align human resource management (HRM) activities such as staffing, training and development, performance appraisal, rewards and employee

involvement with environmental goals. Companies aiming for sustainability should make sure that green HR policies are not only written but communicated to employees. This study can be built on in a few ways. Longitudinal studies would provide stronger evidence of causal relationships between GHRM and sustainability. Other possible mediators include green innovation, environmental commitment, green organizational culture or psychological green climate. Cross-industry, cross-country and cross-firm size studies also help understand cross-contextual variations. Finally, future studies should incorporate multiple data sources (employees, HR managers and sustainability officers) to minimize common method bias and enhance the validity of results.

7. References

- Ahmad, S. (2015). Green human resource management: Policies and practices. *Cogent Business & Management*, 2(1), 1030817.
- Amrutha, V. N., & Geetha, S. N. (2020). A systematic review on green human resource management: Implications for social sustainability. *Journal of Cleaner Production*, 247, 119131.
- Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin*, 103(3), 411–423.
- Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of Management*, 17(1), 99–120.
- Bissing-Olson, M. J., Iyer, A., Fielding, K. S., & Zacher, H. (2013). Relationships between daily affect and pro-environmental behavior at work: The moderating role of pro-environmental attitude. *Journal of Organizational Behavior*, 34(2), 156–175.
- Boiral, O., Paillé, P., & Raineri, N. (2015). The nature of employees' pro-environmental behaviors. In J. L. Robertson & J. Barling (Eds.), *The psychology of green organizations* (pp. 12–32). Oxford University Press.
- Chin, W. W. (1998). The partial least squares approach to structural equation modeling. In G. A. Marcoulides (Ed.), *Modern methods for business research* (pp. 295–336). Lawrence Erlbaum Associates.
- Cohen, J. (1988). *Statistical power analysis for the behavioral sciences* (2nd ed.). Lawrence Erlbaum Associates.
- Daily, B. F., Bishop, J. W., & Steiner, R. (2007). The mediating role of EMS teamwork as it pertains to HR factors and perceived environmental performance. *Journal of Applied Business Research*, 23(1), 95–109.
- Delmas, M. A., & Pekovic, S. (2013). Environmental standards and labor productivity: Understanding the mechanisms that sustain sustainability. *Journal of Organizational Behavior*, 34(2), 230–252.
- Dumont, J., Shen, J., & Deng, X. (2017). Effects of green HRM practices on employee workplace green behavior: The role of psychological green climate and employee green values. *Human Resource Management*, 56(4), 613–627.
- Elkington, J. (1997). *Cannibals with forks: The triple bottom line of 21st century business*. Capstone.
- Fawehinmi, O., Yusliza, M. Y., Mohamad, Z., Noor Faezah, J., & Muhammad, Z. (2020). Assessing the green behaviour of academics: The role of green human resource management and environmental knowledge. *International Journal of Manpower*, 41(7), 879–900.
- Fornell, C., & Larcker, D. F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*, 18(1), 39–50.
- Freeman, R. E. (1984). *Strategic management: A stakeholder approach*. Pitman.
- Gholami, H., Rezaei, G., Saman, M. Z. M., Sharif, S., & Zakuan, N. (2016). State-of-the-art green HRM system: Sustainability in the sports center in Malaysia using a multi-methods approach and opportunities for future research. *Journal of Cleaner Production*, 124, 142–163.
- Golicic, S. L., & Smith, C. D. (2013). A meta-analysis of environmentally sustainable supply chain management practices and firm performance. *Journal of Supply Chain Management*, 49(2), 78–95.
- Guerci, M., Longoni, A., & Luzzini, D. (2016). Translating stakeholder pressures into environmental performance: The mediating role of green HRM practices. *The International Journal of Human Resource Management*, 27(2), 262–289.

19. Hart, S. L., & Dowell, G. (2011). A natural-resource-based view of the firm: Fifteen years after. *Journal of Management*, 37(5), 1464–1479.
20. Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135.
21. Jabbour, C. J. C. (2013). Environmental training in organisations: From a literature review to a framework for future research. *Resources, Conservation and Recycling*, 74, 144–155.