



Research article

The impact of organizational compliance culture and green culture on environmental behavior: The moderating effect of environmental commitment

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Abstract: In this research, we aim to examine the moderating effect of environmental commitment on the relationships between organizational compliance culture and green culture on environmental behavior, under the theoretical stream of the Resource Based Theory (RBT) of the firm, and the Value-Belief-Norm theory (VBN). The research used a quantitative research approach, with a non-experimental transactional design. The sample consisted of 148 Mexican companies with a corporate value system that has implemented environmental sustainability practices, most of them incorporating the GRI guidelines, the SDGs and the Ten Principles of the UN Global Compact into their strategies, policies, procedures, and initiatives. This study contributes to the literature in the field of environmental sustainability, with a first theoretical PLS-SEM model that studies moderating and control variables, through organizational compliance on environmental behavior. Our proposed PLS model is a complex hierarchical component model that brings together and simultaneously maps a higher-order construct combined with three lower-order constructs, with moderation effects, multi-group analysis and predictive performance assessment. The major research findings are both the positive impacts between the proposed higher-order construct, organizational compliance culture, and green culture, on environmental behavior, and the moderating effect of environmental commitment on the relationship

between green culture and environmental behavior. The insights obtained enhance the understanding of the factors that determine the environmental behavior through organizational compliance culture and green culture, with the moderating effect of environmental commitment, and help senior management in making strategic decisions to align their environmental objectives in compliance with the 2030 agenda in the area of environmental sustainability. This study highlights the need for companies to strengthen the role of environmental commitment to improve the environmental sustainability and it mentions practical implications both for managers of organizations that are responsible for meeting the objectives of sustainable development, specifically in the environmental field, and for policymakers and authorities that guide environmental policies.

Keywords: organizational compliance culture; green culture; environmental behavior; environmental commitment; PLS-SEM

JEL Codes: C30, L22, Q56

1. Introduction

In recent years, environmental problems have increased globally, which can have major consequences for ecosystems, health, agriculture, environmental destruction and deterioration of the environment in which we live; and could impact severe environmental disasters. The challenges are to take action on global warming, ozone layer depletion, ocean acidification, etc. (Sun et al., 2022; An et al., 2021). To this end, various initiatives have taken actions, such as the European Union, which has created the European Climate Change Programme, whose measures aim to reduce the greenhouse gas emissions required by the Kyoto Protocol (European Commission, 2005). In the business context, pro-environmental behavior should be encouraged towards employees, as it is fundamental to contribute to sustainable development, by organizations establishing innovative strategies to face these challenges facing the world (Lee et al., 2023; Yang et al., 2023; Aftab and Veneziani, 2023).

Environmental behavior arises from the values found in the organizational culture, commitment, awareness, and actions taken by individuals and organizations (Varela-Candamio et al., 2018). In recent years, organizational culture has led to an increase in research on numerous sustainability practices and green management as ways of furthering company-based sustainable development. Indeed, Linnenluecke and Griffiths (2010) assert that the principles of sustainability are based on the adoption of organizational culture, which is a strategy aspect that deals with intra-organizational processes where ideas regarding behavior, philosophies, values and principles are shared. Sustainable environmental development is making significant inroads globally as a result of its importance and relevance to the corporate market. For example, hybrid and electric vehicles, emerging green technologies, EcoTech and solar energy are becoming increasingly more important (Piwowar-Sule, 2020; Cho et al., 2013).

Green environmental practices are increasingly considered a central focus point of numerous companies. This may be associated with environmental regulations such as the ISO 14001 international standard, which incorporates Environmental Management System and provides guidance on

environmental care. Recent research has focused on understanding the determinants of pro-environmental behavior, such as sustainable development and organizational behavior (Claessens et al., 2022; Minelgaitė and Liobikienė, 2021). Therefore, environmental behavior is now considered indispensable for the fulfilment of organizational objectives, based on sustainable development (Saleem et al., 2021; Ying et al., 2020), and organizational culture is a strategic part of any organization and should operate in accordance with the changing and challenging environment seen in recent years, thus enabling it to face various organizational problems, particularly those associated with environmental destruction.

It is worth mentioning that, for the third consecutive year, environmental problems have dominated the global risk list, according to the latest Global Risks Report issued by the World Economic Forum (McLennan, 2021). Some scholars associated this primarily with the harmful anthropogenic environmental behavior resulting from a lack of awareness concerning sustainability and the natural environment (Liu et al., 2020; Williams and Cary, 2002), but there are clearly other influences. These developments have led to a growing concern for the natural environment, with some organizations experiencing changes and being forced to adopt environmental strategies, as decision makers become environmentally aware (Wang, 2019). In addition to a wide variety of environmental issues, global warming is one of the most critical problems organizations are facing (Delmas, 2008). For several decades corporations have worked within a fast-paced framework, which is now transitioning into a modern paradigm oriented towards social, economic and environmental sustainability in accordance with the 2030 Agenda for Sustainable Development and the 17 objectives (SDG) established in 2015 by the United Nations (UN).

Alongside the changes in corporate environmental strategies and regulations, there have also been behavioral changes in customers leading to preferences for more environmentally friendly products (Kotler, 2011). To address the strategies and emerging management of the 21st century will require behavioral and structural changes related to organizational culture, consumer behavior and commitment, and government institutions that favor sustainable environmental development. Dobson (2007) considers that behavior is driven by embedded structures such as environmental behavior and commitment. A key aspect to understand internal environmental factors relates to how values, attitudes and commitment align with the company's environmental practices (Luque-Vílchez et al., 2019).

These need to be changed first since the principles of sustainability lead to the assimilation of an organizational culture (Linnenluecke and Griffiths, 2010). Regardless of the relevance of organizational culture, there is currently little research on this topic, and an urgent need for this type of research, as it requires an organizational culture that facilitates change towards sustainability (Fietz and Günther, 2021). For their part, Kot et al. (2019) consider that the inclusion of new attitudinal environmental sustainability constructs, including models with moderating effects, should be further explored, because this can help us with more arguments to explain causes and effects, and to know which constructs allow us to strengthen certain structural relationships. Organizations are increasingly paying more attention to various environmental initiatives in order to see the results reflected in environmental performance, but more research is needed to help understand the determinants of environmental performance (Al-Swidi et al., 2021).

The importance and the need to lead companies to commit themselves to care for the natural environment has motivated us to pose the following research questions: (1) What is the extent to which

the culture of organizational compliance and the green culture impact environmental behavior? (2) Does environmental commitment moderate the relationship between organizational compliance culture and environmental behavior? (3) Does environmental commitment moderate the relationship between green culture and environmental behavior? We adopted a transverse/cross-sectional design and apply structural equation modeling (PLS-SEM) as the analytical method, for a sample of 184 Mexican companies that provide sustainability reports following the Global Reporting Initiative (GRI) and other guidelines and have implemented internal sustainability practices. The study of organizational culture in organizational behavior and commitment is a necessary topic in research because it is crucial for improving the organization's strategic competencies (Mirhadian et al., 2023).

Our purpose of this research is to examine the moderating effect of environmental commitment on the relationships between organizational compliance culture and green culture with environmental behavior. For this purpose, this research contributes to extend the literature in the following ways. First, it focuses on providing a predictive model for companies to have a better understanding of the need to reorient organizational culture towards a green culture, which can provide an explanation of environmental behavior through environmental commitment as a valuable resource. From Hart's (1995) perspective, organizational resources play an important role in the creation of environmental strategies, with an aim for environmental sustainability. In this case, from our conception, green culture is a strategic organizational resource that impacts on corporate environmental behavior, where sustainability is increasingly important for companies, which have taken environmental and social measures and challenges; highlighting that their current economic model must shift from economic to social and environmental priorities in order to be sustainable (Appiah et al., 2023).

Second, we extend previous research on environmental behavior by explicitly examining moderating constructs. In doing so, the study aligns with Karatepe et al. (2022) who propose a research model in which environmental commitment and environmental behavior are related, under the guideline of the organization's commitment to environmental preservation and protection. However, recent research has added to the study of environmental behavior and green culture (Appiah et al., 2023, Mirahsani et al., 2023) through a moderating construct of environmental commitment.

In addition, our study makes important theoretical and practical contributions. From a theoretical point of view, organizational compliance culture and green culture have a positive impact on environmental behavior. On the other hand, environmental commitment is a moderating construct between green culture and environmental behavior. At the practical level, senior managers can make decisions based on empirical and scientific evidence to stimulate, strengthen and ensure environmentally sustainable practices. That is, when companies have a green culture and are committed to the environment, they are likely to exhibit positive environmental behavior.

This study is structured in five sections. The first section begins with an introduction to the research problem. The second section develops the theoretical framework and hypotheses. The research method is summarized in section three, whereas the results of the analysis are found in section four. Finally, the discussion, conclusions, theoretical and practical contributions as well as suggestions for future research and limitations are in section five.

2. Theoretical framework and hypotheses

2.1. Resource-Based Theory (RBT)

The research topic is explained through two theoretical perspectives that can complement each other. The Resource-Based Theory (RBT), associated with the Natural-Resource-Based View (NRBV) of the Firm (Barney, 1986; Barney et al., 2011; Grant, 1991; Hart, 1995; Wernerfelt, 1995), and Value-Belief-Norm Theory (VBN) (Stern, 2000). The RBT is essential for companies to focus on developing intangible resources such as organizational compliance culture, green culture and environmental commitment that might be considered valuable resources for organizations when facing the diversity of environmental challenges in the organizational environment. The RBT is considered as a set of heterogeneous, uncommon, and valuable resources with underlying capabilities (Barney, 1991), which nowadays should be configured as inputs towards environmental sustainability, as organizational culture is flexible to the demands of the business environment.

The company's strategic resources have become the valuable assets that can lead to environmental sustainability; and green culture can be considered one of the important resources that lead to environmental performance, and competitive advantage. This type of culture should be oriented towards caring for the environment through values, and the redirection of awareness of caring for the strategic resources that surround the environment of the organizations in which they operate. According to NRBV propositions, organizational resources play an important role in the establishment of environmental strategies, as these organizational resources create corporate environmental strategies, which could foster environmental commitment, and this in turn, could be reflected in environmental behavior (Hart, 1995; Appiah et al., 2023). Resource theory is linked to environmental sustainability at the business level because the environment provides important resources for processes, such as raw materials, water, energy, and in general all resources needed for business operations (Sendawula et al., 2021).

2.2. Value-Belief-Norm Theory (VBN)

In addition, the VBN theory claims that beliefs regarding environmental care are driven by values that allow the assimilation of environmental behavior. This theory explains environmental aspects, according to values, and the intention of norms potentiates environmental behaviors, which are actions taken to minimize the use of natural resources, and reduce adverse effects (Al-Mamun et al., 2022). Therefore, pro-environmental, or ecological, behaviors are related to values, beliefs, and norms, which are specific to a culture (Hiratsuk et al., 2018). Under this approach, organizational compliance culture, and green culture can lead to a change in environmental behavior with the indirect effect of environmental commitment, which can be reflected when organizations make rational use of electrical energy in their equipment and machinery, have a recycling process, separate hazardous waste, adhere to environmental laws and regulations, and have an environmental program that reflects favorable results as part of environmental behavior, and a culture with a vision of environmental sustainability.

2.3. *Organizational compliance culture*

Organizational compliance culture emphasizes compliance with organizational policies and behavioral standards (Interligi, 2010). The concept of compliance refers to the degree to which individuals adhere to the rules, norms, policies, procedures, guidelines, and any regulations established by an organization. Since culture is the central axis of organizational management, it provides a sense of identity and determines the behavior of companies toward the natural environment. Management and organization occur within an organizational culture. Organizational culture is often complex and difficult to understand, especially in organizations where cultural problems are ignored. These problems include ideologies, feelings and reactions when they act in accordance with their ideas, concepts and beliefs which, ultimately, are part of one's culture (Isensee et al., 2020; Alvesson, 2013).

According to Wang (2019), organizational culture is a shared system of beliefs, values, postulates and principles that shape organizational commitment. However, the culture of organizational compliance is a culture focused on ethics, values, the behavior of the members of the organization, establishing codes of conduct, policies, procedures and process monitoring, with a main focus on compliance that involves the management of risk assumption (Ferrell et al., 2019). From the perspective of this research, organizational compliance culture has the following components: Compliance-based organizational culture, Values-Based Organizational Culture, Organizational Subgroup Compliance, Aloofness, Pro-Social Rule Breaking, Manager Self-Management and Manager-Employee Relationships (Ferrell et al., 2019; Dahling et al., 2012; Weaver et al., 1999; Morrison, 2006, Brown et al., 2005; Hu et al., 2012).

2.4. *Green culture*

The growing importance of sustainability in business as well as the environmental awareness of customers have forced multinational companies to adopt green processes that can be promoted if a green approach is embraced. In this manner, managers can promote environmental awareness within the company and thus contribute to counteracting environmental problems (Sharma et al., 2021). This type of culture reflects a paradigm shift of the organization in favor of environmental sustainability, which in turn emphasizes the behavior and development of ecological skills as part of green culture (Yong et al., 2020). Although some companies are adopting green strategies and subjecting themselves to environmental regulations, there is a need for further research into organizational cultures at the forefront of sustainable organizations (Crane, 2000). Therefore, green culture transcends environmental sustainability in companies which form part of environmental strategy (Wang, 2019) and is defined as the shared beliefs, values, practices of the organization's members to protect the external environment in the conservation and protection of the environment (Liu and Lin, 2020; Norton et al., 2015).

2.5. *Environmental commitment*

The need for organizations to protect the environment can be seen as a factor in increasing organizational commitment by implementing environmental policies, practices, strategies, and initiatives. Environmental commitment is defined as the psychological attachment and long-term orientation toward

protection of the natural environment (Jody et al., 2009). Commitment refers to the emotional connection towards the environment and green participation on behalf of the employees within a particular organization. These factors are associated with the degree of employee acceptance, the fulfilment of objectives, culture and the desire to work and remain in the organization (Porter et al., 1974). Environmental commitment is the search for environmental sustainability by committing to waste reduction, resource conservation, the use of new ecological products, and support for organizational and governmental strategies focused on caring for the environment (Yu et al., 2019). Our concept of environmental commitment in this research revolves around respect and awareness, as well as the affective and normative attachment towards the care and protection of the environment in business. In practice, environmental marketing strategies are thought to increase environmental commitment in companies and are, therefore, intangible ecological assets that should be invested in and promoted such as environmental commitment for the benefit of the organization (Chen and Chang, 2013).

2.6. Environmental behavior

Environmental behavior, or green behavior, assumes a series of activities that are based on environmental awareness efforts, to eliminate environmental risks, and to protect the environment, by managing energy consumption, recycling materials, reducing polluting waste, etc. (Ahmad et al., 2023; Ansari et al., 2021). Organizational behavior studies the impact that individuals, groups, and organizational structures have on an organization and its behaviors (Kondalkar, 2007). One of the primary challenges we face today is a better understanding of environmental behavior in a business and individual context for the benefit of the environment (Gifford, 2014). Environmental behavior is defined as actions taken to reduce environmental impact, minimize the use of natural resources, energy consumption and the emission of toxic substances (Wong et al., 2018; Kollmuss and Agyeman, 2002), and to conserve natural resources (Tapia-Fonllem et al., 2013).

Since environmental problems today are increasingly global, they have become a crucial issue for organizations (Adan et al., 2021; Wong et al., 2018). Environmental behavior can be observed when individuals and organizations are characterized by their average carbon footprint. This concept is also synonymous with sustainable behavior and seeks to protect the environment through certain actions and pro-ecological behavior. Finally, when made aware of their carbon footprint, their reaction may reflect some guilt (Mallett et al., 2013).

2.7. The impact of organizational compliance culture on environmental behavior

Dynamic organizations seek new ways to direct employee behavior, and attitudes are regulated by organizational culture, which serves as a model through norms and rules that convey cultural principles, values and environmental management initiatives, and the implementation of environmental practices (Mendis and Welmilla, 2021; Abbas and Dogan, 2022; Fietz and Günther, 2021). In this sense, organizational culture is made up of the assumptions, values, convictions, and beliefs that govern the organization, and which must be accepted by the members of the organization, as a way of thinking and behaving, since values are a fundamental part of organizational values that relate to behavior (Schein, 1985; Nemcsicsné, 2007).

An organizational culture with environmental protection objectives is identified with a level of environmental awareness as part of environmental behavior, which facilitates the fulfilment of these environmental objectives because environmental problems require cultural and attitudinal changes of an organizational culture, where its members share environmental values and manifest environmentally friendly behavior as part of the manifestation of environmental awareness of the organizational culture (Nemcsicsné, 2007). Technological advancement and industrial development in recent years have brought about a number of environmental problems, which have deteriorated the environment, and organizational culture plays an important role in environmental outcomes (Bakhsh et al., 2018). On these arguments, the following hypothesis is proposed:

H1. *Organizational compliance culture is positively related to environmental behavior.*

2.8. *The impact of green culture on environmental behavior*

Green culture promotes environmental behaviors by encouraging various environmental practices, such as using recyclable and biodegradable materials in processes, as well as reusable materials, and being aware of climate change issues (Appiah et al., 2023). Wang (2019) argues that green organizational culture can lead to a cultural shift in environmental sustainability thinking, and this could be reflected in environmental behavior. Environmental problems such as global warming, air pollution, groundwater decline, depletion of natural resources and cultural change are often associated with human behavior (Sanyal and Pal, 2017). Post and Altma (1994) argue that to confront these environmental challenges, organizations need to transform their organizational structure and culture, since organizational culture is a causal agent that determines human behavior and shapes business and environmental interactions through shared norms and values. For example, when an individual joins an organization, they bring individual behavioral patterns with them that change gradually until they adopt the culture that prevails in their workplace. This is a result of regularly sharing values, customs, traditions, standards, company policies and other constituent elements. This implies that organizational behavior is transformed or transferred through symbols, language, beliefs, visions, ideologies and myths of organizational culture (Pettigrew, 1979).

On the other hand, environmentally responsible companies tend to be more accepted in the market (Yang-Spencer et al., 2013); therefore, the organizational culture needs to be aimed at this kind of practices. A recent empirical study found that culture positively impacts behavior because rule-based compliance culture is effective in directing employee behavior in a specific direction (Solomon and Brown, 2020). Another study examined the influence of culture on environmental management based on the Cameron and Quinn Model of Culture Typology (Cameron and Quinn, 2006), and the results concluded adhocracy culture has a positive impact on the management of environmental sustainability (Sugita and Takahashi, 2013). Environmental values are central to pro-environmental behavior, through beliefs, and influence norms that lead to environmental behavior (Rahman and Reynolds, 2016; Stern, 2000; Reser and Bentrupperbäumer, 2005). Therefore, hypothesis H2 is proposed.

H2. *Green culture is positively related to environmental behavior.*

2.9. *The moderating role of environmental commitment on the relationships between organizational compliance culture and green culture with the environmental behavior*

Environmental commitment is the degree to which organizations exercise practices to minimize, safeguard and protect the natural environment, through exercising environmental sustainability actions, methods, principles, and standards (Sendawula et al., 2021). When business organizations are environmentally committed, they take on environmental sustainability goals, business values, and demonstrate positive compliance with them by engaging in such environmental practices (Liu et al., 2018). Furthermore, environmentally committed organizations are compelled to undertake environmental practices as a necessity, and realize that they can have associated monetary benefits (Tilleman, 2012; Benjamin and David, 2012). These environmental practices are part of the green culture that involves adherence to norms, values and responsible behaviors towards the natural environment (Asmui et al., 2016). Environmental behaviors are continuously advanced if the organization promotes such behaviors, and environmental protection as a priority in the green culture policy and vision (Shahriari et al., 2023). Recent research has shown that green organizational culture has a positive relationship with commitment (Shahriari et al., 2023; Mirhadian et al., 2023).

Thus, there is a relationship between the cultural dimension of orientation and the emotional dimension of commitment. Also, employees' green behaviors will advance continually if green behaviors are taught to them in an organization and environmental protection is a priority in that organization's policy. Concern for the environment is a global phenomenon that affects all organizations and can contribute to environmental sustainability. Green culture represents a challenge for companies and can be a determining environmental strategy, since environmental sustainability depends on organizational commitment and culture (Isensee et al., 2020; Bayard and Jolly, 2007; Brechin and Kempet, 1994). Sharma et al. (2021) examined the relationship between adoption of green culture, innovation, and green performance in achieving sustainability through commitment. Their results indicate the most relevant factor is the adaptability of green culture and the mediating role of organizational commitment, which assist business managers in developing a green culture through environmental awareness. Firms' environmental commitment is a moderating construct in the relationship between institutional pressures and environmental management practices (Wang et al., 2017). Recent research shows empirical evidence that environmental commitment predicts sustainable environmental practices (Sendawula et al., 2021, Yu et al., 2019; Castro-Casal et al., 2019), as increasing commitment increases the likelihood of green behavior (Cop et al., 2020).

When designing new products or developing new processes, environmental management practices can reduce negative impacts on the natural environment (Leonidou et al., 2013; Yu et al., 2017). In addition, companies are willing to support environmental conservation through environmental behavior and commitment, as well as within the framework organizational culture (Dierking et al., 2004; Lee, 2011), which has an impact on pro-environmental behavior (Sharma et al., 2021; Marsina et al., 2019), and gives a sense of identity coupled with organizational commitment and the goals that shape attitudes and behaviors (Tarique et al., 2015; Singh, 2008). Finally, organizational culture through sociocultural values influences the extent to which companies make use of natural resources (Park et al., 2007). This implies, therefore, that organizational culture is essential in

responding to environmental issues that influence environmental behavior and commitment (Ringov and Zollo, 2007; McCarty and Shrum, 2001).

Socially responsible companies with environmental practices will perform better if they develop valuable intangible resources and commit to such practices (Branco and Rodrigues, 2008). Thus, an organization is considered to be committed to the environment when it uses its intangible resources and capabilities to protect it and opens new ways to develop environmental behavior (Mohamed et al., 2021). Moreover, Aragón-Correa et al. (2004) argue that environmental commitment is associated with executives in charge of environmental issues, who have the task of promoting it as a practical strategy for companies. Thus, people can be environmentally engaged when they feel psychologically linked to the natural environment around them (Yusliza et al., 2020; Rahman and Reynolds, 2016).

Therefore, organizations should promote their cultural norms, values, principles, normativities, and strategic environmental vision through organizational culture to foster environmental commitment and strengthen environmental behavior, as sustainable strategic resources that give value to the organization according to the resource theory, and Value-Belief-Norm Theory (VBN), as belief-norms potentiate intention towards pro-environmental behaviors, which occur as a moral obligation to undertake environmental actions and adverse effects on nature and resource use (Mirhadian et al., 2023; Wynveen et al., 2015). Norms are activated if people feel responsible for environmental problems, supported by a cultural environmental strategic vision and biospheric-altruistic values (Riepe et al., 2021; Steg and Nordlund, 2019). Based on this theoretical discussion, the following moderation hypotheses are proposed:

H3. *Environmental commitment moderates the relationship between organizational compliance culture and environmental behavior.*

H4. *Environmental commitment moderates the relationship between green culture and environmental behavior.*

Figure 1 illustrates the theoretical links associated with this research model.

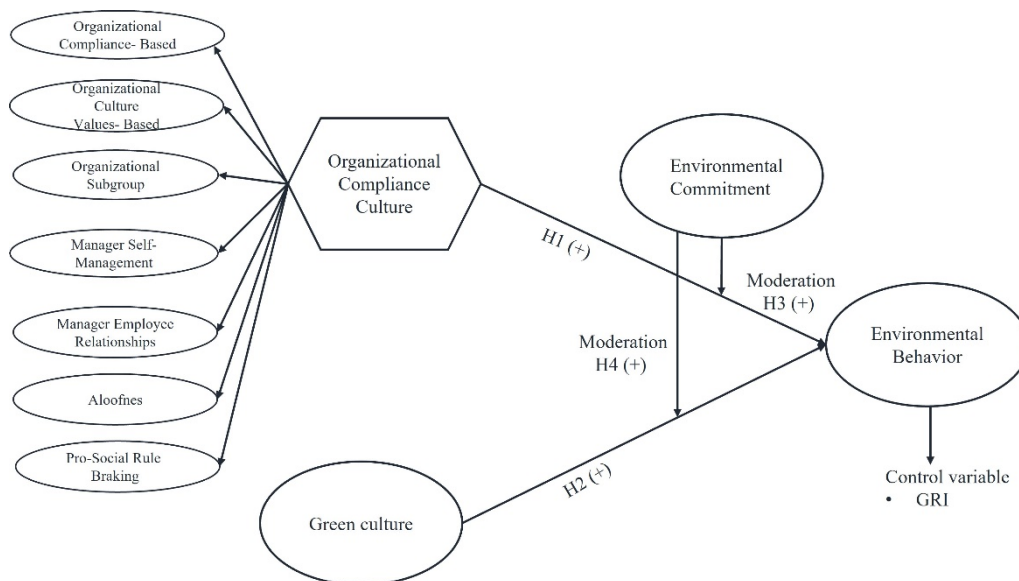


Figure 1. Research model.

3. Materials and methods

3.1. Research design

In this research, from a positivist perspective, we use a quantitative research approach with a cross-sectional design. As for the type of research, an explicative-confirmatory level was chosen, as it is recommended when testing theories, as well as being predictive, since it is an innovative procedure in PLS-SEM that allows to evaluate and perform out-of-sample predictions with composite-based models (Hair et al., 2020). The underlying causal-predictive logic, referred to as explaining and predicting theories, implies an understanding of the underlying causes and prediction, as well as a description of theoretical constructs and their relationships (Gregor, 2006; Hair et al., 2022).

3.2. Sample selection

For this research, we decided to carry out the study in Mexico, as it is one of the best positioned emerging economies in Latin America, it is part of the Treaty between Mexico, the United States and Canada (T-MEC) and one of its investments is oriented towards the manufacture of electric cars. The T-MEC is an updated version of the North American Free Trade Agreement (NAFTA), which was implemented in 1994 and changed the economies of the three countries by eliminating export tariffs. The T-MEC entered the force on 1 July 2020. The sample size was 148 Mexican companies that engage in environmental sustainability practices at national and international level in the Global Reporting Initiative (GRI) and other guidelines. Sampling was random, and data collection was carried out using an online survey platform, and data were collected in the first quarter of 2021. The anonymity of the respondents was guaranteed for them to answer more truthfully.

In order to determine the size and appropriateness of the sample, GPower (Faul et al., 2007, 2009), an analysis program for statistical tests commonly used in social and behavioral research was applied, according to which 107 observations would be needed, given two predictors, a significance level of 5%, a medium effect size of 0.15 and a statistical power of 80%. The sectors contributing to the survey results were: telecommunications (2%), financial services (3%), automotive (23%), construction (2%), tourism (3%), food and beverages (36%), aviation (1%), chemicals (12%), logistics (6%), forestry and paper (2%), conglomerates (3%), commercial services (4%) and health products (3%). Table 1 depicts the profile of the sample in greater detail.

Table 1. Details of sample.

<i>Company size</i>	<i>Environmental certification</i>	<i>Job Title</i>
Medium = 92 (62.2%)	Yes = 121 (81.8%)	Area director = 51 (34.5%)
Large = 56 (37.8%)	No = 27 (18.2%)	Head of department = 71 (48.0%)
		Supervisor = 26 (17.5%)
<i>Gender</i>	<i>Age</i>	<i>Firms GRI</i>
Male = 75 (50.7%)	< 30 years = 7 (4.7 %)	63 (43%) = GRI
Female = 73 (49.3%)	31–40 years = 58 (39.2 %)	85 (57%) = No GRI
	41–50 years = 46 (31.1 %)	
	51–60 years = 37 (25.0 %)	

3.3. Measures

The measurement scales were constructed taking into account the conceptualizations and theoretical considerations of the authors underpinning them, as well as considering the procedural and statistical recommendations of Podsakoff et al. (2003) to avoid response bias in behavioral research. In addition, Podsakoff et al. (2003) propose two ways to control bias: (1) Procedural technique and (2) statistical process control which includes many different procedural and statistical techniques that can be used to control method biases. Organizational compliance culture was based on the work of several scholars (Ferrell et al., 2019; Dahling et al., 2012; Weaver et al., 1999; Morrison, 2006, Brown et al., 2005; Hu et al., 2012). This construct consists of the following subdimensions: compliance-based organizational culture, Values-Based Organizational Culture, Organizational Subgroup Compliance, Aloofness, Pro-Social Rule Breaking, Manager Self-Management and Manager-Employee Relationships. Scale measurement was on Likert scales with different response categories to avoid response bias (Hair et al., 2019a). Green culture was based on Sharma et al. (2021) and Wang (2019), and Environmental behavior was devised from Bissing-Olson et al. (2016) and Tapia-Fonllem et al. (2013). Finally, the environmental commitment scale was derived from Yu et al. (2019) and Chen and Chang (2013). The scale items are shown in Appendix A.

3.4. Common method bias

Common-method variance refers to the variance attributable to the measurement method rather than the construct of interest. Podsakoff et al. (2003, 2012) recommend ways to minimize this type of variance. They propose two ways to control it: (a) procedural design methodology and (b) statistical quality and process control. During the procedural design phase, we reviewed the measurement scale regarding the type of response scale such as: the clear wording of the items, the avoidance of ambiguities and the general instructions for the respondents. Regarding the statistical remedies, this study is consistent with the PLS-SEM context and relies on the Kock (2015) criterion that recommends VIF scores below 3.3. The current study exhibited VIF scores below this threshold, so this type of bias is not meaningful in this study.

3.5. Data analysis

The data analysis technique was Partial Least Squares Structural Equation Modeling (PLS-SEM) since the primary objective is prediction (Hair et al., 2022). PLS-SEM was also chosen since the theoretical model is complex and robust, proposes a higher-order construct and higher statistical power is ensured. Another justification for choosing PLS-SEM lies in the fact that it combines more advanced methods and complex bootstrapping routines compared to CB-SEM (Hair et al., 2022). The statistical software SmartPLS®3 (Ringle et al., 2015) was used. The measurement model was evaluated first for reliability and validity. Its statistical characteristics are the following: (1) internal consistency (Cronbach's Alpha and composite reliability), (2) convergent validity (reliability of the indicator with the average variance extracted (AVE), (3) discriminant validity (Fornell and Larcker, 1981) criterion and heterotrait-heteromethod (HTMT) and bootstrapping based on n=10,000 subsamples. The

structural model was evaluated second to assess collinearity, statistical significance and relevance of structural relationships and out-of-sample prediction ($PLS_{predict}$). The coefficient of determination R^2 , the effect size f^2 , the predictive relevance of the model (Q^2) and the relevant prediction errors were examined. The final assessment included the potential moderating effects, control variables and a multigroup analysis.

4. Results

4.1. Measurement model assessment

For the purpose of this study, organizational compliance culture was operationalized as mode A reflective-reflective second order composite (or higher order construct, HOC) (Sarstedt et al., 2019) and also captures the subdimensions corresponding to the lower order constructs (LOCs) (Hair et al., 2022). The LOCs are: organizational compliance culture, Values-Based Organizational Culture, Organizational Subgroup Compliance, Aloofness, Pro-Social Rule Breaking, Manager Self-Management, and Manager-Employee Relationships. The initial analysis focused on the lower-order constructs by ensuring the loadings of the indicators were above the recommended threshold (0.708). Next the reliability and convergent validity (AVE) were examined (Hair et al., 2019b). Discriminant validity for the lower-order composites was determined using two criteria: Fornell-Larcker and Heterotrait-Monotrait Ratio (HTMT). Tables 2 and 3 show these results and all recommended criteria are met.

The higher-order construct model was then evaluated based on the scores of first-order latent variables. Table 4 illustrates the composite reliability indices (composite reliability) and convergent validity (AVE) of the higher-order reflective construct, in accordance with the established parameters (Sarstedt et al., 2019). Aloofness and pro-social rule breaking were below the recommended thresholds for the higher-order constructs and were not included in further analysis.

Table 2. Reliability and convergent validity: Organizational compliance culture.

Construct	Loading	Cronbach's alpha	Composite reliability	AVE
<i>Organizational Culture Compliance-Based</i>		0.879	0.916	0.735
CB1	0.899			
CB2	0.917			
CB3	0.722			
CB4	0.886			
<i>Organizational Culture Values-Based</i>		0.877	0.916	0.732
VB1	0.762			
VB2	0.897			
VB3	0.864			
VB4	0.892			
<i>Organizational Subgroup Compliance Scale</i>		0.905	0.927	0.680
SCI	0.834			
SC2	0.877			
SC3	0.891			
SC4	0.775			
SC5	0.870			
SC6	0.684			
<i>Aloofness</i>		0.874	0.889	0.667
AL1	0.827			
AL2	0.745			
AL3	0.820			
AL4	0.869			
<i>Pro-Social Rule Breaking</i>		0.882	0.897	0.686
RB1	0.779			
RB2	0.749			
RB3	0.854			
RB4	0.875			
RB5	0.913			
RB6	0.853			
<i>Manager Self-Management</i>		0.882	0.912	0.680
MS1	0.669			
MS2	0.888			
MS3	0.808			
MS4	0.918			
MS5	0.865			
<i>Manager Employee Relationships</i>		0.893	0.922	0.702
ER1	0.838			
ER2	0.824			
ER3	0.896			
ER4	0.826			
ER5	0.840			

Table 3. Reliability and convergent validity: Environmental commitment, green culture and environmental behavior (first-order mode A).

Construct	Loading	Cronbach's Alpha	Composite reliability	AVE
<i>Green culture</i>		0.889	0.885	0.627
GRE1	0.868			
GRE2	0.802			
GRE3	0.871			
GRE4	0.858			
GRE5	0.868			
<i>Environmental Commitment</i>		0.906	0.926	0.729
COM1	0.789			
COM2	0.896			
COM3	0.838			
COM4	0.842			
COM5	0.900			
<i>Environmental Behavior</i>		0.893	0.921	0.701
ENV1	0.878			
ENV2	0.776			
ENV3	0.682			
ENV4	0.858			
ENV5	0.738			

Table 4. Organizational compliance culture (HOC).

Construct	Loading	Cronbach's Alpha	Composite Reliability	AVE
<i>Organizational Compliance Culture</i>		0.875	0.885	0.627
Organizational Culture Compliance-Based	0.875			
Organizational Culture Values-Based	0.843			
Organizational Subgroup Compliance Scale	0.898			
Manager Self-Management	0.915			
Manager Employee Relationships	0.843			

Discriminant validity was calculated for green culture, environmental behavior and environmental commitment. The recommended guidelines for constructs that are conceptually similar can have a Heterotrait-Monotrait Ratio (HTMT) < 0.90. When constructs are conceptually different, a HTMT ratio of < 0.85 is recommended (Hair et al., 2019c, 2020). Results are shown in Tables 5 and 6, by means of the HTMT correlations, and HTMT confidence intervals.

Table 5. Discriminant validity: Heterotrait-Monotrait Ratio (HTMT) correlations.

Constructs	Environmental Behavior (EB)	Environmental Commitment (EC)	Green Culture (GC)
Environmental Commitment (EC)	0.887		
Green Culture (GC)	0.873	0.891	
Organizational Compliance Culture (OC)	0.825	0.723	0.727

Table 6. Discriminant validity: Heterotrait-Monotrait Ratio (HTMT) Bias-corrected confidence intervals.

Relationship	Original Sample	Bias	5.0%	95.0%
EC →EB	0.887	0.003	0.833	0.926
GC →EC	0.891	0.001	0.840	0.933
GC →EB	0.873	0.000	0.816	0.923
OC →EC	0.723	0.002	0.621	0.817
OC →EB	0.825	0.001	0.749	0.894
OC →GC	0.727	0.002	0.605	0.815

4.2. Assessment of structural model

A bootstrapping process based on $n = 10,000$ subsamples was executed. The structural relationships of the model are statistically significant: $OC \Rightarrow EB$ ($\beta = 0.406$, $p = 0.000$, t -value = 5.366); $GC \Rightarrow EB$ ($\beta = 0.524$, $p = 0.000$, t -value = 7.424). With regard to $R^2 = 0.728$, this value is considered moderate to high. These findings indicate organizational compliance culture and green culture explain 72.8% of variance in environmental behavior. Therefore, hypotheses H1 and H2 are accepted. We also evaluated the effect size of f^2 , which measures the strength or effect of the exogenous (independent) variable in predicting the endogenous (dependent) variable, the result of which is $f^2 = 0.327$. In terms of the Stone-Geisser's Q^2 value ($Q^2 = 0.49$), this value satisfies the established threshold of $Q^2 > 0$, providing in-sample evidence of the predictive relevance of exogenous constructs in environmental behavior (Hair et al., 2019b; Chin, 1998). Figure 2 provides an estimation of the model with direct effects.

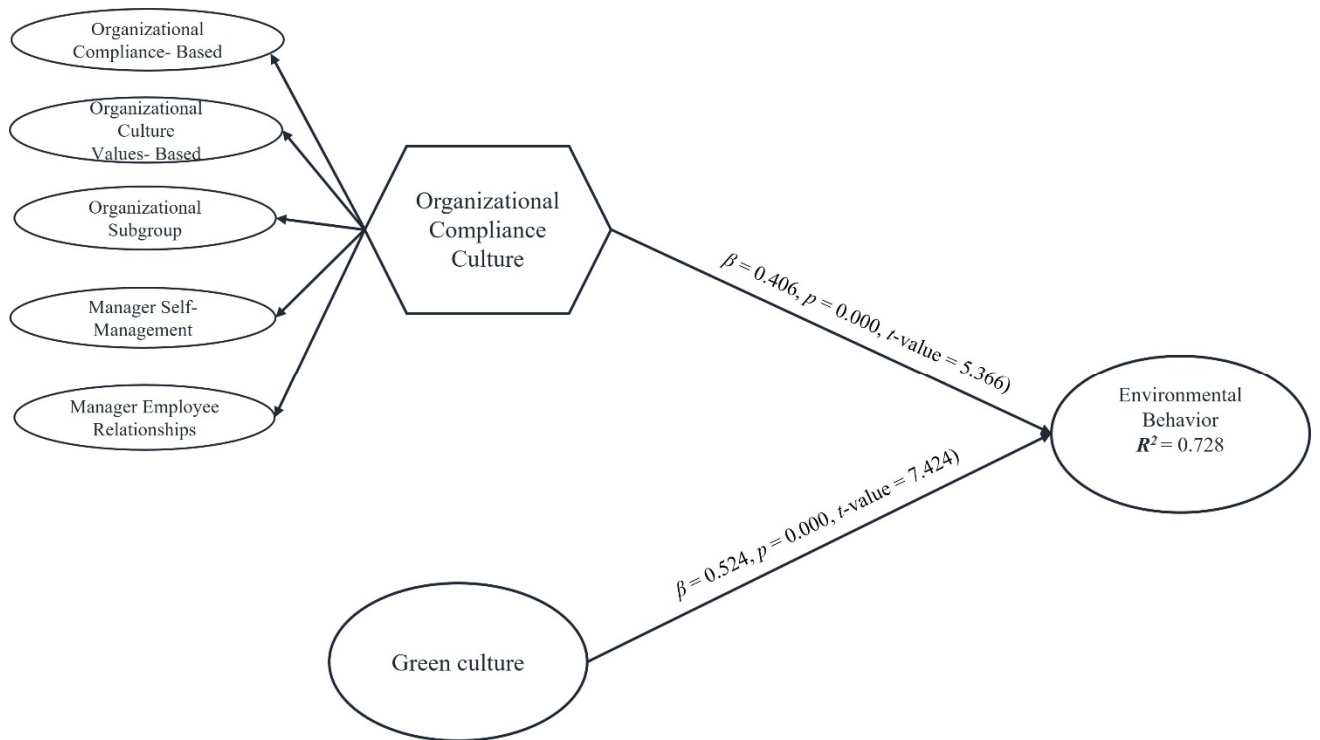


Figure 2. Assessment of the structural model.

4.3. Moderation

Moderation occurs when the effect of a latent exogenous variable on an endogenous variable depends on the values of a third variable (Hair et al., 2019b). Results from assessing the proposed moderating effect of Environmental Commitment were as follows: Moderating effect 1 (OC*EC) was not significant ($\beta = -0.079$, $t\text{-value} = 0.934$, $p = 0.177$). In contrast, moderating effect 2 (GC*EC) was significant ($\beta = 0.174$, $t\text{-value} = 1.869$, $p = 0.037$). Given these findings, Hypothesis 3 (H3) was not supported, whereas Hypothesis 4 (H4) was accepted. Figure 3 and Table 7 show the specifics of the moderation results.

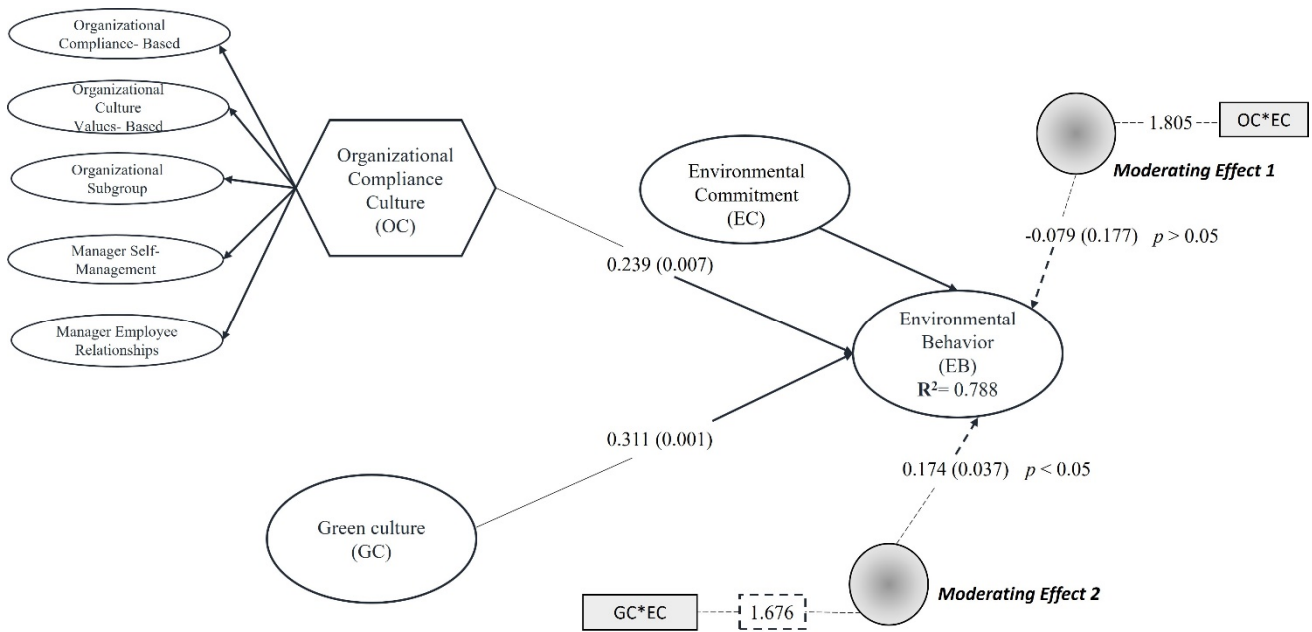


Figure 3. Interaction effect and significance.

Table 7. Path Coefficients: Interaction effect and significance.

Path coefficients	original sample	Confidence Intervals Bias Corrected				
		Bias	5.0%	95.0%	<i>t</i> -value	<i>p</i> -value
EC →EB	0.510	0.009	0.346	0.684	4.910	0.000
GC →EB	0.311	-0.010	0.149	0.470	3.178	0.001
Moderating Effect1 →EB	-0.079	0.003	-0.234	0.043	0.934	0.177 (H3)
Moderating Effect 2 →EB	0.174	0.008	0.034	0.349	2.498	0.035 (H4)
OC →EB	0.239	0.003	0.049	0.376	2.424	0.008

Figure 4 displays the simple slope analysis representing the moderation of the relationships between green culture and environmental behavior. As noted previously, the size of the moderating effect for this relationship was 0.174 ($p = 0.037$), thereby positively affecting environmental behavior. The simple effect of green culture on environmental behavior was 0.311 representing a high level of environmental commitment. The interpretation is as follows: in cases of strong environmental commitment, as the average deviation increases, the relationship between green culture and environmental behavior will also increase, in accordance with the interaction term ($0.311 + 0.174 = 0.485$). This same is true *vice-versa*.

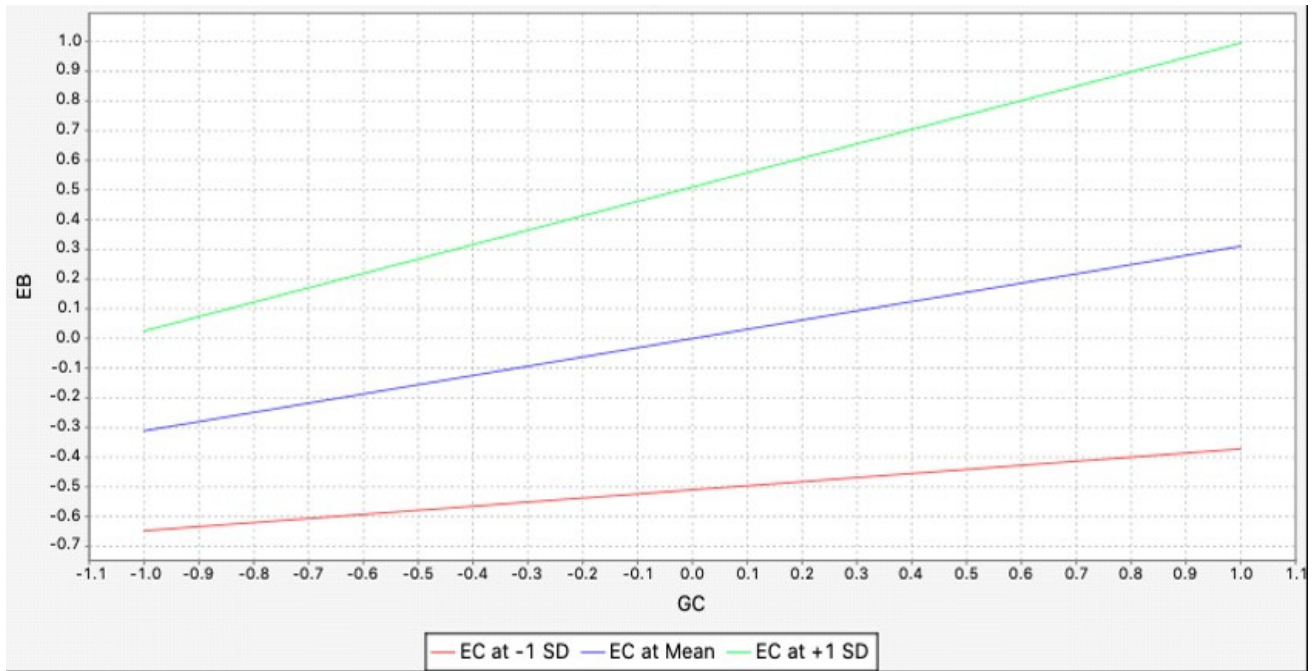


Figure 4. Moderating effect.

4.4. Multigroup analysis

Finally, multigroup analysis (García-Machado et al., 2020) was used to test if there was a moderating influence on the relations regarding companies that issue sustainability reports compared to those companies that only employ sustainability practices. First, the Measurement Invariance of Composite Models (MICOM) was carried out in accordance with the three-step criteria (Hair et al., 2022). This procedure ensures the effect of these variables is restricted to the path coefficients of the structural model, and not a result of the lack of invariance in the construct parameters (Felipe et al., 2017) as reported in Table 8.

Once measurement invariance was established, multigroup analysis was executed (Hair et al., 2019b). Our procedure was based on permutations and the PLS-MGA (Chin and Dibbern, 2010; Sarstedt et al., 2011). These results are summarized in Table 9. Therefore, we conclude that there are no significant differences in the construct parameters.

Table 8. Results of the Measurement Invariance (MICOM) procedure.

MICOM Step 1. Configural Invariance				
Configural invariance established across groups? Yes				
MICOM Step 2. Established across groups? Yes				
Construct	Original Correlation c	5% Quartile of the empirical distribution of c_u	<i>p</i> -value	Compositional Invariance Established?
EB	0.9999	0.999	0.782	Yes
OC	0.9996	0.999	0.380	Yes
GC	0.9997	0.997	0.711	Yes
MICOM Step 3a. Equality of construct's mean values				
Construct	Difference of the composite's mean value (=0)	95% Confidence Interval	<i>p</i> -value	Equal mean values?
EB	0.000	[-0.327, 0.323]	0.716	Yes
OC	0.002	[-0.329, 0.320]	0.948	Yes
GC	0.003	[-0.321, 0.328]	0.680	Yes
MICOM Step 3b. Equality of construct's variance values				
Construct	Logarithm of the composite's variance value (=0)	95% Confidence Interval	<i>p</i> -value	Equal Variance
EB	0.005	[-0.492, 0.504]	0.729	Yes
OC	0.002	[-0.816, 0.762]	0.857	Yes
GC	0.010	[-0.522, 0.512]	0.744	Yes

Table 9. Multi-Group analysis.

Constructs	Permutation Test	
	Path Coefficients–difference (Group GRI (1.0) – Group GRI (2.0))	<i>p</i> -value
OC →EB	-0.033	0.845
GC →EB	0.085	0.559
Constructs	PLS–MGA	
	Path Coefficients–difference (Group GRI (1.0) – Group GRI (2.0))	<i>p</i> -value
OC →EB	-0.033	0.831
GC →EB	0.085	0.536
Constructs	Parametric Test	
	Path Coefficients–difference (Group GRI (1.0) – Group GRI (2.0))	<i>p</i> -value
OC →EB	-0.033	0.838
GC →EB	0.085	0.559
Constructs	Welch–Satterthwait Test	
	Path Coefficients–difference (Group GRI (1.0) – Group GRI (2.0))	<i>p</i> -value
OC →EB	-0.033	0.829
GC →EB	0.085	0.541

4.5. Assessment of the predictive performance using holdout samples

Shmueli et al. (2016, 2019) believe that a structural model with sufficient predictive power is indicative of its value not only for making macro-level decisions, but also for micro-level and customized decisions. A predictive model focuses on predicting data outside of the sample for individual cases (Hair and Sarstedt, 2021). To evaluate the results, predictive performance can be compared using two indices: (1) Q^2 -value in PLS_{predict} where if Q^2 is positive, the prediction error of PLS-SEM is less than the prediction error by using mean values; and (2) a benchmark linear regression model (LRM) providing prediction errors and summary statistics based on model comparisons. Compared to the results from the LRM, the results from PLS-SEM must exhibit lower prediction errors (for example, in terms of RMSE or MAE) than LRM. PLS_{predict} comprises the following steps (Roldán and Cepeda, 2020). The first step is to run the algorithm and check that the Q^2_{predict} values of the indicators of the dependent variables are all positive ($Q^2_{\text{predict}} > 0$), as occurs in our case (see Table 10).

The second step is to ascertain if the prediction errors are distributed symmetrically. If the asymmetric absolute value is lower than 1, RMSE should be used as a criterion for prediction error; otherwise, MAE should be used. Table 11 shows the descriptive statistics of the indicators of dependent variables.

The final step is to compare the differences in errors (according to whether RMSE or MAE was used). Table 12 shows the differences in prediction errors between both models. This model shows the predictive power for the endogenous latent variable Environmental Behavior (EB), which has a positive Q^2_{predict} value, as well as for all manifest variables or indicators. There are negative differences for RMSE in Env1 and Env2 indicators (recommended). The same is true for Env4, which has a negative difference compared to MAE. Therefore, by and large, the model satisfies the established criteria and has a good capacity to predict future results.

Table 10. Q^2_{predict} values.

Indicator	PLS		
	RMSE	MAE	Q^2_{predict}
Env1	0.976	0.791	0.548
Env2	1.322	0.962	0.490
Env3	1.669	1.159	0.400
Env4	1.351	0.830	0.598
Env5	1.863	1.256	0.411

Table 11. Descriptive statistics and choice of the error prediction criterion.

	Mean	Median	Min	Max	Standard Deviation	Kurtosis	Asymmetry	Decision
Env1	0.003	0.072	-1.922	3.109	0.976	-0.096	0.659	RMSE
Env2	0.007	0.201	-3.445	4.821	1.322	0.784	-0.616	RMSE
Env3	0.008	0.005	-4.626	4.325	1.669	0.751	-0.762	RMSE
Env4	0.006	0.072	-4.962	3.442	1.351	3.139	-1.289	MAE
Env5	0.012	0.142	-5.222	4.753	1.863	1.126	-0.611	RMSE

Table 12. The difference in RMSE or MAE errors between PLS and LM (predictive performance).

Indicator	PLS			LM			PLS-LM		
	RMSE	MAE	$Q^2_{predict}$	RMSE	MAE	$Q^2_{predict}$	RMSE	MAE	Decision
Env1	0.976	0.791	0.548	1.033	0.632	0.765	-0.057	0.159	RMSE
Env2	1.322	0.962	0.490	1.493	1.050	0.622	-0.171	-0.088	RMSE
Env3	1.669	1.159	0.400	0.910	0.625	0.758	0.759	0.534	RMSE
Env4	1.351	0.830	0.598	1.542	1.238	0.488	-0.190	-0.408	MAE
Env5	1.863	1.256	0.411	0.975	0.711	0.549	0.888	0.544	RMSE

5. Discussion and conclusions

Environmental problems are a global phenomenon that should concern all companies. This concern should be manifested by adhering to environmental commitment and behavior. This task is not exclusive to certain companies and the government which, to a certain extent, have influenced the economic and political decisions made regarding environmental issues. The 2030 Agenda for Sustainable Development provides the regulatory bases in caring for the environment now and in the future. The research findings explain the impact of the organizational compliance culture and the green culture on environmental behavior with an $R^2 = 0.728$. In this context, the results highlight the importance of generating dynamic capacities to develop those intangible internal resources that favor environmental sustainability. These resources are not bought in the market but are built within organizations.

This result is consistent with Sanyal and Pal (2017) and confirms that providing sufficient support to organizational culture, a sense of identity that determines behavior towards the natural environment is promoted. Furthermore, this result is consistent with Salomon's (2020) idea that culture has a positive impact on behavior, because a rule-oriented compliance culture steers the organization in a focused direction. And also with Li (2014) who concludes that if organizations facing a global crisis, reduce their environmental impact by promoting environmental sustainability as part of their organizational objectives within the organizational culture, the results will be socially, environmentally, and economically beneficial. Likewise, Aziz et al. (2015) mention that companies with a culture of sustainability play an important role in managing sustainable practices needed in the organizational environment.

Another important finding is that environmental commitment is a moderating construct between green culture and environmental behavior. This result is consistent with Wijethilake and Lama (2019) who argue that firms with sustainability practices have developed the commitment to engage in sustainable business practices with the natural environment through the establishment of environmental strategies with the integration of values. Other recent empirical evidence considers that firms with a sustainable approach develop environmental commitment, and engage in sustainable business, as a resource of competitive advantage (Wijethilake and Lama, 2019). Therefore, we conclude that exercising a green culture and environmental commitment could reduce the problems that continue to affect the environment every day, as increased engagement will increase the likelihood of green behavior (Cop et al., 2020).

Environmental sustainability has become a leading axis and a requirement to protect the natural environment and environmental well-being, as part of sustainable development (Kot et al., 2019), which cannot only be influenced by the values and beliefs of a green culture, but by the environmental

commitment of companies. In this sense, the research results provide empirical evidence that environmental commitment is a moderating construct that allows shifting the strength between green culture and environmental commitment. Therefore, companies that have a green culture need to have an environmental commitment to better explain the environmental performance of companies. Sustainability reports are aligned to the UN Sustainable Development Goals, mainly from the perspective of performance among companies (Abeysekera, 2022), i.e., from a tangible resource perspective, and our contribution is to provide a vision of hidden and intangible resources that could give greater value to companies in the near future.

However, the hypothesis (H3) was not supported, i.e., environmental commitment is not a moderating construct between organizational compliance culture and environmental behavior. Given that the research perspective on a green culture, environmental commitment and environmental behavior are relatively new constructs in the context of the emerging economy, a possible explanation could be a resistance to environmental change processes, as some companies continue with the traditional economic paradigm as the most important dimension. A prevailing culture is a common characteristic of resistance to change (Lozano et al., 2016; Nejati et al., 2017; Zaid et al., 2018). Indeed, the fact that some hypotheses are not supported, we believe, is not wrong, but it is a new finding that allows for further scrutiny of its outcome in order to continue exploring new environmental constructs to advance knowledge.

5.1. Theoretical implications

Despite the breadth of researchers found with an environmental sustainability focus, previous research shows limited empirical evidence on behavioral environmental constructs that contribute to explaining how cause-effect relationships are strengthened through moderating variables from a green organizational culture perspective. This research aligns with Resource-Based Theory (RBT) (Barney, et al., 2011, Barney, 1986; Wernerfelt, 1995; Grant, 1991; Hart, 1995), and Value-Belief-Norm Theory (VBN) (Stern, 2000). These theoretical approaches gave us a more complete understanding of the research phenomenon. That is, when organizations promote their intangible resources, such as organizational compliance culture, green culture and environmental commitment, the impact or influence on environmental behavior will be clear. Specifically, when organizations focus their attention on the organization's internal, valuable and strategic resources and comply with norms and foster values-beliefs towards environmental sustainability. Studies argue that values are the basis for environmental attitudes and behavior (Rahman and Reynolds, 2016; Karp, 1996).

Organizational culture could be the platform for organizations to make an environmental commitment (Mirhadian et al., 2013; Shahriari et al., 2023). The research findings support the theoretical approaches and provide a significant contribution to advance the theory by considering a new moderating construct in the relationship of green culture and environmental behavior. Similarly, green culture helps companies to change norms, values and beliefs that support environmental care, and translate the results of environmental behavior as a valuable and strategic resource. The theoretical contribution to the existing literature lies in presenting a new construct, new theoretical relationships, and a moderating exogenous latent variable. First, organizational compliance culture is a new construct and has a positive impact on environmental behavior. Second, green culture also has a positive impact

on environmental behavior. On the other hand, environmental commitment is a moderating construct that strengthens and even changes the direction of the structural relationship of green culture with environmental behavior.

In particular, it is the first study to highlight the moderating role of environmental commitment in the relationship between green culture and environmental behavior, as moderation describes a situation in which the relationship between green culture and environmental behavior is not constant but depends on the value of a third variable called in this case “environmental commitment”. This moderating variable changes the intensity and even the direction of this relationship in the structural model. Thus, this relationship may be different for companies that drive environmental sustainability, as the difference will depend on the level of environmental commitment that the company possesses. This is therefore the originality and main theoretical contribution of the study, which shows theoretical constructs that may be useful in other empirical research.

Finally, we consider that the results in the first instance would benefit Mexican companies, whose context in the field of environmental sustainability has many opportunities to foster a green culture and environmental commitment. It could also support companies in emerging economies that have environmental commitment within their organizations and other companies in the international context, since the model could be replicated in different types of economies, as sustainability is a topic that is being strongly promoted by the UN and the Organization for Economic Co-operation and Development (OECD).

5.2. Practical implications

The results have practical implications both for managers of organizations that are responsible for meeting the objectives of sustainable development, specifically in the environmental field, and for policy makers and authorities that guide environmental policies, so that organizations contribute to their implementation, support the reduction of environmental problems, improve the well-being of ecosystems and the degradation of natural resources. In other words, this study will help organizations to implement sustainable practices in environmental matters. This study can be relevant in facilitating senior management decision-making on environmental sustainability initiatives by fostering a culture of organizational compliance and a green culture, leading to improved environmental behavior outcomes. In addition, environmental commitment initiatives should be taken to further strengthen environmental behavior. In view of this, it is necessary for managers to be clear that environmental initiatives alone do not lead to effective results, but rather environmental strategies and practices are required to help achieve strategic corporate objectives. Therefore, it is necessary to value green resources as strategic assets and align them with national and international initiatives in this field, since sustainability in general is an issue that is becoming increasingly relevant at a global level, due to the diversity of environmental problems that unfortunately continue to rise. Another practical implication is that it could help government authorities to make decisions on environmental regulation.

5.3. Limitations and future research

There are several limitations of this research that serve as a foundation for future research. For instance, we recommend executing the study in other countries that produce sustainability reports for the Global Reporting Initiative, which are also registered in the Sustainability Disclosure Database. Second, the study data was collected at a single point in time, so longitudinal studies are also recommended, and future research should consider studying other behavioral and situational constructs, such as leadership, because business, political and governmental leaders are the ones who have the power to steer environmental initiatives and, above all, to lead towards the vision of sustainable organizations that Mexico and the world require today. Finally, it would be worth exploring more control variables to determine if other types of variables can help to describe results in greater detail to facilitate decision making in business. This could lead to other future studies that continue the investigation. Applying the research in one setting, i.e., Mexico, limits the generalization of the results due to the country's particular institutional environment. For this reason, it also invites to test this model in other emerging economies and in developed countries, which are currently investing in sustainability through frontier research.

Use of AI tools declaration

All authors declare that they have not used Artificial Intelligence (AI) tools for the creation of this article.

Conflict of interest

All authors declare no conflicts of interest in this paper.

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