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# The influence of green human resource management practices and employee green behavior on business performance in sustainability-focused organizations

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Drawing on the Ability-Motivation-Opportunity, Corporate Environmentalism, and Value Belief Norm theories, this study proposes a framework that focuses on the consequences of green human resource management practices. We collected data from employees ($n = 184$) in sustainability-focused organizations in the United Arab Emirates. The results suggest that employee green behavior significantly shapes the relationships between environmental orientation, green competence building, green motivation, and organizational business performance. The study results allow us to understand better employee green behaviors and their impact on improving organizational business performance in an emerging nation context. The novelty of this research lies in the presentation of an integrated framework to solve the contemporary challenge facing businesses in promoting the green behaviors of employees.

**Keywords:** green human resource management; green behaviors; business performance; sustainability; Middle East

## 1. Introduction

Rapid industrialization has been widely acknowledged as a significant cause of environmental degradation and has posed several challenges to businesses in the modern world (Singh *et al.* 2020). There is also a surge in community pressure to increase the focus on policy and practice to change the behaviors of individuals and promote pro-environmental attitudes (Mehrajunnisa *et al.* 2021). In this context, green behaviors are recognized as curbing the environmental crisis and achieving green growth (Environment Vision 2030). The ongoing challenge facing businesses is the ability to influence the behaviors of employees in the workplace to mitigate environmental impacts (Pinzone *et al.* 2016). Although the role of employees has been highlighted in mitigating ecological footprints (Uddin *et al.* 2021), empirical research related to employee green behaviors (EGB) in a corporate setting remains largely fragmented (Dumont, Shen, and Deng 2017; Norton *et al.* 2017). Moreover, prior studies were undertaken mainly in a western context (e.g., Pinzone *et al.* 2016; Dumont, Shen, and Deng 2017; Yuriev, Boiral, and Guillaumie 2020).

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Green human resource management (GHRM) research is arguably still in its infancy, and the inferences about the effects on employee behaviors and greener outcomes retain their importance as promising avenues in emerging countries (Masri and Jaaron 2017; Mehrajunnisa *et al.* 2021; Roy and Khastagir 2016). Also, studies in a Middle Eastern context take a very different example (e.g., Ababdneh 2021; Masri and Jaaron 2017; Obeidat, Al Bakri, and Elbanna 2020; Mehrajunnisa *et al.* 2021) remain relatively limited in both scope and focus.

In an attempt to address this gap, drawing synergistically on Ability-Motivation-Opportunity (AMO), Corporate Environmentalism, and Value Belief Norm theories, the present study examines the relationships between GHRM practices (such as environmental orientation, green competence building, green motivation, and green employee involvement) and organizational business performance (OBP). Further, as many studies to date have focused on voluntary behaviors (e.g., Zhang *et al.* 2021) rather than the task-related endeavors of EGB; the present study focuses on the mediating role of EGB. Even though many organizations are trying to inculcate EGBs effectively, there is an apparent discrepancy between environmental policies and the actual behavioral patterns of employees, especially in large firms (Masri and Jaaron 2017). There is a need to investigate further the relationships between green behaviors and corporate performance (Mehrajunnisa *et al.* 2021; Yuriev, Boiral, and Guillaumie 2020). Researchers and practitioners acknowledge the lack of comprehensive studies in manufacturing sectors in a developing country context (Masri and Jaaron 2017; Roy and Khastagir 2016). Studying GHRM practices and EGBs in emerging economies is especially important, as the rising energy demand has projected carbon dioxide emissions. Organizations, especially in the Middle East, are trying to implement sustainability initiatives to match current market trends (Environment Vision, 2030).

The study has implications for practical and theoretical acumens. The study empirically tests an integrated framework in solving the contemporary challenge facing businesses in promoting the behavior of employees toward green initiatives that have not been the target of significant research attention, especially in the emerging Arab realm. At enterprise, national, and global public policy levels, it offers a practical pathway for realizing a 2030 Green Economy target. It aids UAE to pursue a climate-smart industry by developing green workforce behaviors and advancing toward the economic diversification agenda. Also, this study extends theory and GHRM practices implication in sustainability-focused sectors. It will contribute toward fulfilling the national (UAE Green Agenda 2030 and UAE Centennial 2071) in the Arab culture and society.

The remainder of this paper is structured as follows: Section 2 presents the literature review. Section 3 introduces the research methodology, analyzing our results presented in Section 4. Section 5 discusses our work, including a narrative on limitations and scope for future research, followed by the conclusion mentioned in Section 6.

## 2. Literature review and hypotheses development

### *2.1. Green human resource management (GHRM) practices*

The contemporary management practices promoting environmental sustainability have burgeoned to initiate green human resource management (GHRM) practices in businesses (Renwick, Redman, and Maguire 2013). Ren, Tang, and Jackson (2018) opine GHRM as an effective HRM system that aims to understand, develop, and align a company's actions to minimize its environmental impact. GHRM practices combine

traditional HR practices with green initiatives and long-term strategic intent Green HR practices entail boosting process efficiencies, sinking waste disposal in the environment, optimizing costs, etc. (Masri and Jaaron 2017; Guerci, Longoni, and Luzzini 2016). The realization of organizational policies and green strategies is ensured toward ecological imperatives only when a synergistic blend of both human resource practices of the organization and environmental management are well aligned (Dumont, Shen, and Deng 2017). Moreover, past workplace green behavior studies have mainly explored the effect of organizational sustainability and performance through GHRM practices (Paillé *et al.* 2014; Norton *et al.* 2015).

### *2.2. Theoretical underpinnings*

The research framework developed in this study draws on the AMO theory, Corporate Environmentalism, and Value Belief Norm (VBN) theoretical propositions.

AMO theory, proposed by Appelbaum *et al.* (2000), provides a framework to understand better the links associated with HRM practices and organization green performance, such as higher productivity, performance, and reduced waste (Dumont, Shen, and Deng 2017; Mehrajunnisa *et al.* 2021). To influence employee workplace green behavior, an organization has to develop green ability-enhancing practices through attracting and developing high-performing workforces, using, among others, appropriate recruitment, selection, and training endeavors (Dumont, Shen, and Deng 2017; Xie and Zhu 2020). The development of green motivation-enhancing practices and a commitment of employees through methods such as the use of green rewards creates an ethical organizational climate that fosters and cultivates effective green behaviors (Guerci, Longoni, and Luzzini 2016). Further, organizations can endorse green opportunity-enhancing HR practices through work teams, adequate resource allocation, support, information sharing, and enabled work contexts (Renwick *et al.* 2016; Cop, Alola, and Alola 2020). The present study analyzes the relationships between AMO components at the organizational and individual levels toward improving green behaviors, thus driving business performance in a single and integrative model, capturing green performance (GP) and market performance (MP) indicators in a Middle Eastern context.

Beyond AMO theory, this study also employs Corporate Environmentalism theory (Banerjee 2002) to examine Environmental Orientation (EO) at the organizational level. Our research focuses on the human resource management function to investigate when and how EO as a strategic capability contributes to implementing green HR practices, green behaviors, and business performance. Internal environmental orientation represents the firm's ethical values both at the corporate and functional levels and its commitment to environmental initiatives (Banerjee, Iyer, and Kashyap 2003). Extant studies have usually investigated only direct links between EO and performance (Obeidat, Al Bakri, and Elbanna 2020) or disregarded the performance variable in the analysis (Banerjee, Iyer, and Kashyap 2003). Motivated by this research gap and to validate the belief of EO scholars that EO as a strategic variable has a substantial impact on both performance and behaviors, we argue that EO at the organizational level impacts individual behaviors as well as a firm's business performance.

Finally, we utilize the VBN theory (Stern 2000) to explain EO and EGB in the workplace. VBN theory contends that personal morals, values, and collective consciousness, together with ethics, cultures, and customs, drive EO and EGB. To this

end, EO and EGB are broadly understood as interactions between the employee and the environment.

### 2.3. Hypotheses development

#### 2.3.1. Environmental orientation and EGB

A firm's internal environmental orientation (EO) can be conceptualized as an ethical value or shared perception regarding how environmental sustainability is promoted among employees in terms of ecologically responsible operations within the company (Banerjee, Iyer, and Kashyap 2003). In line with VBN theory, scholars (Dumont, Shen, and Deng 2017; Obeidat, Al Bakri, and Elbanna 2020) posit that EO aids organizational support and environmental values and motivates staff toward eco-initiatives. Employees' engagement toward green behavior is often impacted by implementing green practices and policies in an organization's internal strategy, i.e., EO (Robertson and Barling 2013; Uddin *et al.* 2021). Understanding, promoting, influencing, and changing the environmental behaviors of employees are critical to the environmental sustainability of organizations and driven by the setting of effective environmental strategy, organizational policies, and actions (Paillé *et al.* 2014). The firm's strategic orientation toward environmental management encourages employees to exhibit green job behaviors to reduce environmental pollution (Singh *et al.* 2020). Environmental strategies at the firm level portray the mindset of top management teams to view environmental issues as opportunities or threats.

Moreover, Dumont, Shen, and Deng (2017) report that employees' perceptions and interpretations of the existence of their organization's EO directly affect EGB. Successful implementation of green practices and strategies by considering environmental issues at the strategic level brings the company benefits with green innovation; green-conscious behaviors, can create a competitive environment, and help to identify new business opportunities (Mehrajunnisa *et al.* 2021). Relatedly, Salvador and Burciaga (2020) empirically established a positive relationship between a firm's internal EO and EGB in in-role and extra-role behaviors. Hence, we postulate

H1a. EO has a positive impact on EGB.

#### 2.3.2. Green competence building (GCB) and EGB

Developing employee capabilities through training influences employee workplace green behavior and aids in achieving sustainability and environment-related goals (Dumont, Shen, and Deng 2017; Pham *et al.* 2020). A dynamic external environment requires GHRM practices that address the need for developing employee abilities (environmental training and increased awareness to improve environmental control and their ability to adapt to change etc.) and behaviors and creates a proactive attitude and behaviors toward environmental concerns) helps organization's green performance (Renwick, Redman, and Maguire 2013). Zibarras and Coan (2015) affirm that HR competencies (environmental training, awareness, information sharing, environmental value or skills, seminars, etc.) aid in commencing change toward green behavioral practices and creating a green organizational identity. In addition, Ones and Dilchert (2013) remind us that information-sharing practices tend to assist employees in aligning their behaviors. Information-sharing practices and the level of training received by

employees can enhance a firm's environmental behavior (Masri and Jaaron 2017; Obeidat, Al Bakri, and Elbanna 2020). Green Competence Building practices enrich employees' environmental knowledge and skills to resolve environmental problems and minimize environmental impacts, ultimately increasing organizational performance (Dumont, Shen, and Deng 2017; Paillé *et al.* 2014). Also, green competencies associate employees with the firm's core business activities to help improve the firm's sustainable performance (Mehrajunnisa *et al.* 2021). An organization's sustainability journey benefits from employees' collective attitudes and behaviors through GCB practices (Pinzone *et al.* 2016). We thus postulate:

H1b. GCB has a positive impact on EGB.

### *2.3.3. Green motivation and EGB*

Effective appraisal, intrinsic and extrinsic rewards are linked to green performance, improve employee engagement, and undertaking green behaviors (Mehrajunnisa *et al.* 2021; Ones and Dilchert 2013). Green motivation (GM) aligns employees' behaviors with the organization's environmental goals (Jabbour *et al.* 2013). Such reason enables organizations to provide meaningful incentives to maintain the momentum of persistent green behaviors among staff (Zibarras and Coan 2015). What is more, by incorporating elements of green compensation programs, managers can promote green behaviors among staff (Obeidat, Al Bakri, and Elbanna 2020). For example, staff appraisals based on green behavior or attitude can lead to superior environmental performance (Guerci, Longoni, and Luzzini 2016). Establishing a performance management system based on environmentally responsible behaviors and outcomes promotes a firm's strategy toward a sustainability agenda among employees (Renwick, Redman, and Maguire 2013). In a similar vein, providing both intrinsic and extrinsic benefits to staff can help promote eco-friendly initiatives (Renwick *et al.* 2016) and facilitate both in-role and extra-role EGB's (Dumont, Shen, and Deng 2017). Building on these observations, we hypothesize:

H1c. GM has a positive impact on EGB.

### *2.3.4. Green employee involvement and EGB*

Several studies have affirmed Green Employee Involvement (GEI) practices as dominant forces in stimulating EGBs (Dumont, Shen, and Deng 2017; Renwick, Redman, and Maguire 2013). GEI leads to recycling behavior, boosts eco-friendly innovations, and reduces emanations (Paillé *et al.* 2014). Green involvement practices allow employees to use their green knowledge and abilities and, thus, improve the firm's environmental performance and green-oriented behaviors (Pinzone *et al.* 2016). Engaging staff is a significant challenge in curbing environmental concerns and improving EGBs (Zibarras and Coan 2015). Employees' participation increases employee learning and collaboration, thereby enhancing the morale, team spirit, and participative partnership of employees in the organization toward innovative behaviors and ideas (Mehrajunnisa and Jabeen 2020). When managers and supervisors actively involve employees in environmental goals, it improves green performance and green workplace behaviors (Obeidat, Al Bakri, and Elbanna 2020). We thus wish to examine:

H1d. GEI practices have a positive impact on EGB.

### 2.3.5. *Environmental orientation and OBP*

Drawing on VBN theory, a firm's EO reflects a collective consciousness, preferences, and decision-making endeavors involved in managing the interface between a business and its ecologically responsible operation (Banerjee, Iyer, and Kashyap 2003; Dumont, Shen, and Deng 2017). Articulating a clear environmental vision and internal environmental strategy guides employees to engage in environmental initiatives (Renwick, Redman, and Maguire 2013). Obeidat, Al Bakri, and Elbanna (2020) contend that stakeholders interpret an effective corporate environmental strategy as a form of reinforcement and organizational support. It is also conceptualized by Salvador and Burciaga (2020) as a collective perception among employees that promotes environmental sustainability within the firm's operations. Previous research (Paillé *et al.* 2014) has studied the relationship between corporate environmentalism and a comprehensive set of performance criteria, such as profitability, green performance, market share, and green behaviors. This leads us to hypothesize that:

H2a. EO has a positive impact on OBP.

### 2.3.6. *Green competence building and OBP*

GCB practices enrich employees' environmental knowledge and skills to resolve environmental problems and minimize environmental impacts, ultimately increasing organizational performance (Dumont, Shen, and Deng 2017; Cop, Olorunsola, and Alola 2021). Employees trained in environmental values, technical capabilities, and managerial skills are highly motivated and engaged in their work and contribute to enhancing the firm's performance (Paillé *et al.* 2014). Also, researchers have linked green training and development with environmental and financial performance in the Asia Pacific (Cherian and Jacob 2012). O'Donohue and Torugsa (2016), in their study on manufacturing organizations, provided evidence that GCB impacts a firm's financial performance. Further, green competencies help employees associate the latter with a firm's core business activities and an improvement in a firm's sustainable performance (Xie and Zhu 2020). Hence, we propose:

H2b. GCB has a positive impact on OBP.

### 2.3.7. *Green motivation and OBP*

Effective appraisal and intrinsic and extrinsic rewards linked to green performance improve employee engagement and green undertakings (Li *et al.* 2020). Aligning rewards with environmental practices enables organizations to retain and motivate good employees, initiate changes in employee attitudes, and encourage the development of environmental knowledge and skills toward environmental objectives (Obeidat, Al Bakri, and Elbanna 2020; Roy and Khastagir 2016). Dumont, Shen, and Deng (2017) report that GM helps develop capabilities and behaviors toward environmental objectives and enduring competitive advantage. Firms that adopt green practices and green behaviors benefit from long-term cost optimization, employer branding, greener outcomes, and advancing investor interests (Andersson, Jackson, and Russell 2013). Effective implementation of environmental practices in an organization can

accomplish economic performance alongside green performance (Masri and Jaaron 2017). Therefore, we hypothesize:

H2c. GM has a positive impact on OBP.

#### *2.3.8. Green employee involvement (GEI) and OBP*

GEI practices inculcate employees with green knowledge and develop abilities to handle environmental issues, thereby enhancing green performance (Jabbour *et al.* 2013; Pinzone *et al.* 2016). Paillé *et al.* (2014) found a direct and significant relationship between employee involvement practices, environmental performance, and organizational performance. Employees' participation increases employee learning and collaboration in quality circle programs such as employee suggestion schemes that enhance staff morale, trust, job satisfaction, and participative cooperation through innovative behaviors and ideas (Mehrajunnisa and Jabeen 2020). Dumont, Shen, and Deng (2017) report that GEI practices are vital in initiating change, increasing capabilities, competing in markets, and creating behaviors toward achieving sustainability and green-related projects. Thus, we propose:

H2d. GEI has a positive impact on OBP.

#### *2.3.9. Employee green behavior and OBP*

Employee green behavior is a crucial determinant of an organization's sustainable performance. Previous studies have affirmed a positive relationship between workplace green behavior and organizational performance (Norton *et al.* 2015; O'Donohue and Torugsa 2016). Stimulating employees' responsible green behavior helps enhance environmental initiatives and superior business performance (Roy and Khastagir 2016). Many researchers have affirmed that GHRM practices lead to proactive, environmentally friendly behaviors and improve a firm's performance (Dumont, Shen, and Deng 2017; Mehrajunnisa *et al.* 2021). Identifying and engaging in green behaviors helps foster long-term environmental sustainability (Mehrajunnisa *et al.* 2021). EGB can exhibit many positive business outcomes such as competitive advantage, leader effectiveness, team cohesiveness, intrinsic satisfaction, cost savings, environmental performance, and improved financial performance (Renwick, Redman, and Maguire 2013). Hence, we postulate

H3. EGB has a positive impact on OBP.

### *2.4. Mediating role of EGB*

Prior studies have reported improved employee workplace green behavior with effective implementation of a range of green HRM practices (such as recruitment, performance, reward practices, effective training programs, etc.) in excelling sustainable green business outcomes (Renwick, Redman, and Maguire 2013). Also, the HRM literature suggests that HRM influences organizational performance through its effect on employee work attitudes and behavior (Dumont, Shen, and Deng 2017). Firms that adopt green practices and green behaviors benefit from cost optimization, employer branding, heightened shareholder interests, and competitive advantage (Roy and Khastagir 2016). O'Donohue and Torugsa (2016), in their study, proved the role of

GHRM in the association between proactive environmental management behavior and firm financial performance in small Australian manufacturing firms. Moreover, past workplace green behavior studies have mainly explored the effect of organizational sustainability and performance through GHRM practices (Norton *et al.* 2015). Renwick, Redman, and Maguire (2013) argued that positive financial outcomes and proactive behaviors are reaped when employees' ability, motivation, and opportunity to contribute to the company's shared vision of environmental sustainability. EGB, when impacted by the implementation of green practices, will improve business results (Obeidat, Al Bakri, and Elbanna 2020). Implementing GHRM practices in firms entails benefits concerning efficiency within operations, optimizing cost and waste, renewing HR procedures, and inculcating EGBs (Guerci, Longoni, and Luzzini 2016). Moreover, scholars have demonstrated that GHRM practices lead to proactive, environmentally friendly behaviors and improved firm performance (Dumont, Shen, and Deng 2017; Mehrajunnisa *et al.* 2021) and economic performance (Cherian and Jacob 2012). Contemporary organizations adopting GHRM practices enhance employee green behaviors and sustainable performance in the workplace (O'Donohue and Torugsa 2016). Organizational psychologists have become increasingly interested in predicting EGB or pro-environmental employee behavior as a means of green performance improvement through effective implementation of GHRM practices (Roy and Khastagir 2016). Hence, we propose the following:

H4a. EGB mediates the relationship between EO and OBP.

H4b. EGB mediates the relationship between CGB and OBP.

H4c. EGB mediates the relationship between GM and OBP.

H4d. EGB mediates the relationship between GEI and OBP.

Building on the above assertions, Figure 1 summarizes our proposed theoretical framework.

## 3. Research methodology

The present study employs partial least squares-structural equation modeling (PLS-SEM) using Smart PLS 3.0 (Ringle, Wende, and Will 2005)l. PLS-SEM has emerged as one of the most promising statistical techniques applied to assess complex path models with latent constructs (Hair *et al.* 2019) and when mediation relationships are examined (Henseler, Hubona, and Ray 2016). It provides more favorable solutions with smaller sample sizes relative to other approaches. It helps to understand latent phenomena (such as intentions, attitudes, perceptions, etc., and their impact on performance measures). It can provide unique theoretical insights into behavioral research (Ringle *et al.* 2020). Given these advantages for behavioral research, we consider it an appropriate choice for the present investigation.

### *3.1. Sample and data collection*

We collected data from 43 public, private, and non-profit organizations listed in the Abu Dhabi Sustainability Group (ADSG 2019), United Arab Emirates (UAE).

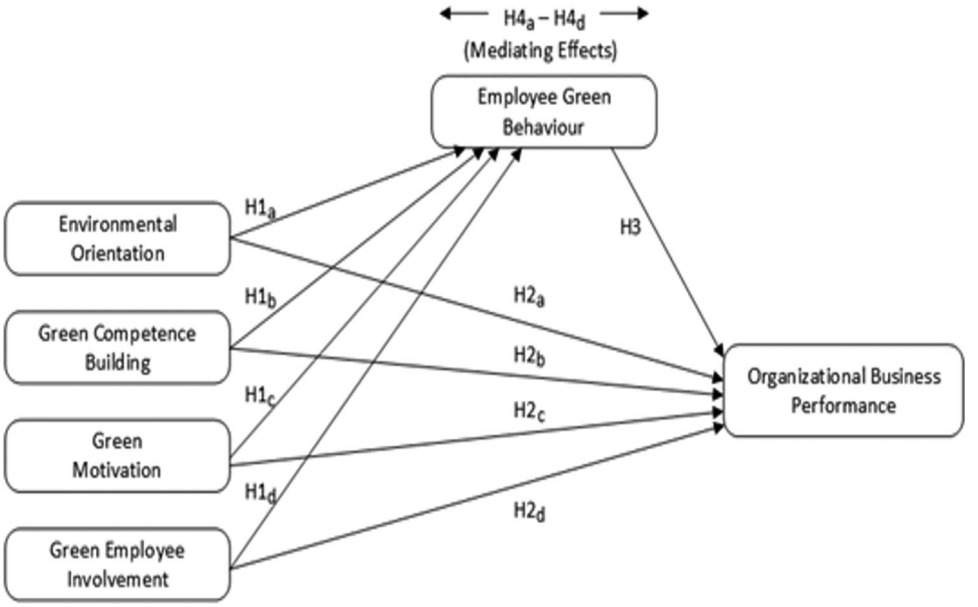


Figure 1. Proposed framework.

ADSG's role is to stimulate environmental and social sustainability in UAE organizations. A total of 1,100 questionnaires were distributed randomly in all emirates of the UAE, with anonymity and confidentiality assured. Five hundred employees initially indicated their willingness to participate in the survey, and 258 questionnaires were ultimately received, reflecting a response rate of 51.7%. After further scrutinizing, 184 responses were found complete and fit for final data analysis, which we deem acceptable relative to similar studies (Ahmad 2012). The final sample comprise of 54.3% male and 45.7% female participants. Table 1 depicts the sample demographics in detail, sub-divided by educational attainment, seniority level, work experience, sector affiliation, firm size, and tenure.

### *3.2. Survey instrument*

The measurement items were adopted from previous studies to ensure content validity and reliability (see Appendix [online supplementary material]). EO was measured using a four-item scale developed by Paillé *et al.* (2014) and Banerjee, Iyer, and Kashyap (2003). A sample item is: "At our firm, we make a concerted effort to let every employee understand the importance of environmental preservation." A three-item scale adapted from Zibarras and Coan (2015) was used to measure GCB. A sample item is: "Training courses aimed at developing/encouraging environmental behavior." GM was measured using a three-item scale by Daily, Bishop, and Steiner (2007). A sample item is: "we are rewarded for making suggestions for improvement on Environmental Management System (EMS)." And GEI was measured by a four-item scale developed by Pinzone *et al.* (2016). A sample item is: "Employees are allowed to make decisions concerning environmental problems." EGB was measured using a six-item scale taken from Dumont, Shen, and Deng (2017). A sample item is: "Today,

Table 1. Demographics of respondents.

| Construct | Characteristics | Frequency | Percent (%) |
|---|---|---|---|
| Gender | Male | 100 | 54.3 |
| | Female | 84 | 45.7 |
| Age | 25 – 35 | 69 | 37.5 |
| | 36 – 45 | 83 | 45.1 |
| | 46 – 55 | 23 | 12.5 |
| | > 55 | 9 | 4.9 |
| Education | Undergraduate | 14 | 7.6 |
| | Diploma | 9 | 4.9 |
| | Graduate | 109 | 59.2 |
| | Postgraduate | 48 | 26.1 |
| | PhD | 4 | 2.2 |
| Designation | CEO/CFO/COO | 9 | 4.9 |
| | Exec Vice President | 3 | 1.6 |
| | Director | 18 | 9.8 |
| | Sr. Manager | 31 | 16.8 |
| | Other | 123 | 66.8 |
| Years of Work Experience | Below 5 years | 21 | 11.4 |
| | 5 – 10 years | 62 | 33.7 |
| | 11 – 20 years | 63 | 34.2 |
| | > 20 years | 38 | 20.7 |
| Sector | Private | 60 | 32.6 |
| | Public | 67 | 36.4 |
| | Not for profit | 57 | 31.0 |
| Firm size | Small (<50) | 10 | 5.4 |
| | Medium (≥50≤250) | 38 | 20.7 |
| | Large (>250) | 136 | 73.9 |
| Organizational tenure | 3–5 years | 5 | 2.7 |
| | 6–10 years | 19 | 10.3 |
| | 11–20 years | 59 | 32.1 |
| | > 20 years | 101 | 54.9 |

I adequately completed assigned duties in environmentally-friendly ways." GP was measured using a seven-item scale validated by Daily, Bishop, and Massoud (2012). A sample item is: "Our facility's environmental efforts have significantly reduced waste within the production process." MP was measured using a four-item scale developed by Ritala (2012). A sample item is: "How would you compare your organization's performance (growth in sales) over the last three years to that of other organizations operating in the same sector?." The survey was initially designed in English and subsequently translated into Arabic by a certified Arabic language professional. A pilot study was conducted to check usability, with 51 respondents (10 academic experts and 41 ADSG affiliates) demonstrating that the questionnaire was suitable for Arabic-speaking respondents.

### *3.3. Common method bias (CMB)*

The questionnaire was first reviewed by industry experts, academic faculty, and members of the ADSG to eliminate ambiguity and reduce social desirability bias. Further, respondents were assured of confidentiality and anonymity. Moreover, while administering the survey, emphasis was laid on assuring respondents that there was no correct or incorrect response. The Abu Dhabi Sustainability Group approved the study for

ethical standards. As a post-hoc measure, CMB was assessed through the testing of full collinearity, indicating the variance inflation factors (VIFs) as proposed by Kock (2015) and Henseler, Ringle, and Sarstedt (2015). The acceptable limit for VIF variation is $\sim 3.3$ or $< 3.3$, indicating a model with null bias or free of CMB. The model was evaluated with VIF values within the threshold limits for all indicators.

## 4. Data analysis and results

The PLS-SEM method consists of two phases: assessment of the measurement model (outer model validation) and assessment of the structural model (estimation of inner model path coefficients).

### *4.1. Measurement model*

Indicator loadings of the measurement model were assessed and found to have greater than 50% variance for indicator items, assuring acceptable reliability of the constructs. This captures how the items are interrelated with other constructs (Hair *et al.* 2019). Reliability (commonly known as Cronbach's $\alpha$) applies only to reflective indicators, which refers to the consistency of the scale. The composite reliability (CR) was also assessed, referring to the internal consistency for all constructs. The reliability and composite reliability of all constructs in the model is greater than 0.70 and thus above the recommended value (Hair *et al.* 2019; Henseler, Hubona, and Ray 2016; Ringle *et al.* 2020). Next, the convergent validity was calculated using the Average Variance Extracted (AVE), showing indicator loadings $> 0.50$ (Hair *et al.* 2017). It follows that all constructs satisfy convergent validity. Table 2 depicts a summary of the measurement model.

The Fornell-Larcker criterion and heterotrait-monotrait (HTMT) approaches were employed to assess discriminant validity. The relevant values (specifically: loadings of indicators $> 0.6$ and threshold limits for HTMT values $< 0.9$) were deemed acceptable. Detailed results are summarized in Tables 3 and 4.

### *4.2. Assessment of structural model*

A bootstrapping method with 5,000 samples and 97.5% confidence intervals was employed, and the results are presented in Figure 2 (Hair *et al.* 2017). The model's goodness is determined by the strength of each structural path defined by the $R^2$ value, predicting the explanatory power of all endogenous constructs (Hair *et al.* 2019). As a general guideline, the $R^2$ value range of 0.75, 0.50, and 0.25 illustrate strong, moderate, and weak effects (Henseler *et al.* 2012; Hair *et al.* 2014). The $R^2$ values of EGB as a mediator (0.430), and OBP (0.564) were found to be satisfactory.

Table 5 illustrates the effect size ($f^2$) metric, which measures the effect of independent variables on the dependent variables EGB, GP, and MP (Hair *et al.* 2017). Predictive relevance ($Q^2$) was also analyzed, explaining how well the endogenous constructs within the structural model define the exogenous constructs. According to Hair *et al.* (2019), any model depicting a value above "zero" has predictive relevance. If it predicts a "zero" value, it shows that the model cannot predict the relationships of the constructs. Usually, ($f^2$ and $Q^2$) values range from 0.02, 0.15, and 0.35, illustrating predictive relevance for small, medium, and large. The blindfolding procedure was applied to access predictive relevance ($Q^2$) with 5,000 bootstrap samples. The results

Table 2. Summary of measurement model.

| | Items | Loading | α | CR | AVE | Rho_A |
|---|---|---|---|---|---|---|
| EO | EO1 | 0.869 | 0.801 | 0.870 | 0.632 | 0.858 |
| | EO2 | 0.775 | | | | |
| | EO3 | 0.905 | | | | |
| | EO4 | 0.594 | | | | |
| GCB | GCB1 | 0.844 | 0.809 | 0.887 | 0.723 | 0.820 |
| | GCB2 | 0.883 | | | | |
| | GCB3 | 0.823 | | | | |
| GM | GM1 | 0.905 | 0.820 | 0.893 | 0.736 | 0.833 |
| | GM2 | 0.825 | | | | |
| | GM3 | 0.842 | | | | |
| GEI | GEI1 | 0.864 | 0.859 | 0.904 | 0.702 | 0.864 |
| | GEI2 | 0.824 | | | | |
| | GEI3 | 0.811 | | | | |
| | GEI4 | 0.851 | | | | |
| EGB | EGB_In_R1 | 0.632 | 0.869 | 0.902 | 0.608 | 0.883 |
| | EGB_In_R1 | 0.822 | | | | |
| | EGB_In_R3 | 0.748 | | | | |
| | EGB_Ex_R1 | 0.852 | | | | |
| | EGB_Ex_R2 | 0.851 | | | | |
| | EGB_Ex_R3 | 0.752 | | | | |
| OBP | OBP_GP1 | 0.739 | 0.898 | 0.920 | 0.50 | 0.907 |
| | OBP_GP2 | 0.637 | | | | |
| | OBP_GP3 | 0.810 | | | | |
| | OBP_GP4 | 0.822 | | | | |
| | OBP_GP5 | 0.786 | | | | |
| | OBP_Gp6 | 0.696 | | | | |
| | OBP_GP7 | 0.754 | | | | |
| | OBP_MP1 | 0.656 | | | | |
| | OBP_MP2 | 0.598 | | | | |
| | OBP_MP3 | 0.570 | | | | |
| | OBP_MP4 | 0.646 | | | | |

Note: See Appendix (online supplementary material) for the abridged names of items.

in all cases, outlined in Table 5, show that the values of $Q^2$ exceed zero and thus illustrate a highly satisfactory predictive capability (Hair *et al.* 2019).

Specifically, we utilize bias-corrected percentile bootstrap confidence intervals rather than normal standard bootstrap confidence intervals due to greater statistical supremacy (Hair *et al.* 2019). We observe that EO ($\beta = 0.206$, $t = 2.299$, $p = 0.022$), GCB ($\beta = 0.263$, $t = 3.473$, $p = 0.001$), GM ($\beta = 0.209$, $t = 2.612$, $p = 0.009$) and GEI ($\beta = 0.130$, $t = 2.026$, $p = 0.043$) all display a significant and direct effect on EGB. Similarly, EO ($\beta = 0.229$, $t = 2.920$, $p = 0.004$) and GCB ($\beta = 0.163$, $t = 2.273$, $p = 0.023$) display a significant and direct effect on OBP. The bias-corrected percentile confidence intervals bootstrapping results for all direct effects on OBP and EGB are summarized in Table 6.

### *4.3. Mediating effects of EGB*

When a mediator is included in the model, path coefficients analysis helps in deciding the prominence of indirect effects and *t* values (Henseler, Hubona, and Ray 2016).

Table 3. Discriminant validity: Fornell-Larcker criterion.

| | EGB | EO | GCB | GEI | GM | OBP |
|---|---|---|---|---|---|---|
| **EGB** | **0.780** | | | | | |
| **EO** | 0.517 | **0.795** | | | | |
| **GCB** | 0.565 | 0.491 | **0.851** | | | |
| **GEI** | 0.467 | 0.461 | 0.561 | **0.838** | | |
| **GM** | 0.548 | 0.583 | 0.609 | 0.448 | **0.858** | |
| **GP** | 0.668 | 0.578 | 0.559 | 0.371 | 0.591 | **0.706** |

Notes: Diagonal elements in bold denote the square root of average variance extracted. The lower diagonal denotes the correlations between the constructs. See Appendix (online supplementary material) for the abridged names of items.

Table 4. Heterotrait-Monotrait Ratio (HTMT).

| | EGB | EO | GCB | GEI | GM |
|---|---|---|---|---|---|
| EGB | 0.611 | | | | |
| EO | 0.661 | | | | |
| GCB | 0.531 | 0.589 | | | |
| GEI | 0.637 | 0.570 | 0.672 | | |
| GM | 0.739 | 0.713 | 0.745 | 0.532 | |
| OBP | 0.611 | 0.640 | 0.635 | 0.413 | 0.678 |

Note: The lower triangle denotes the heterotrait-monotrait values of the constructs (Henseler, Ringle, and Sarstedt 2015).

Further, the mediation is confirmed by checking the bias-corrected confidence interval at 95% for indirect effects in 5,000 bootstrap samples. The mediating effect of EGB on EO and OBP shows a mediating relationship with significant results ($\beta = 0.083$, $t = 2.209$, $p = 0.027$). Similarly, we examined the mediating effect of EGB between GCB and OBP. The findings demonstrate a mediating relationship between the constructs ($\beta = 0.106$, $t = 2.812$, $p = 0.005$). In contrast, the indirect effects of EGB on GEI and OBP cannot be upheld. All findings are summarized in Table 6.

## 5. Discussion

Drawing upon AMO, Corporate Environmentalism, and VBN theories, the present study extends the existing body of knowledge by examining how GHRM practices and EGB influence the OBP of sustainability-focused companies in the United Arab Emirates. Findings reveal that EGB plays a significant role in shaping EO, GCB, GM, and OBP relationships. However, the results do not support the indirect impact of EGB on GEI and OBP.

Our findings indicate a positive and significant association between EO and EGB, as predicted in hypothesis H1a, and between EO and OBP (green and market performance), as proposed in hypothesis H2a. These findings align with prior scholars (Obeidat, Al Bakri, and Elbanna 2020; Mehrajunnisa *et al.* 2021), who emphasized that EO can serve as a powerful mechanism that promotes an effective environmental environment value system within a firm. This system influences firms' strategies by embedding EGBs toward a corporate innovative green culture and organizational

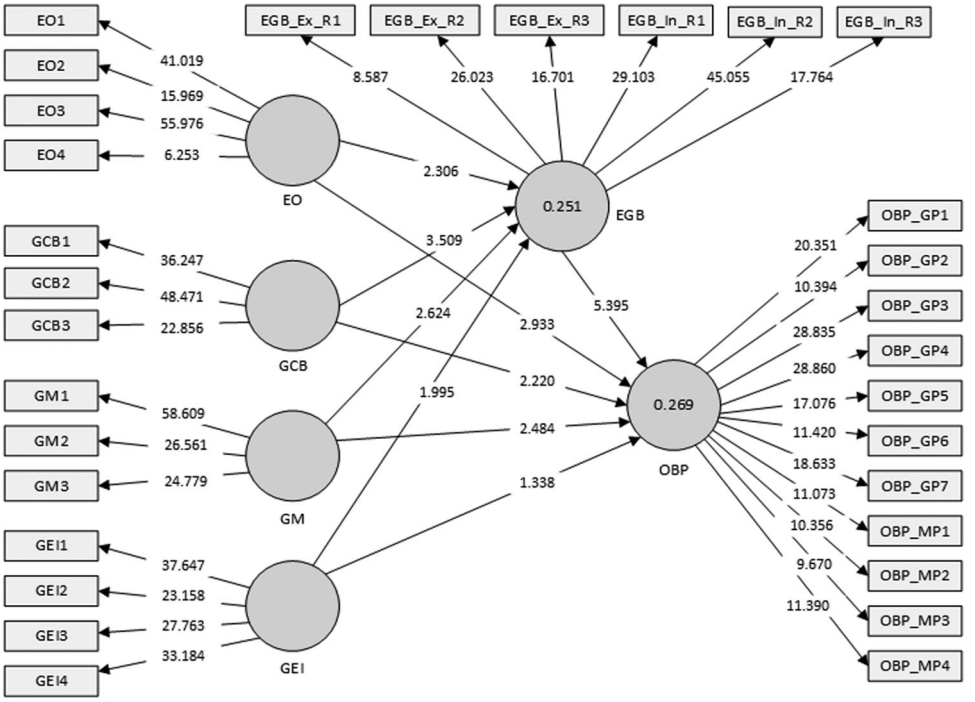


Figure 2. Structural model.

Table 5. Effect sizes ($f^2$ and $Q^2$).

| | Effect Size $f^2$ | | Effect size $Q^2$ | |
|---|---|---|---|---|
| | EGB | OBP | EGB | OBP |
| EGB | | 0.213 | | 0.250 |
| EO | 0.045 | 0.069 | 0.020 | 0.019 |
| GCB | 0.063 | 0.03 | 0.028 | 0.007 |
| GEI | 0.019 | 0.013 | 0.017 | 0.011 |
| GM | 0.04 | 0.037 | 0.007 | 0.004 |

Note: for clarity, $f^2$ measures the effect of exogenous constructs on the endogenous constructs; $Q^2$ explains how well the endogenous constructs within the structural model explain exogenous constructs.

learning. Our study confirms that EO brings to the company green benefits and new business opportunities, such as cost reduction, market position, green reputation, and competitive advantage. We deduce that organizations should be encouraged to work on imparting a clear understanding of environmental issues in support of the advancement of organizational business results. Firms should also encourage employees to exhibit green behaviors, resulting in sustainable business performance improvements.

Our results also exhibit a positive and significant association between GCB and EGB (hypothesis H1b) and between GCB and OBP (hypothesis H2b), in line with previous studies (Dumont, Shen, and Deng 2017; Pinzone *et al.* 2016). GCB aid in commencing change toward green behavioral practices and building a green organizational identity. Therefore, informed by Corporate Environmentalism theory, organizations should enhance employee environmental knowledge and skills that play a crucial role

in improving green behaviors toward eco-initiatives. Firms can accomplish this through training, innovative capacity building, awareness of smart technologies, and clear communications. Governments, too, can play a vital role in the awareness campaigns, offering green training and incentives to drive these campaigns, thus strengthening engagement in the sustainable consumption of resources and encouraging green behaviors.

Similarly, our findings affirm hypotheses posing a positive association between GM and EGB (H1c) and GCB and OBP (H2c), aligned with previous studies (Li *et al.* 2020; Obeidat, Al Bakri, and Elbanna 2020). GM enhancing practices such as intrinsic and extrinsic rewards, regular feedback, and green accountability in performance appraisal systems facilitate firms to promote eco-friendly behaviors (Li *et al.* 2020; Obeidat, Al Bakri, and Elbanna 2020). We are, of course, mindful that employees' attitudes toward green initiatives are contingent on whether their needs or interests are addressed within the employing organization. It follows that motivational green compensation programs help management improve relevant skills, knowledge, and abilities and incentivize employees, such that green action-related initiatives and eco-innovations move from mere ambitions to realized accomplishments.

A significant association was observed between GEI and EGB (hypothesis H1d), affirming previous findings that GEI practices could serve as a dominant force in stimulating EGB's (Dumont, Shen, and Deng 2017; Mehrajunnisa *et al.* 2021).

However, contrary to previous findings (Zibarras and Coan 2015; Obeidat, Al Bakri, and Elbanna 2020), hypothesis H2d cannot be upheld. Our results reveal only an insignificant association between GEI and OBP. By way of potential reasoning, we speculate that the implementation of green involvement practices, such as "green teams," innovative management practices, empowerment, and individual behavioral autonomy, remains an action in an early implementation stage in developing countries. We recognize that environmental concerns are manifold and complex and require collaborative activities and proactive behavioral change. Encouraged by AMO theory, organizations should therefore provide managers and supervisors with green training to develop green leadership, green teams, and realistic green goals and actively seek the involvement of employees in this critical process.

Turning our attention to hypothesis H3, we proposed a significant association between EGB and OBP. In alignment with the literature (Norton *et al.* 2015), our findings support this association, suggesting a positive and significant relationship between the two constructs.

Hypotheses H4a-H4d stipulated that several GHRM practices are expected to display a positive and significant effect on OBP through the mediating influence of EGB. Our results, summarized in Table 6, show that the hypotheses can be upheld, except H4d, suggesting that only EGB's mediating role between GEI and OBP failed to meet our expectations. The reason could be that the implementation of green involvement practices such as green teams, innovative management practices, empowerment, etc. are still in the embryonic stage in emerging countries when compared to western countries where there are higher adopters of collaboration actions and with a more proactive approach to support green business objectives. Environmental concerns are mostly manifold and complex and thus require collaboration actions and proactive behavioral change to accomplish green business excellence. Overall, these results point to a powerful mediation effect of EGB and suggest that EGB serves as an essential driver of OBP, supporting an organization's internal environmental orientation (EO)

Table 6. Results of structural model.

| Direct/Indirect Effect | Std Beta | Std Error | *t*-value | *p*-value | 2.5% CILL | 97.5% CIUL | Decision |
|---|---|---|---|---|---|---|---|
| H1a EO → EGB | 0.206 | 0.090 | 2.299 | 0.022 | 0.028 | 0.375 | Supported |
| H1b GCB → EGB | 0.263 | 0.076 | 3.473 | 0.001 | 0.118 | 0.409 | Supported |
| H1c GM → EGB | 0.209 | 0.08 | 2.612 | 0.009 | 0.053 | 0.370 | Supported |
| H1d GEI → EGB | 0.130 | 0.064 | 2.026 | 0.043 | −0.006 | 0.253 | Supported |
| H2a EO → OBP | 0.229 | 0.078 | 2.92 | 0.004 | 0.073 | 0.383 | Supported |
| H2b GCB → OBP | 0.163 | 0.072 | 2.273 | 0.023 | 0.021 | 0.310 | Supported |
| H2c GM → OBP | 0.179 | 0.072 | 2.492 | 0.013 | 0.038 | 0.321 | Supported |
| H2d GEI → OBP | −0.095 | 0.07 | 1.354 | 0.176 | −0.236 | 0.041 | Not Supported |
| H3 EGB → OBP | 0.404 | 0.074 | 5.445 | 0.000 | 0.244 | 0.540 | Supported |
| H4a EO → EGB→ OBP | 0.083 | 0.038 | 2.209 | 0.027 | 0.017 | 0.165 | Supported |
| H4b GCB → EGB→ OBP | 0.106 | 0.038 | 2.812 | 0.005 | 0.045 | 0.191 | Supported |
| H4c GM → EGB→ OBP | 0.085 | 0.036 | 2.321 | 0.020 | 0.023 | 0.167 | Supported |
| H4d GEI → EGB→ OBP | 0.053 | 0.030 | 1.773 | 0.076 | 0.001 | 0.119 | Not Supported |

Notes: Bootstrapping based on $n = 5{,}000$ subsamples. Control variables include age, gender, education, firm size, firm type, organizational tenure, and years of work experience.
$^{***}p < 0.001$, $^{**}p < 0.01$, and $^{*}p < 0.05$ (two-tailed test).

and leading to improved performance and competitive advantage. These findings are also broadly in line with the previous literature (Dumont, Shen, and Deng 2017; Li *et al.* 2020; Norton *et al.* 2017; Obeidat, Al Bakri, and Elbanna 2020).

### *5.1. Theoretical implications*

This study makes significant theoretical contributions. Our integrated model draws synergistically on Ability-Motivation-Opportunity, Corporate Environmentalism, and Value Belief Norm theories in an emerging economy context and investigates the employee perspectives in sustainability-focused firms. We develop a theoretical framework that provides a suitable avenue toward improving employee green behavior and the latter's impact on OBP in organizations.

Specifically, we disentangle the consequences of GHRM practices, focusing on in-role and extra-role behaviors. Moreover, by proposing EGB as a mediator, we unravel the relationship between GHRM practices and organizational business outcomes. With its focus on employees and sustainability-endorsing organizations in the United Arab Emirates, the present study contributes to this emerging literature by strengthening this hitherto underdeveloped scholastic arena.

We also note that lessons from corporate environmentalism and VBN theories have mainly remained silent at the strategic management level. We thus advance our theory-informed understanding, elevating the roles played by contextual level factors in the transformation of environmental orientation and green responsible behaviors. Our research findings also have important implications for policymakers, practitioners, and employees.

The study shall provide an insight to the top-level management to recognize and practice the ethical values in environmental orientations by instilling corporate culture and formulate suitable strategies to effectively drive green business outcomes and employee green behaviors at various operations in the firm. The study findings offer managers substantial assistance and support in creating a green culture by promoting green training and green motivation enhancing practices and the behavioral perspective on corporate sustainable green initiatives by providing evidence through research. To this end, we deliver an integrated approach that simultaneously advocates green practices, behaviors, and business outcomes. Managers and employees should be equipped with specialized training workshops or programs to increase environmental awareness and knowledge to actively engage in green behaviors. Also, it is important to motivate staff by initiating rewards, recognition, and performance management systems for going green, stimulating employees' green behaviors, and improvising OBP in firms. In particular, we draw managers' attention to the powerful mediation effect of EGB, as this allows us to create credible evidence in support of actionable GHRM practices and linkages with beneficial organizational outcomes.

At the governmental level, policymakers too will gain insight that endorses further recognition of the value of environmental orientation. The findings shall assist them in making better decisions and formulating strategies to effectively drive green business outcomes and promote EGBs at various operations in the firm in pursuing green goals. The study will also help the government support businesses with guidance on how to map their strategies toward improving green behaviors toward green business outcomes by offering potential tactics by setting awareness campaigns, voluntary measures, and awards to continue, providing competence training, communication, etc.

Our study also provides impetus to socio-economic implications by renewing behaviors of an employee at the workplace, which will ultimately impact their behaviors at home, consumption patterns, lifestyle, etc., driving toward a greener mindset to preserve the environment. Finally, our findings encourage higher educational institutions to embed sustainability within their curricula and offer green practices teaching courses or programs for environmental knowledge and interventions for instilling green behaviors in the future workforce.

## 6. Limitations and future directions

The study has several limitations. Our analysis is constrained by the cross-sectional nature of our data, imposing design limitations to following trends and changes over time. In the absence of longitudinal data, causality interpretations of our findings are merely inferred rather than scientifically proven. We are also mindful that self-reported survey data are analyzed, which are known to suffer from several biases. Although we endeavored to control several biases, we unreservedly acknowledge these constraints. In a similar vein, we recognize that data collection took place in the United Arab Emirates only and, therefore, our results lack generalizability. We thus encourage future researchers to examine how GHRM practices impact organizational performance in other national settings with more salient cultural, institutional, and political differences.

## Disclosure statement

No potential conflict of interest was reported by the authors.

## Supplemental data

Supplemental data for this article can be accessed online at https://doi.org/10.1080/09640568.2022.2074824

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