

# Can proactive environmental strategy improve Multilatinas' level of internationalization? The moderating role of board independence

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## Funding information

Consejería de Conocimiento, Investigación y Universidad, Junta de Andalucía, Grant/Award Numbers: Excellence Research Project P11-SEJ-7988 and P11-SEJ-7988; Spanish Ministry of Education and Science, Grant/Award Numbers: ECO2013-47009-P, ECO2014-58799-R, ECO2016-75909-P and CAS18/00134; University of Granada

## Abstract

This paper explores the relationships between proactive environmental strategy (PES) and internationalization in emerging markets multinationals from Latin America (Multilatinas). Drawing on the resource-based view and institutional theory and using a sample of 86 listed firms during the period 2013–2017, we find that Multilatinas with higher tiers of PES are associated with higher degrees of geographic international diversification. Because adopting PES is directly conditioned by institutional pressures to comply with stakeholders' regulations and expectations, Multilatinas that implement advanced PES will be able to achieve a higher level of international presence in foreign markets. Our results also reveal that board independence positively moderates the relationship between PES and geographic international diversification. Specifically, board independence provides Multilatinas with the opportunity to integrate valuable knowledge and expertise and thus to take advantage of implementing advanced PES to achieve even greater levels of internationalization. This study expands understanding of how environmental strategies influence internationalization of firms in the Latin American business context.

## KEYWORDS

board independence, emerging markets multinationals, geographic international diversification, Latin America, Multilatinas, proactive environmental strategy

## 1 | INTRODUCTION

During the last decade, the world has been experiencing the consequences of severe pollution and climate change, increasing organizations' environmental awareness of the importance of transforming production activities into environmentally friendly and profitable businesses (Bruni, Guerriero, & Patitucci, 2011; Duque, González, & Restrepo, 2016; González-Ruiz, Botero-Botero, & Duque-Grisales, 2018). As companies seek to improve their environmental performance to develop competitive advantages (Aragón-Correa & Sharma, 2003; Bansal, 2005; Molina-Azorín, Claver-Cortés, López-Gamero, & Tarí, 2009), environmental management becomes a strategic issue

(González-Benito & González-Benito, 2006). Proactive environmental strategies (PESs) are a valuable competency that can bring firms various business benefits (Sharma & Vredenburg, 1998). For instance, in addition to appreciating companies' distinguished corporate image, customers, and other important stakeholders will view PES-adopting companies as good business citizens (Danso, Adomako, Amankwah-Amoah, Owusu-Agyei, & Konadu, 2019; Tsai & Liao, 2017).

Previous studies have analysed both the influence of internationalization on firms' tendency to launch products/procedures that mitigate environmental damage and the effects of internationalization on firms' adoption of environmental strategies. The literature examines aspects such as environmental regulations (i.e., Christmann, 2004),

international experience, and international diversification (e.g., Aguilera-Caracuel, Hurtado-Torres, & Aragón-Correa, 2012; Bansal, 2005). Other studies show that environmental management becomes relevant when companies operate in the international context (e.g., Aguilera-Caracuel et al., 2012; Aguilera-Caracuel & Ortiz-de-Mandojana, 2013; Bansal, 2005). Developing PES can thus help firms to integrate stakeholders' interests (Buysse & Verbeke, 2003; Christmann, 2004) and build a solid reputation to rise above business rivals in host country markets (Chen, Ong, & Hsu, 2016; López-Gamero, Molina-Azorín, & Claver-Cortes, 2009). As PES-adopting firms improve their expansion into foreign countries and attain solid corporate status (Aguilera-Caracuel & Guerrero-Villegas, 2018; Christmann & Taylor, 2001), they gain the legitimacy to operate beyond local markets.

Despite the studies mentioned, little attention has been paid to environmental strategies in emerging markets multinationals (EMMs; e.g., Danso et al., 2019; Duque-Grisales & Aguilera-Caracuel, 2019; Gallego-Álvarez, 2018; Tsai & Liao, 2017). Even the largest Western multinationals acknowledge that EMMs are growing strikingly in scale and at remarkable speed. EMMs have procured new companies, expanding at a tremendous rate. The main drivers of expansion are the constant search for new markets, income sources, efficiencies, and in some cases even less-tangible elements such as national prestige and government policies. Even less research has analysed environmental strategies in EMMs with headquarters in Latin American countries (Multilatinas). Multilatinas have attracted attention from international business scholars (e.g., Duque-Grisales & Aguilera-Caracuel, 2019; Jormanainen & Koveshnikov, 2012). These firms are especially important in the international arena due to their great competitiveness in both costs and knowledge-intensive activities. Institutional theory can be used to examine in depth the highly significant question of how Multilatinas become more internationally oriented based on their environmental strategies. To fill this research gap, our study seeks to provide evidence of the impact of PES on Multilatinas' level of internationalization.

Multilatinas tend to be organized in business or pyramidal groups with complex control and accountability structures. Aguilera, Ciravegna, Cuervo-Cazurra, and Gonzalez-Perez (2017) recently indicated the need for research on how these firms organize their boards of directors to handle growth derived from geographic diversification. The board of directors is at the apex of corporations' decision-making process. Every major operational or strategic decision, including the firm's policy concerning the natural environment, must be approved by the board (Kassinis & Vafeas, 2002). Previous studies also show that directors play the key role in companies' internationalization (Barroso, Villegas, & Pérez-Calero, 2011). In the context of Multilatinas, independent directors can be beneficial because they can improve the firm's reputation and leverage knowledge via better quality of governance (Love & Klapper, 2002). According to the resource-based view (RBV), independent directors with specific knowledge and expertise may influence the way Multilatinas develop their PES to achieve greater levels of internationalization. Further, this effect could occur through identification and selection of the most

appropriate and profitable environmentally responsible investment strategies, thus influencing Multilatinas' international expansion even more strongly. This paper proposes that the relationship between PES and Multilatinas' internationalization level is moderated by board independence (BI).

This paper makes three key contributions. First, it contributes to the existing literature on international business by extending institutional theory (Scott, 1987) and the natural RBV of firms (Hart, 1995) to analyse both the influence of PES on geographic international diversification (GID) in the context of Multilatinas and the moderating effect of BI in that relationship. Second, this paper makes a unique contribution to the literature by combining the environmental management and corporate governance literatures to explain Multilatinas' GID. Recent studies explore how corporate governance encourages adoption of PES (Berrone & Gomez-Mejia, 2009; Ortiz-de-Mandojana, Aguilera-Caracuel, & Morales-Raya, 2016; Walls, Berrone, & Phan, 2012), but the effects of corporate governance on international expansion have not been sufficiently analysed (especially in EMMs). Our study focuses on the role of BI in the PES–GID relationship. Third, although this issue has recently attracted growing research interest, most empirical results are based on Chinese and Indian multinationals; little attention has been paid to Multilatinas. Our study analyses the phenomenon using a sample of Multilatinas, as Latin America provides an interesting and unique context for testing old theories and generating new insights into EMMs' internationalization (Aguilera et al., 2017).

This article is organized as follows: First, it discusses the theoretical framework and the three theories used to develop the hypotheses. Next, it explains the study sample, data, and methodology. Finally, it reports the results, discusses the main findings, and draws conclusions.

## 2 | THEORETICAL BACKGROUND AND HYPOTHESES

### 2.1 | Reactive and PES in the context of Multilatinas

Over the last two decades, an important group of multinationals has emerged from the developing regions, especially from Asia and Latin America. Multilatinas have been shaped by poor institutional conditions in their home countries (Marano, Tashman, & Kostova, 2017)—especially, weak corporate governance (Cuervo-Cazurra & Ramamurti, 2014), high levels of political risk (Henisz, 2000), limiting regulations, and feeble control of corruption (Cuervo-Cazurra, 2016). Some authors argue that the presence of such companies outside their countries of origin is explained only by their privileged access to scarce natural resources and/or cheap labour (Debrah, McGovern, & Budhwar, 2000).

Multilatinas initially tended to develop reactive environmental strategies, merely responding to changes in environmental regulations or stakeholder pressures and not viewing environmental management as a priority. As different stakeholders and consumers in other international markets become better informed and more aware of the environmental impact of consumer products, however, they demand that

firms improve their environmental performance. Multilatinas should thus adopt more PES by developing corporate environmental practices beyond the requirements of environmental regulations and standard actions in order to reduce the environmental impact of their operations (Aragón-Correa & Sharma, 2003). Because Multilatinas seek to achieve innovative capabilities relevant to other countries that are relatively easy to transfer internationally (Khanna & Palepu, 2010), they can use these capabilities to improve their environmental strategy as an inevitable internationalization strategy. Improving their competitive position can enable Multilatinas not only to access new markets but also to enhance their technology, production, and trade.

Numerous typologies and taxonomies have anticipated different levels of environmental strategy proactivity, classifying strategies on a spectrum from passive (or reactive) to more advanced (or proactive; Aragón-Correa, 1998; Buysse & Verbeke, 2003; Henriques & Sadorsky, 1999; Murillo-Luna, Garcés-Ayerbe, & Rivera-Torres, 2011). Hart (1995) distinguishes four types of environmental strategy: (a) end-of-pipe approach, (b) pollution prevention or total quality management, (c) product stewardship, and (d) sustainable development. Henriques and Sadorsky (1999) identify four groups: reactive strategy, defensive strategy, accommodative strategy, and proactive strategy. Both of these studies relate to more or less advanced environmental firm practices. Along similar lines, Buysse and Verbeke (2003) propose three categories of environmental strategies: reactive strategy, pollution prevention, and environmental leadership. Murillo-Luna et al. (2011) find four types of environmental response pattern on the basis of degree of proactivity—that is, on whether firms tend to anticipate or react to environmental requirements and to use prevention or corrective action in handling pollution: passive response, attention to legislation response, attention to stakeholders response, and total environmental quality response.

On the basis of Hart (1995), Buysse and Verbeke (2003), and Murillo-Luna et al. (2011), this paper proposes PES that focuses on development of four required and essential dimensions: environmental initiatives (EIs), environmental actions (EAs), green innovations (GIs), and emissions control (EC). Like the end-of-pipe approach (Hart, 1995), EIs reflect willingness to implement and fulfil environmental policies and must be adjusted continuously to changing regulatory pressures. EAs implement EIs through effective investments and environmental expenditures. GI involve forms of product differentiation in which products and manufacturing processes are designed to minimize the negative environmental burden during products' entire life cycle, as in the case of product stewardship strategy (Hart, 1995). Finally, in pollution prevention (Hart, 1995; Murillo-Luna et al., 2011), EC indicate firms' continuous adaptation of their products and production processes to reduce pollution levels below legal requirements. These four dimensions are presented in detail in Section 3.

## 2.2 | PES and internationalization of Multilatinas

Firms develop PES by voluntarily investing resources to achieve their objectives. Environmentally proactive firms are likely to design or alter

products and processes to avoid negative environmental effects (Porter & Kramer, 2006) and obtain competitive advantages (Tsai & Liao, 2017) that enhance their reputation and legitimacy (Berrone & Gomez-Mejia, 2009; Schnitfeld & Busch, 2016). Furthermore, corporations implementing PES and seeking to identify and evaluate environmental trends are likely to innovate and enjoy the competitive advantages gained by establishing industry standards that enable them to build potential entry barriers against competitors (Khanna & Palepu, 2010).

Multilatinas that implement PES beyond regulatory compliance can boost their sales and market share (Danso et al., 2019) and exploit new opportunities in foreign markets (Quan, Wu, Li, & Ying, 2018). Similarly, when Multilatinas consider institutional characteristics in both their home countries and their foreign host markets (Duque-Grisales & Aguilera-Caracuel, 2019), they can use PES to build a positive corporate image and obtain high levels of customer satisfaction (e.g., Bhattacharya & Sen, 2003). Such firms may obtain support and legitimacy from interest groups that lead them to achieve higher levels of internationalization (Murray, Gao, & Kotabe, 2011).

Moreover, Multilatinas can anticipate future regulations or evaluate environmental trends that positively affect the interactions between Multilatinas and their host countries' governments (e.g., Rathert, 2016). As host countries' governments become more willing to cooperate with Multilatinas (Li et al., 2018), they may grant Multilatinas licences to operate, clearly improving Multilatinas' market value (Bhanji & Oxley, 2013).

We propose that, because Multilatinas with stronger PES demonstrate greater commitment to environmental improvement, they may become more visible, gain increased recognition in various markets as environmentally friendly companies, and ultimately expand their operations easily in different countries and regions with varied institutional (Kostova & Roth, 2002), political, environmental, and cultural profiles (Aguilera-Caracuel & Ortiz-de-Mandojana, 2013). By responding properly to stakeholders' demands (Kang, 2013), such companies can overcome entry barriers in specific markets, enhancing their reputation and legitimacy in the different markets in which they operate (Cuervo-Cazurra, 2016).

On the basis of the foregoing, we formulate following hypotheses:

**H1.** : PES is positively related to GID of Multilatinas.

Because PES focuses on development of four dimensions, we propose the following subhypotheses as constituents of H1:

**H1a.** : EIs are positively related to GID of Multilatinas.

**H1b.** : EAs are positively related to GID of Multilatinas.

**H1c.** : GIs are positively related to GID of Multilatinas.

**H1d.** : EC is positively related to GID of Multilatinas.

## 2.3 | Moderating effect of BI

Having analysed the direct relationship between PES and internalization of Multilatinas, we can now identify other factors affecting the

strategic decisions that firms make. The board of directors is at the apex of the decision-making process in corporations. Every strategic decision, including the firm's policy toward the natural environment, must go through the board (Kassinis & Vafeas, 2002). Previous studies also show that directors play the key role in the internationalization of companies (Barroso et al., 2011). According to the RBV, one way directors provide resources is to participate in firm strategy (Barroso et al., 2011). Studies show the importance of BI, which is usually related to the presence of independent directors, that is, individuals not employed as officers of the company (Chen, 2011).

Independent directors with diverse background and skills provide counsel and advice to top managers, formulate corporate strategy, facilitate access to resources, and build good external relations with stakeholders (Hillman, Cannella, & Paetzold, 2000; Van den Berghe & Levrau, 2004). Independent directors have a broader vision and experience of other sectors and can use their managerial expertise from other areas to bring companies valuable knowledge on how to operate in more diversified environments and markets (Sanchez-Bueno & Usero, 2014). Independent directors tend to promote PES because they understand better the importance of making long-term environmental investments (Calza, Profumo, & Tutore, 2016) and integrating them as a source of sustainable competitive advantage. Previous studies also note that director interlocks (i.e., directors who simultaneously belong to the boards of directors of several companies) with firms that provide knowledge-intensive business services are positively linked to the adoption of PES (Ortiz-de-Mandojana, Aragón-Correa, Delgado-Ceballos, & Ferrón-Vílchez, 2012).

In the context of Multilatinas, the broader vision and experience of independent directors may have a positive impact on strategic decision-making capacities and the quantity and quality of environmental investments (Cuadrado-Ballesteros, Rodríguez-Ariza, & García-Sánchez, 2015). Independent directors would persuade the firm to respond to different environments' needs and develop PES to enhance organizational legitimacy to operate in foreign markets (Reuber & Fischer, 1997). Such directors may lead Multilatinas to develop advanced, effective PES by establishing environmental policies and initiatives, GI, and pollution control (González-Benito & González-Benito, 2010)—strategies that aim to improve stakeholder engagement and advanced corporate transparency (Frias-Aceituno, Rodríguez-Ariza, & Garcia-Sanchez, 2013). These strategies can also

help firms to overcome environmental challenges (López-Gamero et al., 2009) and achieve higher international visibility and reputation, leading to higher GID. Taking into account the foregoing arguments, this paper proposes the following hypotheses:

H2. : BI positively moderates the relation between Multilatinas' PES and GID.

Because PES focuses on development of four dimensions, we propose the following subhypotheses as constituents of H2:

H2a. : BI positively moderates the relation between Multilatinas' EIs and GID.

H2b. : BI positively moderates the relation between Multilatinas' EAs and GID.

H2c. : BI positively moderates the relation between Multilatinas' GIs and GID.

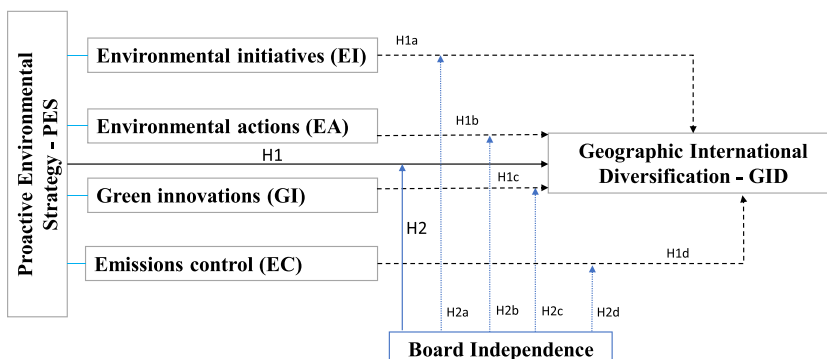
H2d. : BI positively moderates the relation between Multilatinas' EC and GID.

Figure 1 summarizes the research model developed in this study.

### 3 | MATERIAL AND METHODS

#### 3.1 | Data

Three criteria were employed for selecting the companies whose data were collected for analysis. First, we considered only Multilatinas that made over USD \$1 billion in annual revenue and were included in the MSCI Emerging Markets Index. The MSCI Emerging Markets Index is designed to reflect the performance of large-cap and mid-cap securities in 26 emerging markets. This index is the most widely adopted mandate structure for emerging markets investors due to its risk and performance analytics. The MSCI methodology requires that the companies composing the index provide information on environmental, social, and governance (ESG) strategies to the market. Second, we selected companies listed on the Latin American stock market, on the basis of quality of financial data and availability of financial information. This filter produced 111 companies, primarily from Brazil, Mexico, Colombia, Chile, and Peru. Third, we chose companies that



**FIGURE 1** Research model [Colour figure can be viewed at [wileyonlinelibrary.com](http://wileyonlinelibrary.com)]

provided information on financial, environmental, and governance factors to the Thomson Reuters ASSET4 ESG database. Schäfer, Beer, Zenker, and Fernandes (2006) characterize the Thomson Reuters ASSET4 database as containing transparent, objective, auditable, comparable, and systematic economic ESG information to provide a comprehensive platform to establish benchmarks for assessment of corporate performance. After applying this filter, we obtained a total sample of 430 observations from 86 companies, distributed across six sectors identified by their two-digit code in the North American Industry Classification System, as follows: 26.74% manufacturing (S31), 24.42% retail trade (S44), 17.44% mining, oil, and gas extraction (S21), 16.28% utilities (S22), and 15.12% other. Our sample period is 2013–2017.

## 3.2 | Variables

### 3.2.1 | Dependent variable

Our dependent variable is GID. GID is a good proxy of internationalization because it is determined by the number of countries and/or regions in which firms develop their activities (Strike, Gao, & Bansal, 2006). Prior research recommends use of multiple dimensions to measure international diversification for more comprehensive assessment of the phenomenon (e.g., Hitt, Tihanyi, Miller, & Connelly, 2006). Following Aguilera-Caracuel, Guerrero-Villegas, Vidal-Salazar, and Delgado-Márquez (2015), we measured GID as firm sales outside the domestic market according to distribution worldwide using the entropy index.

The following formula was used to calculate the entropy index:

$$GID = \sum_i P_i \times \ln(1/P_i), \quad (1)$$

where  $P_i$  is the sales percentage in a specific region  $i$  and  $\ln\left(\frac{1}{P_i}\right)$  represents the weight given to a region. This ratio considers both the number of regions in which the company operates and the relative importance of each region to the company's total sales (Hoskisson, Hitt, Johnson, & Moesel, 1993). To calculate entropy, we use the international market sales data available in Thomson Reuters' geographic segment for each company to classify foreign markets into six relatively homogeneous global regions: North America, Central America, Latin America (excluding the firm's own market), Europe, Asia and the Pacific, and Africa. These regions are consistent with the World Bank's (2018) classification of regions.

### 3.2.2 | Independent variable

This study uses PES as an independent variable. Previous researchers have used qualitative measuring tools on the basis of mail surveys conducted on specific company samples (Aragón-Correa, 1998; González-Benito & González-Benito, 2005) and environmental performance indicators provided by institutional agencies (Kock, Santaló, & Diestre, 2012). We decided to evaluate 32 indicators from the Thomson Reuters ASSET4 database for this variable. Table 1 shows the description of each of the

indicators used in this study. (See Table 1). These indicators characterize environmental proactivity as an overall measure and reflect a company's performance and capacity to reduce the use of materials, energy, or water and to find more ecoefficient solutions by improving supply chain management and creating new market opportunities through new environmental technologies and processes or ecodesigned products. The indicators also capture a company's commitment and effectiveness in reducing environmental emissions in production and operational processes. A wide range of relevant prior international business studies has used these indicators to capture degree of PES; e.g., Gallego-Álvarez, 2018; Semenova & Hassel, 2015; Taliento, Favino, & Netti, 2019).

Exploratory factor analysis using principal component analysis and Varimax rotation method with Kaiser normalization in SPSS version 24.0 were employed to reduce the number of items to a more manageable level. The reduction resulted in five factors with eigenvalues of over 1 and variance of over 79.03%. The Kaiser-Meyer-Olkin (KMO) value is 0.943, with a Bartlett's test significance of 0.000. As the reliability analysis performed (Cronbach's  $\alpha > .8$ ) was only satisfactory for four factors, we discarded the fifth. The average variance extracted took values above 0.5, consistent with acceptable criteria (Fornell & Larcker, 1981); items with low loadings ( $< .5$ ) were deleted.

Table 2 displays the results. Finally, to confirm our findings, we conduct confirmatory factor analysis and obtain five factors.

The results of the factor analyses suggest that Factor 1 is the most important, as it explains about 38.6% of the total variation. Composed of six attributes, Factor 1 can be termed EIs and is associated with a company's compliance with environmental norms and policies. Four attributes contributed to Factor 2, EAs. It is interesting to see how the managers want to protect the environment by giving EIs concrete form in effective investments. Factor 3 (GIs), with three indicators, is related to the company's commitment through new environmental technologies and processes or ecodesigned products. Factor 4, EC, also involves the company's commitment to reducing environmental emissions. Finally, Factor 5 is discarded due to insufficient factor load.

On the basis of these results, PES is composed of four dimensions obtained in the factor analysis described above: EI, EA, GI, and EC. These dimensions are theoretically consistent with the dimensions included in the PES construct in previous relevant literature (Buysse & Verbeke, 2003; Hart, 1995; Murillo-Luna et al., 2011).

### 3.2.3 | Moderating variables

Our moderating variable is BI. Following Chen (2011), we measured BI as the ratio of nonexecutive directors serving on the board divided by the total number of board members. We obtained these data from the Thomson Reuters ASSET4 ESG database.

### 3.2.4 | Control variables

We incorporated a list of control variables at board, firm, and industry levels to monitor the extent to which they might affect the relationships proposed. The information was obtained from Thomson Reuters ASSET4 ESG database.

**TABLE 1** Factors influencing proactive environmental strategy

Indicator	Description
Resource reduction policy	Does the company have a policy to reduce the use of natural resources or to lessen the environmental impact of its supply chain?
Water efficiency policy	Does the company have a policy to improve its water efficiency?
Energy efficiency policy	Does the company have a policy to improve its energy efficiency?
Emissions policy	Does the company have a policy to improve emissions reduction?
Resource reduction target	Does the company set specific objectives for resource efficiency?
Environmental management team	Does the company have an environmental management team?
Environmental management training	Does the company train its employees in environmental issues?
Toxic chemicals reduction	Does the company report on initiatives to reduce, reuse, replace, or phase out toxic chemicals or substances?
Total energy use/million in revenue \$	Total direct and indirect energy consumption in gigajoules divided by net sales or revenue in U.S. dollars
Renewable energy use	Does the company make use of renewable energy?
Total water use/million in revenue \$	Total water withdrawal in cubic meters divided by net sales or revenue in U.S. dollars
Environmental supply chain management	Does the company use environmental criteria (ISO14001, energy consumption, etc.) in selecting its suppliers or sourcing partners?
Environmental controversies	Is the company in the media spotlight because of a controversy linked to the environmental impact of its operations on natural resources or local communities?
Total CO <sub>2</sub> emissions/million in revenue \$	Total CO <sub>2</sub> and CO <sub>2</sub> equivalents emissions in tonnes divided by net sales or revenue in U.S. dollars
CO <sub>2</sub> equivalents emission total	Total CO <sub>2</sub> and CO <sub>2</sub> equivalents emissions in tonnes
Emissions trading	Does the company report on its participation in any emissions trading initiative(s)?
NO <sub>x</sub> and SO <sub>x</sub> emissions reduction	Does the company report on initiatives to reduce, reuse, recycle, replace, or phase out SO <sub>x</sub> or NO <sub>x</sub> emissions?
Particulate matter emissions reduction	Does the company report on initiatives to reduce, reuse, recycle, replace, or phase out particulate matter less than 10 microns in diameter (PM10)?
Waste recycled	Total recycled and reused waste produced in tonnes
Hazardous waste	Total amount of hazardous waste produced in tonnes
Waste reduction initiatives	Does the company report on initiatives to reduce, reuse, recycle, replace, or phase out total waste?
EMS certified, per cent	Percentage of company sites or subsidiaries that are certified with any environmental management system
Environmental restoration initiatives	Does the company report or provide information on company-generated initiatives to restore the environment?
Environmental investments	Does the company report on environmental expenditures or on making proactive environmental investments to reduce future risks or increase future opportunities?
Environmental expenditures	Total amount of environmental expenditures
Environmental provisions	Environmental provisions as reported in the balance sheet
Environmental partnerships	Does the company report on partnerships or initiatives with specialized NGOs, industry organizations, or governmental or supra-governmental organizations that focus on improving environmental issues?
Environmental products	Does the company report on at least one product line or service that is designed to have positive effects on the environment or that is labelled and marketed as environmentally preferable?
Ecodesign products	Does the company report on specific products designed for reuse, recycling, or reduction of environmental impacts?
Noise reduction	Does the company develop new products that are marketed as reducing noise emissions?
Environmental products	Does the company report on product features and applications or services that promote responsible, efficient, cost-effective, and environmentally preferable use?
Renewable/clean energy products	Does the company develop products or technologies for use in the clean, renewable energy (such as wind, solar, hydro, geothermal, or biomass power)?

Abbreviation: NGO, non-governmental organization.

**TABLE 2** Rotated component Varimax matrix of factors influencing proactive environmental strategy

Construct/indicator	Loadings	Eigenvalues	% of variance	Cumulative %	Cronbach's $\alpha$
Factor 1: environmental initiatives		<b>5.211</b>	<b>38.612</b>	<b>38.612</b>	<b>0.935</b>
Resource reduction policy	0.886				
Policy water efficiency	0.835				
Policy energy efficiency	0.873				
Policy emissions	0.738				
Waste reduction initiatives	0.561				
Environmental partnerships	0.685				
Factor 2: environmental actions		<b>2.338</b>	<b>16.620</b>	<b>55.232</b>	<b>0.921</b>
EMS certified, per cent	0.559				
Environmental investments	0.642				
Environmental expenditures	0.627				
Environmental provisions	0.613				
Factor 3: green innovations		<b>1.720</b>	<b>17.451</b>	<b>72.683</b>	<b>0.865</b>
Environmental products	0.670				
Eco-design products	0.876				
Product environmental	0.512				
Renewable/clean energy products	0.504				
Factor 4: emissions control		<b>1.338</b>	<b>5.081</b>	<b>77.764</b>	<b>0.832</b>
Emissions trading	0.681				
NO <sub>x</sub> and SO <sub>x</sub> emissions reduction	0.678				
Total CO <sub>2</sub> emissions/million in revenue \$	0.724				
CO <sub>2</sub> equivalents emission total	0.601				
Factor 5: toxic chemical reduction		<b>1.266</b>	<b>1.755</b>	<b>79.030</b>	<b>0.758</b>
Toxic chemicals reduction	0.711				

Note. Extraction method: principal component analysis. Rotation method: Varimax with Kaiser normalization. Rotation converged in 14 iterations.

- Activity sector: It is generally assumed that companies in environmentally sensitive industries tend to adopt better PES than companies in environmentally non-sensitive industries. To consider the possible effect of industry type on the sample of firms, we incorporate two dichotomous variables for four of the five activity sectors, including the industry dummy controls for some industry-level factors that have been presented to explain the variations in environmental engagement across industries.
- Gross domestic product (GDP): Higher levels of economic development are assumed to lead to greater environmental responsibility due to higher levels of resources and greater awareness of social and environmental problems. To consider the possible effect of home country on the sample, we incorporate GDP for each country in our analysis.
- Firm size: We use the logarithm of total sales from each Multilatinas. Size may be relevant in several ways—company size, which affects the adoption of PES, and possible existence of scale economies inherent to environmentally oriented investments (Carballo-Penela & Castromán-Diz, 2015).
- Financial performance (FP): Although it is essential to focus on aspects that most directly affect companies' benefits, achieving better FP gives companies the economic means to implement PES. We therefore use return on assets to measure FP. This ratio expresses how a company's earnings correspond to different managerial policies and to relative efficiency of asset utilization.
- Board size: We define board size as number of board directors. Some studies suggest that a board's size may condition the way companies adopt environmentally responsible activities (Guest, 2009; Helfaya & Moussa, 2017).
- Environmental Management Systems (EMS): To estimate EMS, we create a dummy variable to indicate the presence or absence of implementation of an environmental management system such as ISO 14001. ISO 14001 is a process standard that grants facilities flexibility in the types of environmental goals they wish to establish. It encourages facilities systematically to manage their environmental impacts by requiring them to implement a series of internal management procedures (Arimura, Darnall, Ganguli, & Katayama, 2015).
- Slack: This ratio refers to the organizations' level of liquid assets, such as cash uncommitted to any goal, that can be invested in a wide range of activities (Duque-Grisales & Aguilera-Caracuel, 2019). Slack is of interest because Multilatinas are often slower to implement PES. Perceiving themselves as having scarcity of

resources, they do not see PES practices as a priority. It is therefore valuable to analyse whether the presence of slack can condition Multilatinas to have other priorities, such as adopting an efficient PES.

Table 3 presents the correlation matrix and descriptive statistics for each of the study variables. We can see that the correlation coefficients are not very high, indicating that our estimations do not suffer from collinearity among the independent variables. The average GID is 0.797. We find a positive and significant correlation between GID and EIs ( $\beta = .111$ ;  $p < .05$ ) and between EAs ( $\beta = .178$ ;  $p < .01$ ) and GIs ( $\beta = .225$ ;  $p < .05$ ) but insignificant correlation of GID with EC. Additionally, control variables such as board size and firm size have a positive and significant correlation at 1% with GID.

### 3.3 | Estimation approach

The hypotheses in this study are tested using static panel data regression models of firms' GID as a function of PES, including various controls as appropriate. The authors estimate both fixed and random effects models. To control for unobserved heterogeneities in the data, we ran the Hausman test to determine when to use a fixed versus random effects model. The results for the Hausman test indicate that the fixed effects estimators are inconsistent and that random effects estimates are more appropriate. The results of this test (for the models used in this article) show a  $p$  value above .05 with a significance level of 5%, indicating that the null hypothesis cannot be rejected and that a random effects model is the preferred model for this regression. Finally, we use multiple-moderated regression analysis (Cohen, Cohen, West, & Aiken, 2013) to test the hypotheses, introducing the moderating effect as a multiplicative variable.

## 4 | RESULTS

Table 4 shows the results of the random effects regression analyses for each independent variable (EI, EA, GI, and EC), including the control variables industry type, firm size, board size, return on assets, GDP, EMS, and Slack. The variance inflation factors are below 5 for each of the models presented, indicating that the results are not biased due to multicollinearity (Hair, Sarstedt, Ringle, & Mena, 2012). The model shows good fit, supported by an  $R^2$  within value and the  $F$  statistic. One significant finding—that firm size, depicted as a control variable for all models, is positively related to GID ( $p < .01$ )—implies that larger firm size increases the firm's presence in other markets.

As Table 4 shows, EI has a positive and significant effect on the firm's GID in Model 1 ( $\beta = .139$ ;  $p < .05$ ). Hypothesis H1a is thus accepted. Because Models 2, 3, and 4 show that EA, GI, and EC do not have a statistically significant effect on the firm's GID, Hypotheses H1b, H1c, and H1d are rejected. In conclusion, Hypothesis H1 is partially rejected.

Finally, in Table 5, Models 5 to 8 show the full model, including moderating effects.

Hypothesis H2 suggests that BI moderates the relationships between each of the four PES analysed (EI, EA, GI, and EC) and GID. Model 5 shows that BI moderates the relationship of EI and GID to Multilatinas ( $\beta = .135$ ;  $p < .01$ ; see Figure 2a). Additionally, Model 6 shows that BI positively moderates the relationship between EA and GID ( $\beta = .015$ ;  $p < .05$ ; see Figure 2b), supporting Hypotheses H2a and H2b.

Model 7, in contrast, does not provide sufficient statistical support for Hypothesis H2c. That is, a Multilatinas' BI does not moderate the relationship between its GID and GI (Figure 3a). Finally, Model 8 shows that BI does not moderate the relationship between EC and GID ( $\beta = .004$ ;  $p < .05$ ) for our sample of firms (Figure 3b). This result allows us to reject Hypothesis H2d. Because two of the four dimensions that constitute PES are moderated by BI, we can partially accept Hypothesis H2.

## 5 | DISCUSSION, LIMITATIONS, AND FUTURE STUDIES

This study explores the link between PES and GID in EMMs. It suggests a relationship between Multilatinas that deploy higher levels of environmental strategy with higher degrees of internationalization. Like Martín-Tapia, Aragón-Correa, and Rueda-Manzanares (2010), who find a positive relation between PES and internationalization activities by multinationals in developed markets, this study suggests that EMMs (Multilatinas in particular) adopting PES are more likely to pursue the benefits of internationalization.

We find robust theoretical and empirical evidence to affirm that PES should focus on four strategic dimensions: EI, EA, GI, and EC. These dimensions demonstrate Multilatinas' commitment to the natural environment, which can help them to build a positive image of their products and processes by achieving a high level of customer and stakeholder satisfaction. Effective development of this type of environmental strategy enables firms to gain greater international presence through improvement of transparency, reputation, and legitimacy worldwide.

First, our results confirm that only the relationship between EI and GID is statistically significant and positive in Multilatinas. When Multilatinas express their commitment to protecting the natural environment through compliance with international as well as local environmental policies, they show themselves to be agents of change. These companies then become more visible and project an environmentally friendly corporate brand. As they develop more EIs, they acquire greater organizational capabilities to anticipate change and exploit new opportunities in international markets. For Shah, Arjoon, and Rambocas (2016), firms that develop environmental corporate responsibility should take development of EIs (environmental policies) into consideration first. Mastrandonas and Strife (1992) argue that the first step is an overall policy statement of a firm's environmental stewardship to obtain proactive communication with the corporation's stakeholders. Henriques and Sadosky (1999) indicate that a firm's stakeholders can identify whether firms have a proactive ecological



**TABLE 3** Descriptive statistics and correlations<sup>a</sup>

	Mean	SD	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	
1. Geographic international diversification	0.797	0.574	1																	
2. Environmental initiatives	0.853	0.354	0.111*	1																
3. Environmental actions	0.728	0.446	0.178**	0.000	1															
4. Green innovations	0.809	0.393	0.225**	0.000	0.000	1														
5. Emissions control	-0.040	0.378	0.067	0.026	-0.015	0.041	1													
6. Board independence	0.317	0.214	-0.008	-0.128**	-0.188**	-0.076	0.056	1												
7. Board size	10.691	3.927	0.163**	0.249**	0.090	-0.042	-0.042	-0.027	1											
8. ROA	0.117	0.434	-0.061	0.117*	-0.023	-0.079	-0.174**	0.004	0.086	1										
9. Firm size	3.994	1.347	0.226**	0.083	0.159**	0.064	0.071	-0.170**	0.115*	0.028	1									
10. GDP	3.049	0.408	-0.048	0.404**	0.093	-0.192**	0.173**	-0.038	0.249**	0.022	0.083	1								
11. EMS	0.550	0.498	0.105	0.179**	0.123*	0.164**	0.099*	-0.080	0.025*	-0.051	0.078	-0.170	1							
12. Slack	1.750	1.826	-0.070	-0.125**	0.188**	0.214**	-0.265**	0.063	0.039	0.007	-0.237**	0.062	-0.057	1						
13. Mining and oil and gas extraction	0.140	0.347	-0.062	0.033	0.004	0.003	0.057	0.124*	-0.018	0.027	0.140**	-0.071	0.005	-0.075	1					
14. Utilities	0.128	0.334	-0.128**	-0.052	0.107*	0.184**	-0.064	-0.155**	-0.025	0.011	0.184**	-0.093	0.071	-0.104*	-0.154**	1				
15. Manufacturing	0.233	0.423	.257**	-0.098*	0.099*	0.023	0.179**	0.038	0.041	-0.163**	-0.155**	0.202**	-0.204	0.143**	-0.222**	-0.211**	1			
16. Retail trade	0.209	0.407	-0.028	0.105*	0.086	-0.183**	-0.099*	-0.051	0.164**	0.070	-0.080	-0.081	-0.057	-0.071	-0.207**	-0.197**	-0.283**	1		
17. Other sectors	0.163	0.370	-0.292**	-0.113*	-0.204**	-0.203**	-0.163**	-0.038	-0.134**	0.041	0.024	-0.047	0.075	-0.075	-0.178**	-0.169.	-0.243**	-0.227**	1	

Abbreviations: GDP, gross domestic product; ROA, return on assets.

<sup>a</sup>430 observations. Table contains Pearson's correlation coefficients.

\**p* < .05;

\*\**p* < .01.

**TABLE 4** Results of the random effects linear regression model

	Model 1	Model 2	Model 3	Model 4
<b>Constant</b>	<b>0.964 (0.664)</b>	<b>1.154 (0.678)</b>	<b>0.992 (0.644)</b>	<b>0.978 (0.659)*</b>
Control variable				
Mining, oil, and gas Extraction sector	-0.008 (0.205)	0.003 (0.209)	-0.006 (0.205)	-0.009 (0.206)
Utilities sector	-0.311 (0.201)	-0.311 (0.204)	-0.310 (0.204)	-0.307 (0.202)
Manufacturing sector	0.403 (0.168)*	0.405 (0.170)*	0.398 (0.170)*	0.402 (0.168)*
Retail trade sector	0.153 (0.171)	0.159 (0.173)	0.156 (0.172)	0.154 (0.172)
ROA	0.033 (0.021)	0.048 (0.021)	0.035 (0.021)	0.033 (0.021)
Firm size	0.122 (0.041)**	0.122 (0.041)**	0.122 (0.041)**	0.122 (0.0409)**
GDP	-0.232 (0.225)	-0.309 (0.229)	-0.232 (0.225)	-0.242 (0.225)
Board size	0.368 (0.124)	0.318 (0.229)	0.381 (0.224)	0.377 (0.123)*
EMS	0.114 (0.101)*	0.113 (0.103)	0.109 (0.101)	0.114 (0.101)
Slack	0.009(0.000)**	0.009(0.001)**	0.008(0.000)**	0.009(0.000)**
Independent variable				
F1 environmental initiatives	0.139 (0.034)*			
F2 environmental actions		0.005 (0.017)		
F3 green innovations			0.003 (0.014)	
F4 emissions control				0.004 (0.011)
R <sup>2</sup> within	.1372	.1397	.1346	.1186
F static	13.992**	12.499**	13.521**	14.018***
VIF	1.324	1.638	1.564	1.536

Note. The table includes coefficients of the regression model (estimators). Standard deviations are included in parentheses.

Abbreviation: ROA, return on assets; VIF, variance inflation factor.

\*Significant at  $p < .055$ ;

\*\*Significant at  $p < .01$ ;

\*\*\*Significant at  $p < .001$ .

commitment to the nature through their environmental policy planning. EIs are therefore key in helping Multilatinas initially to enhance their internationalization.

Multilatinas do not achieve higher levels of internationalization, however, when they attend to enhancing their EA and GI and implementing advanced emission control programs. These results can probably be explained by the fact that environmental investments in the Latin American context are still regarded as expenses that negatively affect performance, leading to misperceptions of such actions. Likewise, making efforts to improve production processes or to innovate in products or EC at the source does not guarantee Multilatinas' internationalization. These actions are not seen as a priority because they require great expense in the initial stage. Because Multilatinas do not have an approach to innovation, they neither seek patents to improve their environmental processes nor make their GI or EC sufficiently visible.

It is important to note that the benefits of environmentally friendly policies derive from Multilatinas' intentions, independent of effective implementation. EIs do not necessarily guarantee that these firms will take the right actions to face environmental challenges. Opting to go green is thus an easy way to access new demanding markets, but environmental policies could risk greenwashing (Meng, Zeng, Xie, & Zou,

2019) if firms do not change their way of producing, working, and operating in subsequent years.

Second, to achieve greater visibility and higher levels of internationalization, Multilatinas must implement efficient internal governance mechanisms. This paper analyses whether BI moderates the effectiveness of PES in Multilatinas' GID. Our findings are consistent with recent studies (Fuente, García-Sánchez, & Lozano, 2017): The mere presence of BI does not affect GID in Multilatinas. Rather, independent directors must be aligned with the corporate environmental strategy. This study thus highlights the active role of independent directors in environmentally strategic decision-making processes and intentions. Independent directors must also work toward the firm's compliance with government/international regulations, responsible behaviour, and contribution to environmental issues by contributing their knowledge and expertise. We show that the relationship between EI and GID is stronger when the percentage of BI increases. As argued in theoretical development, director interlocks with firms providing knowledge-intensive business services are positively linked to the adoption of PES (Ortiz-de-Mandojana et al., 2012).

As to the relationship between EA and GID, we find empirical evidence to support the moderating role of BI as well. When independent directors of Multilatinas are concerned to implement EA, they

**TABLE 5** Results of the random effects linear regression model

	Model 5	Model 6	Model 7	Model 8
<b>Constant</b>	<b>0.954 (0.665)*</b>	<b>1.223 (0.678)*</b>	<b>1.144 (0.678)</b>	<b>1.223 (0.678)*</b>
<b>Control variable</b>				
Mining, oil, and gas extraction sector	-0.009 (0.206)	0.002 (0.210)*	0.003 (0.209)	0.002 (0.210)*
Utilities sector	-0.307 (0.202)	-0.315 (0.206)	-0.311 (0.204)	-0.315 (0.206)
Manufacturing sector	0.402 (0.168)*	0.399 (0.171)*	0.405 (0.170)*	0.399 (0.171)*
Retail trade sector	0.154 (0.172)	0.161 (0.174)	0.159 (0.173)	0.161 (0.174)
ROA	0.033 (0.021)	0.048 (0.021)*	0.048 (0.021)*	0.048 (0.021)*
Firm size	0.122 (0.0409)**	0.124 (0.041)**	0.122 (0.041)**	0.124 (0.041)**
PIB	-0.242 (0.225)	-0.318 (0.229)	-0.309 (0.229)	-0.318 (0.229)
Board size	0.377 (0.123)*	0.311 (0.227)	0.318 (0.229)	0.311 (0.227)
EMS	0.110 (0.110)**	0.106 (0.103)**	0.108 (0.101)*	0.113 (0.101)
Slack	0.009(0.000)**	0.009(0.000)**	0.008(0.000)**	0.009(0.000)**
<b>Independent variable</b>				
F1 environmental initiatives	0.137 (0.035)***			
F2 environmental actions		0.007 (0.017)		
F3 green innovations			0.006 (0.034)	
F4 emissions control				0.005 (0.042)
<b>Moderating effect</b>				
Board independence	0.079 (0.068)	0.084 (0.073)	0.089 (0.067)	0.082 (0.075)
EI × board independence	0.135 (0.143)**			
EA × board independence		0.015 (0.102)*		
GI × board independence			0.003 (0.022)	
EC × board independence				0.004 (0.057)
R <sup>2</sup> within	.1554	.1692	.1528	.1511
F static	14.873***	13.152***	14.719**	13.548***
VIF	1.899	1.936	1.864	1.870

Note. The table includes coefficients of the regression model (estimators); standard deviations are included in parentheses.

Abbreviation: VIF, variance inflation factor.

\*Significant at  $p < .055$ ;

\*\*Significant at  $p < .01$ ;

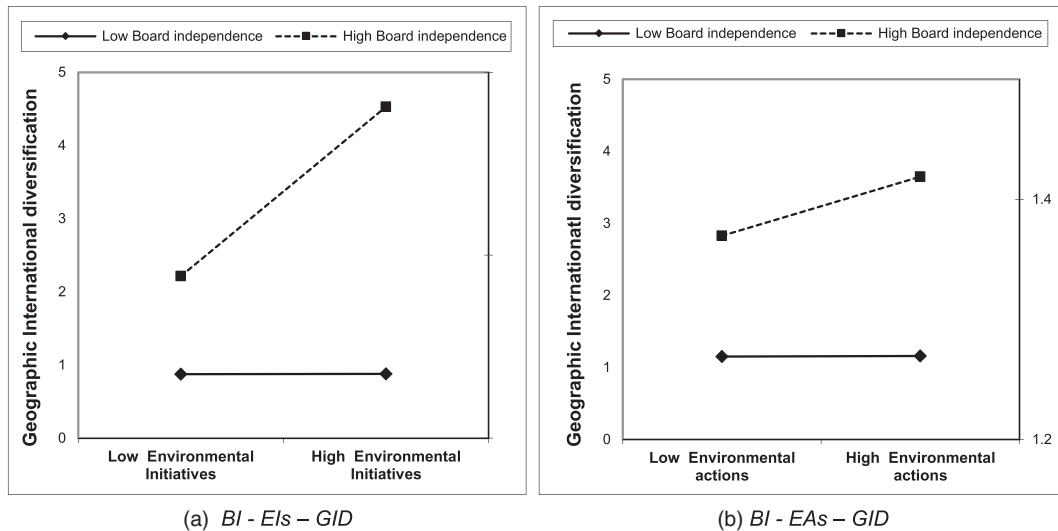
\*\*\*Significant at  $p < .001$ .

promote firm internationalization. Because the board makes strategic investments in environmental issues, providing corporate visibility and positive reputation (Aguilera-Caracuel & Guerrero-Villegas, 2018), Multilatinas can display an accountable, legitimate, transparent corporate image committed to protecting the environment (Christmann, 2004). This image enables them to establish agreements and collaborations with other organizations and institutions and gain licence to operate in international markets. In sum, these results suggest that the expertise and knowledge of the independent directors are more likely to develop environmental policies and initiatives and make effective investments to improve the firm's environmental reputation in the context of Multilatinas, increasing these firms' presence in other markets (Ortas, Álvarez, & Zubeltzu, 2017).

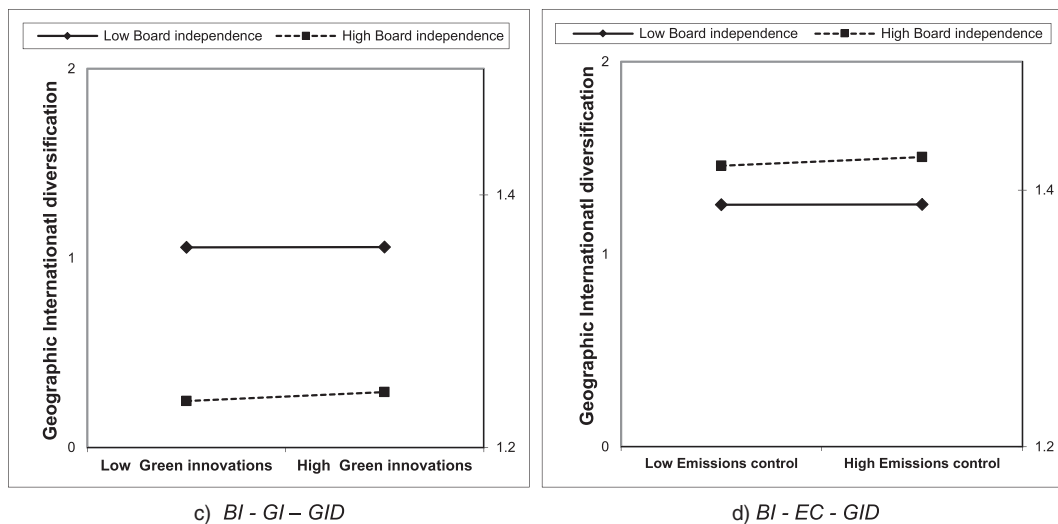
Contrary to our expectations, the analysis found no evidence of a moderating effect of BI in either the relationship between GI and

GID or the relationship between EC and GID. These results suggest that development of GI and EC does not necessarily imply greater internationalization of the firm, even when Multilatinas have independent directors. One possible explanation may be that independent directors do not focus especially on monitoring and promoting specific activities related to environmental strategies, such as innovative activities related to products, manufacturing processes, and pollution prevention programmes. Another explanation could be that Multilatinas may not be especially interested in developing and implementing "green" products and processes, despite the presence of experienced independent directors (with skills and knowledge of the sector). This lack of interest may stem from the large quantity of resources that these activities consume, especially in the short term.

This study differs from those reported in the literature review. Previous findings on the value relevance of relations between PES and



**FIGURE 2** BI moderating effects. Abbreviations: BI, board independence; EI, environmental initiatives; GID, geographic international diversification



**FIGURE 3** BI moderating effects. Abbreviations: BI, board independence; EC, emissions control; GI, green innovations; GID, geographic international diversification

internationalization cannot be generalized to EMMs such as Multilatinas due to the different institutional conditions in their home countries. Our study thus addresses an international research gap in the previous international business literature in the context of EMMs in general and of Multilatinas in particular. Additionally, our empirical results provide evidence to support the view that managerial perceptions of environmental pressures motivate firms to take developing advanced PES more seriously in order to improve GID (Sarkis, Gonzalez-Torre, & Adenso-Diaz, 2010; Wang & Sarkis, 2017). Beyond filling an international gap in the prior literature, this study analyses a variable previously ignored, specifically, the role of independent directors in the relationship between PES and internationalization in the context of Multilatinas. This study further contributes to the existing international business literature by extending institutional theory to analyse

the influence of PES on GID in the context of Multilatinas and the natural RBV of firms to analyse the moderating effect of BI in that relationship.

This study has significant implications for managers and policymakers. From a managerial point of view, Multilatinas that adopt PES are more likely to meet environmental expectations, which enable them to acquire and enhance legitimacy in foreign markets. These firms may thus improve the reputation of ecofirms and gain competitive advantage in the marketplace. Our findings imply that firms can build their reputation by adopting PES and achieving presence in different international markets. These results can motivate managers to deploy efforts and resources to long-lasting EIs to achieve the company's legitimacy in foreign markets. At the same time, managers must consider PES as an investment rather than an expense. Furthermore, this

research suggests that managers and chief executive officers should pay attention to independent boards to integrate environmental sustainability as part of the Multilatinas' strategy to contribute to GID. Multilatinas must thus stress selection of independent directors able not only to supervise the behaviour of top managers but also to formulate and implement environmental strategies. This approach would help the Multilatinas to improve its position in international markets. Finally, policymakers can benefit from this paper's results, which show not only that being more environmentally friendly always pays off in terms of GID but also that BI is crucial to the effectiveness of environmental management practices and their impact on multinationals' level of internationalization. Finally, public and regulatory powers at national and international levels should be able to create incentive programmes (i.e., subsidies) for firms that adopt the best PES while also showcasing the firms that are most responsible on environmental issues. Such policies will encourage Multilatinas and other firms to formulate and implement advanced, responsible environmental strategies that lead them to expand their activities and actions efficiently in foreign markets.

This study encountered several limitations. First, due to data availability, the EMMs in our sample came from five Latin American countries. Our findings thus do not generalize to firms in other geographical regions. Future research should probably be extended to other countries in Latin America and EMMs from other continents as a basis for comparison (once data are available). Second, small sample size (86 companies) limits the scope of the results obtained. Third, the measurement of firms' environmental proactivity is based on secondary data. Although the items used in this study are widely recognised in the recent international business literature (Gallego-Álvarez, 2018; Semenova & Hassel, 2015; Taliento et al., 2019) and extremely valuable, having the potential to offer rich insights into the phenomenon studied, none of the indicators is free of subjective influence. As subjectivity might decrease the validity of our results, future studies should propose additional environmental metrics and/or extend the results by addressing questionnaires to chief executive officers (Aguilera-Caracuel et al., 2012). Finally, the scope of the factors that may influence adoption of proactive environmental practices is limited to a single corporate governance mechanism: BI. Although we chose this mechanism due to the increasing focus on the role of boards, it would be useful for future research to analyse whether specific environmental committees, gender diversity, or ownership structure influence adoption of PES.

It would be also highly significant for future research to compare EMMs' and developed multinationals' environmental management, internationalization, and corporate governance approaches, highlighting differences and similarities.

## ETHICAL APPROVAL

The research performed by the authors for this article did not involve any study of human participants or animals.

## ACKNOWLEDGEMENTS

This research has been funded by the Spanish Ministry of Education and Science (Research Projects ECO2013-47009-P, ECO2014-58799-R, and ECO2016-75909-P and the Mobility Program "José Castillejo" CAS18/00134), the Regional Government of Andalusia

(Excellence Research Project P11-SEJ-7988), and the Business and Economics School of the University of Granada (Unidad Científica de Excelencia Investigaciones Avanzadas en Economía y Empresa). We thank members of ISDE research group (SEJ-481, University of Granada) for their insightful recommendations and suggestions to improve this paper.

## CONFLICT OF INTEREST

Eduardo Duque-Grisales, Javier Aguilera-Caracuel, Jaime Guerrero-Villegas, and Encarnación García-Sánchez declare that we have no conflict of interest.

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**How to cite this article:** Duque-Grisales E, Aguilera-Caracuel J, Guerrero-Villegas J, García-Sánchez E. Can proactive environmental strategy improve Multilatinas' level of internationalization? The moderating role of board independence. *Bus Strat Env*. 2020;29:291–305. <https://doi.org/10.1002/bse.2377>