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The Determinants of Outward Foreign Direct Investment from Latin America and the Caribbean: An Integrated Entropy-Based TOPSIS Multiple Regression Analysis Framework

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Abstract: Given that home country factors play a major role in the internationalization of emerging market firms, there is an ever-growing debate on how they influence the intensity of outward foreign direct investment (OFDI) from these regions. This study investigates how home country factors affect the OFDI intensity in Latin America and Caribbean (LAC) countries. We use the entropy weight method, which uses the Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) method and a balanced panel data consisting of 19 countries from 2007 to 2016. The results show a positive association between macroeconomic performance, formal institutions, infrastructure, technology and the OFDI intensity. Furthermore, we find that robust formal institutions, along with the quality of infrastructure and technology, positively moderate the relationship between macroeconomic performance and the OFDI intensity. These findings show that the internationalization of LAC firms is highly dependent on the contextual conditions in their markets.

Keywords: OFDI; IFDI; home country context; formal institutions; infrastructure and technology; macroeconomic performance; TOPSIS; entropy weight method; Latin America and the Caribbean

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1. Introduction

The political and economic changes during the last decade of the 20th century have profoundly impacted the dynamics of the global economy. This period experienced significant reductions in foreign ownership restrictions (Hallward-Driemeier 2001), which, along with the weakening of global trade barriers, led to rapid growth in international business (Lu and Beamish 2001). The Latin America and Caribbean (LAC) region, previously noted for protected, inefficient, and outdated domestic industrial sectors and unstable political conditions, observed improvements spurned by accelerating domestic reforms (Santiso 2013; Aguilera et al. 2017). These changes offer enormous opportunities for experienced foreign multinational companies to increase their presence in the region. Inward Foreign Direct Investment (IFDI) in the region grew from USD 8.5 billion to USD 104.7 billion from 1990 to 1999—the GDP more than doubled, final consumption expenditure increased from USD 750 billion to USD 1.8 trillion, and annual inflation declined from nearly 22% to less than 3.5% (World Bank 2021). Although these changes create favorable conditions for IFDI, the increased competition can force domestic firms to catch up with their foreign counterparts by intensifying their investments abroad in more favorable regions (Fleury and Fleury 2011; Cuervo-Cazurra and Narula 2015). While several studies document this phenomenon (Goldstein and Shaw 2007; Gammeltoft 2008), the literature lacks a consensus on how domestic conditions affect the OFDI flows from emerging markets (Cuervo-Cazurra et al. 2018).

Compared to traditional multinational companies, domestic conditions heavily influence outward foreign direct investment (OFDI) by firms in emerging countries. These

include economic growth, perceived institutional hardship, competitive pressure, operational characteristics and, most importantly, the state of formal domestic institutions (Luo and Wang 2012). According to North (1990, p. 3), formal institutions represent "the rules of the game in a society or, more formally, are the humanly devised constraints that shape human interaction. In consequence, they structure incentives in human exchange, whether political, social, or economic". Formal institutions are strong "if they support the voluntary exchange underpinning an effective market mechanism" and weak "if they fail to ensure effective markets or even undermine markets" (Meyer et al. 2009, p. 63). To reduce exposure to the unpredictable local conditions and risks associated with institutional voids (Khanna and Palepu 2010), emerging market firms often engage in escape OFDI (Cuervo-Cazurra and Narula 2015). Furthermore, the precarious infrastructure and limited access to technology in the home country, considered as critical determinants of productivity and competitiveness (OECD 2011), can trigger efficiency and strategic asset-seeking OFDI behavior.

The main research question we ask is: *Do domestic factors impact the OFDI by LAC firms?* The motivation to study this topic stems from the increasingly global perspective taken by firms in emerging markets that are likely to have immense domestic welfare implications. The internationalization of emerging market countries (EMCs) remains a nascent field that requires further refinement and understanding (Deng et al. 2020). Studies also point to theoretical inconsistencies (Jormanainen and Koveshnikov 2012) and misconceptions about what drives and restricts the internationalization process (Cuervo-Cazurra et al. 2018). Furthermore, LAC represents an under-investigated region—its unique features offer an opportunity to advance the understanding of how domestic factors affect the internationalization of its EMCs (Aguilera et al. 2017) and provide an ideal laboratory to build and test management theories (Aguinis et al. 2020).

The study provides several novel theoretical and practical contributions. In particular, it advances the knowledge of what drives and restricts the internationalization of LAC firms via OFDI. It focuses not only on the direct effects of various domestic factors, such as macroeconomic performance, the strength of formal institutions and quality of infrastructure and technology, but also on how their interactions provide a better understanding of the phenomenon. This study adopts a longitudinal approach with balanced panel data that includes the 19 largest economies in LAC from 2007 to 2017. We assess the contextual characteristics of the home country using the Global Competitiveness Index (GCI) from the World Economic Forum (WEF) and a Multi-Criteria Decision Analysis (MCDA) approach with the Technique for Order of Preference by Similarity to Ideal Solution (TOPSIS) to rank the largest economies in LAC according to several criteria included in each dimension. As noted by Kumar et al. (2021), one of the challenges associated with the MCDA method is the identification of the specific weights to the various parameters for which alternatives are to be ranked. To facilitate this decision, we follow the guidance of previous studies and combine the entropy weight and TOPSIS methods (Li et al. 2011; Mohammed et al. 2020; Kumar et al. 2021). Furthermore, considering that the individual domestic factors correspond to distinct categories and TOPSIS scores, we use panel data to observe the OFDI patterns over an extended period. It is essential to note that due to the phenomenon's complexity and by acknowledging other complementary factors (Shmueli 2010), rather than attempting to predict the OFDI intensity in the region, we propose an empirical explanatory model to test the assumptions.

Latin America and the Caribbean regions include 33 countries with unique and distinct characteristics in domestic market size, macroeconomic performance, land territory, infrastructure and technology and quality of formal institutions that govern social and business interactions. In this type of highly diversified context, our approach using entropy-based TOPSIS provides a more equitable way of accounting for the distinct characteristics of the countries, as it attributes the appropriate weight to the variables included in each dimension. Nevertheless, we consider that this study has limitations as it focuses exclusively on the home country determinants of OFDI in emerging markets. These limitations provide

fertile ground for future research, as studies can expand our model by including external factors that motivate the OFDI intensity by emerging market firms.

Our findings reveal that the home country factors highly condition the OFDI intensity in LAC. While we find a positive and significant association for the direct effects, the interaction among the various factors provides a complete representation of what drives the OFDI from the region. The interaction among these elements reveals that the relationship between macroeconomic performance and the OFDI intensity becomes more robust with the improvement in formal institutions and the quality and availability of infrastructure and technology. Thus, these factors can complement other important location-specific factors that support the increased internationalization of firms from the region via OFDI. Therefore, our results provide novel insights into what drives OFDI from this region. The results show that LAC firms depend on home country factors to sustain foreign investments, in contrast to previous studies that emphasize an escape internationalization behavior (i.e., emerging market companies intensify OFDI to escape the precarious conditions in their domestic markets).

Figure 1 illustrates the main steps of the study. Following the introduction, we review the literature and present the hypothesis in Section 2. In Section 3, we discuss the research method and the data. The results are introduced in Section 4, while Section 5 offers the conclusion.

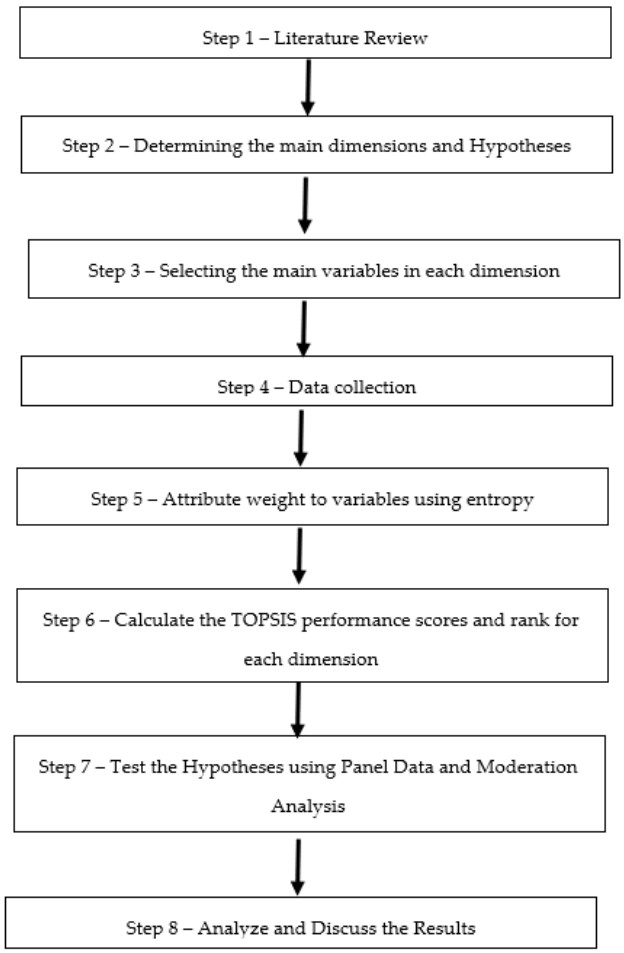

Figure 1. Main steps in the study.

2. Literature Review and Hypothesis

It is important to review the motivation behind the foreign expansion to discuss the determinants of OFDI intensity in LAC. According to Dunning (1988), FDI is motivated by the simultaneous advantages of ownership, location, and internalization (OLI). Locational

advantages are specific to a country or region and are challenging to transfer to another location. However, locational advantages cannot be restricted to a bundle of physical variables. They also include formal institutions and good governance that significantly contribute to economic efficiency and growth (Dunning and Lundan 2008). Thus, for emerging markets, the potential locational strengths related to the availability of natural resources and labor cost may be constrained by the significant weaknesses in domestic factors, including, but not limited to, institutional voids (Khanna and Palepu 2010), precarious infrastructure and limited access to technology (Cuervo-Cazurra et al. 2018).

Regardless of the level of development of an economy, the internationalization of firms follows similar patterns of ownership and location choices (Narula 2012). However, the "O" (ownership) advantages may be constrained by the "L" (locational) characteristics of the home countries. As latecomers, EMCs tend to rely more heavily (almost exclusively) on their home base to sustain their international expansion. Although the literature has focused mainly on host country factors that motivate FDI, the OFDI patterns of EMCs are likely to be "influenced by home country environment parameters, including economic growth, perceived institutional hardship, competitive pressure, and by their home country operational characteristics" (Luo and Wang 2012, p. 244). Recent studies, such as the study by Nugent and Lu (2021), find that Chinese OFDI is more prominent in sectors that struggle domestically due to overcapacity and weak institutions. In that sense, emerging market companies may deliberately adopt a springboard internationalization approach (Luo and Tung 2018) and, in that way, skip stages in the establishment chain as proposed in the Uppsala internationalization model (Johanson and Vahlne 1977). We advance this debate by focusing on the implications of three dimensions of the home country context: macroeconomic performance, the strength of formal institutions and the quality of infrastructure and technology.

2.1. Macroeconomic Performance

Macroeconomic performance can be measured using a broad set of variables: interest rate, inflation rate, GDP, GDP per capita, GDP growth, unemployment, imports, and exports (Lovell et al. 1995). Alon et al. (2012) found a positive association between home country macroeconomic characteristics and the OFDI intensity in China. An extensive study of 27 OECD countries by Alessandria and Mix (2021) indicates that decreases in trade barriers increase economic activity. Moreover, several studies show that the competitiveness of companies comes from the prevailing conditions in their home economy (Cantwell 1989; Lall 1992; Narula 2012). These domestic factors can affect the intensity and the diversification of the internationalization efforts of EMCs (Luo and Tung 2018; Tang and Buckley 2020). Since the early 1990s, reduced trade barriers and improved domestic macroeconomic conditions in the LAC region drew the attention of many multinational companies (Aguilera et al. 2017; Santiso 2013). The IFDI grew from USD 8.5 billion in 1990 to USD 104.7 billion in 1999, while the GDP more than doubled during the same period. Consumption expenditure increased from USD 750 billion in 1989 to USD 1.8 trillion in 2000, while annual inflation dropped from nearly 22% in 1990 to less than 3.5% in 1999 (World Bank 2021). However, the transition from a closed and protected economy to a more dynamic environment characterized by fierce competition from more experienced and efficient foreign companies pushed domestic firms to catch up by upgrading their capabilities and intensifying OFDIs towards more competitive regions (Fleury and Fleury 2011). Notably, the research indicates that EMCs are likely to rely almost exclusively on their domestic operations to support their investments abroad (Luo and Wang 2012). Thus, we argue that macroeconomic performance is positively associated with the OFDI intensity from LAC and propose the following hypothesis:

H1. *Home country macroeconomic performance is positively associated with the OFDI intensity from LAC.*

2.2. The Strength of Formal Institutions

The literature documents well the role of the external institutional environment in shaping the internationalization strategy of firms (Cuervo-Cazurra and Genc 2008; Cuervo-Cazurra 2012; Cuervo-Cazurra et al. 2018; Chidlow et al. 2021). Institutions represent "the rules of the game in a society or, more formally, ...the humanly devised constraints that shape human interaction" (North 1990, p. 3). The author distinguishes between formal (rules that human beings devise) and informal constraints (conventions and codes of behavior). Formal institutions can be classified as strong "if they support the voluntary exchange underpinning an effective market mechanism" and weak "if they fail to ensure effective markets or even undermine markets" (Meyer et al. 2009, p. 63). The role of institutions in shaping EMCs' global strategies becomes even more vital given that many of them, such as those in the LAC, have experienced significant reforms in the recent past (Cuervo-Cazurra et al. 2018). Nuruzzaman et al. (2020) found that domestic institutional support has a bigger impact on internationalization strategy compared to institutional hazard.

Studies show that institutional escapism occurs when the weak formal institutions in the home country drive EMCs to adopt an escape internationalization strategy, while institutional leverage leads to the leveraging of robust domestic institutions as a source of competitive advantage (Cuervo-Cazurra and Genc 2008; Cuervo-Cazurra and Narula 2015; Landau et al. 2016; Yan et al. 2018). EMCs seek to reduce their exposure to institutional voids in their home countries by intensifying OFDI towards more developed and stable host countries (Cuervo-Cazurra and Ramamurti 2014). Conversely, with the improvement of the quality of formal institutions in the home country, they are less inclined to take the additional costs associated with intensifying OFDIs. Several studies document such a willingness-to-escape phenomenon in several regions—e.g., China (Boisot and Meyer 2008; Gaur et al. 2018; Li et al. 2018), Latin America (Cuervo-Cazurra 2016), and South Africa (Barnard and Luiz 2018). To test these effects, we present the following hypothesis:

H2. *The strength of home country formal institutions is negatively associated with the OFDI intensity from LAC.*

2.3. The Quality of Infrastructure and Technology

The domestic infrastructure consists of technical components in a physical network required by firms to access and service their customers (Curien 2005). When it comes to the availability and access to technological resources, emerging market companies face disadvantages compared to their counterparts in developed nations. The internationalization of LAC firms may be constrained by the technological resources available in the home country, as the "technological effort is a critical determinant of productivity growth and international competitiveness" (OECD 2011, p. 3). For instance, logistic costs in LAC range from 18% to 40% of the product value, compared to the Organization for Economic Co-operation and Development (OECD) average of 8% (Guasch 2011). These disparities pose significant disadvantages to domestic firms limiting their ability to compete and expand outside the region. Although natural resources offer locational advantages in the LAC region, Cuervo-Cazurra et al. (2018) found that countries can instead produce endowments, such as technology, knowledge, or a capacity for innovation. Others, such as (Straub 2008), identified a positive and significant association between infrastructure and development outcomes in developing economies. Therefore, regardless of industry, the quality of infrastructure and technology is crucial to competitiveness and the international expansion of EMCs. To test these assumptions, we put forward the following hypothesis:

H3. *The quality of infrastructure and technology in domestic markets is positively associated with OFDI intensity from LAC.*

In addition to the direct effects, we also investigate how the quality of home country formal institutions and infrastructure and technology moderate the relationship between macroeconomic activity and the OFDI intensity in the LAC region.

2.4. Moderating Effects

Since EMCs are latecomers and enjoy advantageous geographical positions, they rely on their home base exclusively or to a greater extent to support their foreign expansion, compared to their counterparts in developed countries (Luo and Wang 2012). The internationalization of EMCs might be motivated and constrained by factors impacting the home country. Thus, the analysis of the determinants of the OFDI intensity in the LAC region required a study of various configurations of domestic elements, rather than limiting the effects of specific dimensions in isolation (Fainshmidt et al. 2020). We, therefore, posit that not one, but a configuration (combination) of the home country characteristics dictate the OFDI intensity in the LAC region.

2.4.1. Moderating Effects of Home Country Formal Institutions

International business research documents the role of the institutional environment in the internationalization of EMCs well. Khanna and Palepu (2010) state that weak institutions create "institutional gaps" that play a crucial role in the internationalization process in developing countries. Chan and Pattnaik (2021) propose a coevolutionary model that finds domestic firms are likely to use domestic institutional support, including political leverage, in their internationalization efforts. Institutional voids and inefficient enforcement mechanisms can discourage OFDI. In addition, institutional voids can prompt firms to adopt an escape strategy by intensifying their investments abroad in more supportive host countries (Cuervo-Cazurra and Narula 2015). EMCs are likely to seek foreign markets with better host market-supporting institutions (MSI) (Tang 2021), such as strong market intermediaries and market-based structures (Fuentelsaz et al. 2015), reduced bureaucracy (Meyer et al. 2009), and enhanced transparency (Orcos et al. 2018).

According to North (1990, p. 54), weak institutions in emerging markets represent "the inability of societies to develop effective, low-cost enforcement of contracts is the most important source of both historical stagnation and contemporary underdevelopment...". Such factors pose significant restrictions to efficient means of production and competitiveness of EMCs, pushing them to intensify their investments abroad to escape the precarious and highly volatile conditions in their domestic markets (Fleury and Fleury 2011; Cuervo-Cazurra and Narula 2015; Cuervo-Cazurra et al. 2018). Conversely, robust macroeconomic performance, and more supportive (stronger) home country institutions can reduce their incentive to increase their foreign investments as more domestic opportunities exist. To test these assumptions, we propose the following hypothesis:

H4. *Strong home country formal institutions negatively moderate the relationship between macroeconomic performance and the OFDI intensity in LAC.*

2.4.2. Quality of Infrastructure and Technology

Unlike formal institutions that negatively moderate the relationship between macroeconomic activity and the OFDI intensity in LAC, we propose that the quality of infrastructure and technology moderate such a relationship in the opposite direction. Studies show that emerging market firms internationalize to obtain strategic resources to compete with more efficient and experienced competitors (Cuervo-Cazurra and Narula 2015; Fleury and Fleury 2011). In fact, since the early 1990s, "Latin American enterprises, in the face of unprecedented competitive pressure from imports, found themselves undercapitalized and lacking the technology necessary to maintain their local market shares and enter international markets" (De Paula et al. 2002, p. 471). Infrastructure represents a set of technical components in a physical network required by firms to access and service their customers (Curien 2005). Evidence shows that technology plays a vital role in multinational firms' competitiveness and financial performance (Lu and Beamish 2001; De Paula et al. 2002). Moreover, although emerging market firms in low technology industries can compete abroad due to the privileged access to local natural resources endowments, their counterparts in the technology sector suffer due to the low quality of technology in the home country. Thus, technology is critical to internationalization

(Angulo-Ruiz et al. 2019) and cross-border integration of emerging market companies (Chun et al. 2020). Cuervo-Cazurra et al. (2018, p. 3) posit that the competitiveness of countries and regions can be enhanced, given that "countries can 'create' endowments (technology, knowledge, or a capacity for innovation) rather than rely solely on the natural endowment". Infrastructure and technology support competition and allow firms to connect and coordinate activities across national borders. In that sense, the quality of infrastructure and technology and strong macroeconomic performance in LAC create favourable conditions for firms from the region to strengthen their positions by intensifying foreign investments to acquire strategic assets in more competitive areas. Thus, infrastructure and technology can complement strong macroeconomic performance when investigating the OFDI intensity. Therefore, we argue that the quality of infrastructure and technology in LAC moderates positively the relationship between macroeconomic performance and OFDI intensity. To test these assumptions, we present the following hypothesis:

H5. *The quality of infrastructure and technology positively moderates the relationship between macroeconomic performance and OFDI intensity in LAC.*

3. Method and Data

3.1. Sample and Data

During the 1990s, market-seeking objectives (investments) characterized the international expansion strategy of LAC firms. To secure and strengthen their competitive position, they started to focus on strategic and efficiency-seeking investments in more distant regions in the following decade (Fleury and Fleury 2011). We adopted a panel data approach to provide a more robust assessment of the implication of contextual conditions in the home country and the OFDI patterns in the region. By including the 18 largest economies in the region, our sample provides a relevant assessment of the OFDI patterns in LAC. The countries included are Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, El Salvador, Guatemala, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, Trinidad and Tobago, and Uruguay, and the sample data used is for the period 2007 to 2016. We used secondary data from the Global Competitiveness Index (GCI) the World Economic Forum (WEF). The GCI combines 114 indicators of productivity and the long-term prosperity of a country. We focused on how the macroeconomic environment, institutions, infrastructure, and technological readiness dimensions (i.e., pillars) affect the OFDI intensity in LAC. Furthermore, as infrastructure and technological readiness pillars relate to the physical characteristics of the home country environment that allow LAC firms to connect and integrate their local and foreign operations and assets, we combined both dimensions into a category named infrastructure and technology. The indicators are then sub-grouped, as depicted in Table 1.

Table 1. TOPSIS variables.

TOPSIS	Pillars	Variables
Institutions	Institutions	Property rights, intellectual property protection; diversion of public funds; public trust in politicians; irregular payments and bribes; judicial independence; favouritism in decisions of government officials; wastefulness of government spending; burden of government regulation; efficiency of the legal framework in challenging regulations; transparency of government policymaking; business costs of terrorism;, business costs of crime and violence; organized crime; reliability of police services; ethical behavior of firms; strength of auditing and reporting standards; efficacy of corporate boards; and strength of investor protection.
Infrastructure and technology	Infrastructure	Quality of overall infrastructure; quality of roads; quality of port infrastructure; quality of air transport infrastructure; available airline seat km/week; millions; quality of electricity supply; and fixed telephone lines/100 pop. and mobile telephone subscriptions/100 pop.
	Technological readiness	Availability of latest technologies; firm-level technology absorption; FDI and technology transfer; technological adoption; individuals using the Internet; fixed broadband Internet subscriptions/100 pop.; international Internet bandwidth kb/s per user; mobile broadband subscriptions/100 pop.; and ICT use.
Macroeconomic performance	Macroeconomic environment	Government budget balance (% of GDP); gross national savings (% of GDP); and annual inflation and government debt (% of GDP).

3.2. TOPSIS and Foreign Direct Investment

The determinants of foreign direct investment are a complex phenomenon involving several factors. TOPSIS has been used in international business literature to investigate the country's attractiveness as a destination for FDI. It provides a viable alternative for the analysis in the presence of multiple, usually conflicting, attributes (Madi et al. 2016). Previous studies used this method to verify the FDI attractiveness in the Association of Southeast Asian Nations (ASEAN) (Karimi et al. 2010) and Central and Eastern European (CEE) countries (Paul et al. 2014). More recently, Çalık et al. (2019) employed this technique in conjunction with the analytic hierarchy process (AHP) to investigate the FDI attractiveness in Turkey. Kumar et al. (2021) note that this method faces a key challenge of formulating specific weights to the various parameters to rank the alternatives. A viable option to address this issue is to combine the entropy weight method with TOPSIS (Li et al. 2011; Mohammed et al. 2020; Kumar et al. 2021). Such an approach has been applied extensively in past studies, for example, by Salehi et al. (2020), who used it to investigate crisis management systems in petrochemical industries. Similarly, Sun et al. (2017) used the entropy-based TOPSIS to evaluate the impact of green technology innovation on the ecological–economic efficiency of strategic emerging industries. Our study employed the entropy-based TOPSIS to rank LAC countries in macroeconomic performance, the strength of formal institutions, and infrastructure and technology quality. Furthermore, we used multiple regression and moderation analysis to test our hypotheses.

3.3. Empirical Model—The Determinants of OFDIs in LAC

The model in Figure 2 presents the determinants of OFDI in LAC. The entropy method is used to calculate each variable's weight (importance), followed by TOPSIS to rank the LAC countries in each of the three dimensions. The model indicates that the quality of formal domestic institutions, economic performance, infrastructure and technology provide important incentives to explain the OFDI intensity. Furthermore, the quality of infrastructure and technology moderates positively, while the quality of formal institutions negatively moderates the relationship between macroeconomic performance and the OFDI intensity. We tested these assumptions using multiple regression and moderation analysis.

3.4. Entropy Weight Method for TOPSIS

Due to the multi-criteria nature of dimensions, we adopted a Multi-Criteria Decision Analysis (MCDA) approach using the TOPSIS method. The MCDA method has been extensively used and modified in literature (See Mukhametzyanov 2021). According to Madi et al. (2016), MCDA consists of two basic approaches: Multiple Attribute Decision Making (MADM) and Multiple Objective Decision Making (MODM). TOPSIS falls in the MADM category, which refers to making a selection in the presence of multiple, usually conflicting, attributes. Hwang and Yoon (1981) introduced the TOPSIS method to facilitate comparing and ranking alternatives (individuals) based on the perceived weight attributed by the decision-maker to a set of criteria relying on two contrasting choices (i.e., the best and worst possible scenarios). TOPSIS ranks the alternatives (i.e., countries in this paper) that simultaneously present the shortest distance from the positive ideal solution (best option) and the farthest distance from the negative (worst) solution (Hwang and Yoon 1981). This method has been used in several studies, for example, by Yorulmaz et al. (2021), who used this method to rank development levels by provinces in Turkey. Entropy considers the amount of information in each criterion (Cover and Thomas 1991) and can be used with TOPSIS to establish the specific weight for the variable. According to the information theory, "the entropy weight represents useful information of the evaluation index. Therefore, the bigger the entropy weight of the index is, the more useful information of the index is" (Li et al. 2011, p. 2087). In that sense, entropy becomes a valuable tool for helping managers decide on the weight of the criteria included in the MCDA approach (Kumar et al. 2021). We used an eight-step method to compute the TOPSIS performance scores and test the hypotheses.

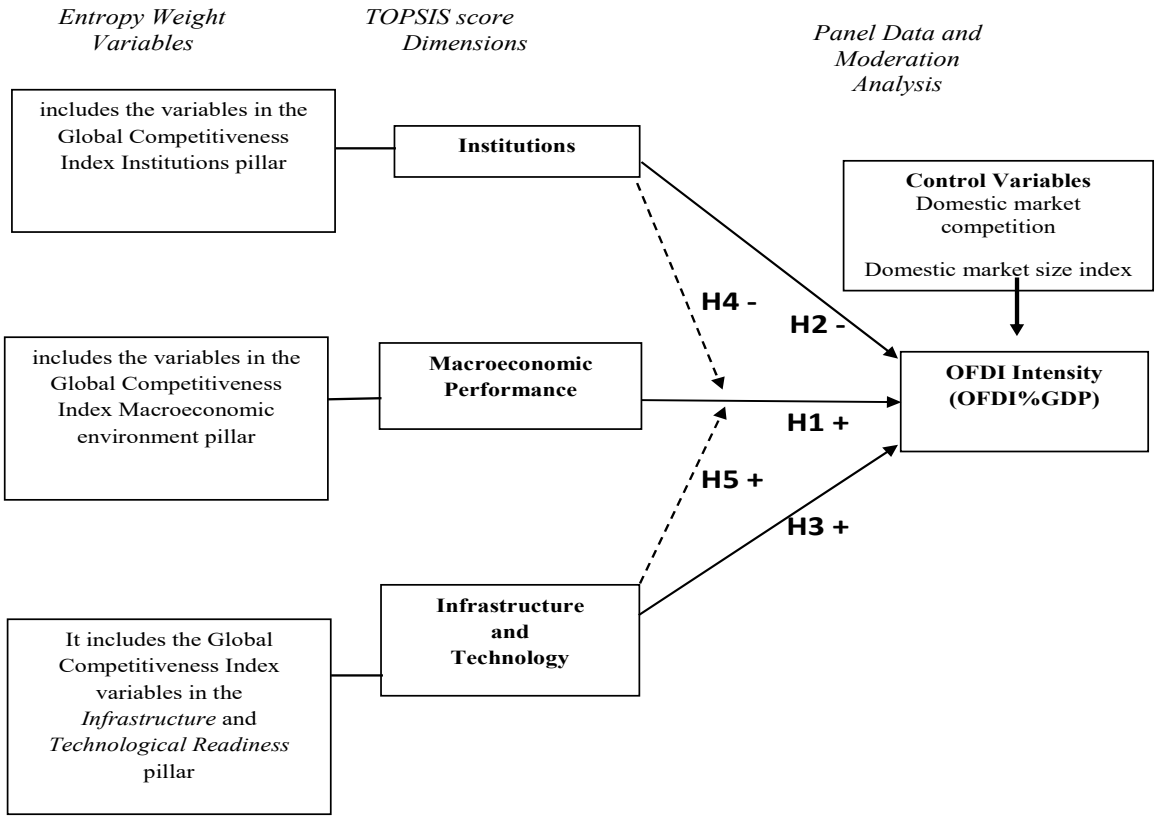

Figure 2. An entropy-based TOPSIS and panel data approach for the determinants of the OFDI intensity in LAC.

Step 1—The Structure of the Decision Matrix

The proposed methodology is as follows: first, we formulated the following decision matrix: A represents the countries, C represents the different criteria, and x is the performance score for the country in the criterion.

$$X = \begin{array}{c} \\ A_1 \\ A_2 \\ \vdots \\ A_1 \end{array} \begin{array}{c} \begin{array}{cccc} C_1 & C_2 & \dots & C_n \end{array} \\ \begin{bmatrix} x_{1,1} & x_{1,2} & \dots & x_{1,n} \\ x_{2,1} & x_{2,2} & \dots & x_{2,n} \\ \vdots & \vdots & \ddots & \vdots \\ x_{m,1} & x_{m,2} & \dots & x_{m,n} \end{bmatrix} \end{array} \quad (1)$$

where $X = [x_{ij}]$mxn represents the decision matrix for our study; A_1, A_2, ..., A_m represents the countries included in the study; C_1, C_2, C_3, ..., C_n represents the specific criteria of comparison; and $x_{1,1}$ are the performance score (i.e., value) for country A_1 in criteria C_1.

Step 2—The Normalized Decision Matrix

Next, we normalized the data in the decision matrix X. This is necessary when dealing with different scales and variation ranges, as normalizing the data makes all criteria equivalent and in the same format. The normalized decision matrix $P = [p_{ij}]$mxn can be represented as:

$$P = \begin{array}{c} \\ A_1 \\ A_2 \\ \vdots \\ A_m \end{array} \begin{array}{c} \begin{array}{cccc} C_1 & C_2 & \dots & C_n \end{array} \\ \begin{bmatrix} p_{1,1} & p_{1,2} & \dots & p_{1,n} \\ p_{2,1} & p_{2,2} & \dots & p_{2,n} \\ \vdots & \vdots & \ddots & \vdots \\ p_{m,1} & p_{m,2} & \dots & p_{m,n} \end{bmatrix} \end{array} \quad (2)$$

$$p_{ij} = \frac{x_{ij}}{\sum_{i=1}^{m} x^2{}_{ij}},\ i = 1, 2, \ldots,\ m; j = 1,\ 2,\ \ldots,\ n \tag{3}$$

Step 3—The Weighted Decision Matrix Using Entropy

After normalizing the decision matrix, we calculated the entropy value (e_j) for each criterion. In the current literature, the entropy is applied to the normalized value, p_{ij} . Using the normalized values, one can calculate the entropy using the following equation:

$$e_j = \frac{-\sum_{i=1}^{m} p_{ij}\ \ln p_{ij}}{\ln m},\ j = 1,\ 2,\ \ldots,\ n \tag{4}$$

However, this approach can only be applied to the data that has a categorical type of criteria and the value of x_{ij} is the frequency value. In this work, we use the numerical criteria and the relativity frequency, as an approximation to probability approach is no longer applicable. For each criterion, we approximated the density function using a histogram of the observations $f(x_{ij})$, which can be computed as follows:

$$e_j = \frac{-\sum_{i=1}^{m} f(x_{ij})\ \ln f(x_{ij})}{\ln w},\ j = 1,\ 2,\ \ldots,\ n, \tag{5}$$

where w is the optimal bandwidth used to compute the histogram $f(x_{ij})$. This may be treated as an additional processing step on the decision matrix.

The entropy values are used to calculate the weights (w_j) for each criterion according to the following equation:

$$w_j = \frac{1 - e_j}{\sum_{j=1}^{n} 1 - e_j},\ j = 1,\ 2, \ldots,\ n \tag{6}$$

After estimating the weighted decision matrix V, we can calculate the weighted scores by multiplying the normalized scores (*pij*) by the weight of each criterion (w_j).

$$V = \begin{array}{c} \\ A_1 \\ A_2 \\ \vdots \\ A_m \end{array} \begin{array}{c} \begin{array}{cccc} C_1 & C_2 & \ldots & C_n \end{array} \\ \begin{bmatrix} v_{1,1} & v_{1,2} & \ldots & v_{1,n} \\ v_{2,1} & v_{2,2} & \ldots & v_{2,n} \\ \vdots & \vdots & \ddots & \vdots \\ v_{m,1} & v_{m,2} & \ldots & v_{m,n} \end{bmatrix} \end{array} \tag{7}$$

$$v_{ij} = r_{ij}\ .\ w_j \tag{8}$$

Step 4—Determining the Positive and Negative Ideal Solutions

The next step is to compute the two benchmarks for each criterion, commonly referred to as the ideal positive and negative solutions. The ideal positive solution includes the optimal value for each criterion, whereas the negative ideal solution includes the worst values for each attribute.

$$V^+ = \left(V_1^+,\ V_2^+, \ldots V_j^+, \ldots, V_n^+\right) \tag{9}$$

$$V^- = \left(V_1^-,\ V_2^-, \ldots V_j^-, \ldots, V_n^-\right) \tag{10}$$

The ideal positive and the ideal negative values for each attribute is represented as:

$$V_j^+ = \left| \begin{array}{l} \text{The maximum values } (v_{ij}) \text{ for the benefit attributes} \\ \text{The minimum values } (v_{ij}) \text{ for the cost attributes} \end{array} \right.$$

$$V_j^- = \left| \begin{array}{l} \text{The minimum values } (v_{ij}) \text{ for the benefit attributes} \\ \text{The maximum values } (v_{ij}) \text{ for the cost attributes} \end{array} \right.$$

Step 5—Calculating the Distances

After identifying the ideal solutions, we computed the distances for every feasible solution to the positive and negative benchmarks. The distances are calculated as follows:

$$S_i^+ = \sqrt{\sum_{j=1}^{n} (v_{ij} - v_j^+)^2}\ , \ (i = 1,\ 2, \ldots, m;\ j = 1, 2, \ldots, n) \tag{11}$$

$$S_i^- = \sqrt{\sum_{j=1}^{n} (v_{ij} - v_j^-)^2}\ , \ (i = 1,\ 2, \ldots, m;\ j = 1, 2, \ldots, n) \tag{12}$$

Step 6—The Relative Proximity to the Ideal Solution

The individuals are ranked according to the relative proximity to calculate the proximity to the ideal solution—the greater the value, the better the individual rank. We compute the relative proximity R (i.e., performance scores) as follows:

$$R_i = \frac{S_i^-}{\left(S_i^+ + S_i^-\right)},\ (0 \le R_i \le 1;\ i = 1,\ 2, \ldots, m) \tag{13}$$

Step 7—Longitudinal Approach with Panel Data

Panel data combines cross-sections with time series (Baltagi and Raj 1992; Baltagi 2008). It allows for the evaluation of the relationship between several variables by following the same individuals (e.g., firms, countries, and companies) over a particular period. There are several advantages from using panel data that are particularly relevant to this study: control for individual heterogeneity; more informative data; more variability; less collinearity among the variables; more degrees of freedom and more efficiency; improved ability to study the dynamics of adjustment; improved ability to identify and measure the effects that are simply not detectable in pure cross-section or pure time-series data; and they allow us to construct and test more complicated behavioral models than pure cross-section or time-series data (Baltagi 2008; Hsiao 2003; Klevmarken 1989). The tests use the generalized least square (GLS) method, extensively used in the past empirical studies with panel data (Bertschek 1995; Kumar and Aggarwal 2005). Our decision to use the GLS with a random effect is based on the results of the Hausman test.

Step 8—Moderation Analysis

Moderation analysis can verify how changes in the value of the moderator variables (institutions and infrastructure and technology) affect the intensity (size of the coefficient) of the main relationship under investigation (i.e., the relationship between the macroeconomic dimension and OFDI intensity) and the effect on the slope of the regression line. According to Hayes (2013, p. 231), tests for the moderating effects can be performed as "if M is quantitative, one might use the mean and + and − one standard deviation, or various percentiles in the distribution". Table 2 summarizes the variables and the techniques employed to operationalize the proposed models and test the various hypotheses.

In addition, the hypotheses developed for this study include domestic competition and domestic market size as covariates in the regression model. Studies have shown that restrictions in the domestic market, mainly related to small market size and intense competition, can push firms to intensify their investments abroad (Johanson and Vahlne 1977; Cuervo-Cazurra et al. 2018). Table 3 presents the descriptive statistics and correlation matrix.

Table 2. Hypotheses, variables, dimensions, data sources, and techniques.

Hypotheses and Signal	Dimension	Variable Name	Variables	Techniques	Source
Dependent variable	OFDI intensity	OFDI	OFDI/GDP	OFDI Divided by GDP	The World Bank
H1 +	Macroeconomic	Macroeconomic	Global competitiveness index macroeconomic pillar variables	TOPSIS score using entropy for determining the weight of each variable	Global Competitiveness Index from the World Economic Forum
H2 −	Strength (quality) of home country formal institutional	Institutions	Global competitiveness index institutions pillar variables	TOPSIS score entropy for determining the weight of each variable	Global Competitiveness Index from the World Economic Forum
H3 +	Quality of infrastructure and technology in the home country	Infrastructure and technology	Global competitiveness index infrastructure and technological readiness pillar variables	TOPSIS score using entropy for determining the weight of each variable	Global Competitiveness Index from the World Economic Forum
Moderation: Characteristics of the moderation (i.e., positive or negative) are verified by adding and subtracting 1 std. deviation to the moderator variable. The interaction terms are created by multiplying the mean-centered values of the 1st order components.					
H4 −	Moderation of home country institutions on economic performance	Institutions × macroeconomic	Calculated by multiplying the institutional variable by the macroeconomic variable	The characteristics of moderation are tested by adding and subtracting 1 std. deviation to the moderator variable	Global Competitiveness Index from the World Economic Forum
H5 +	Moderation infrastructure and access to technology on macroeconomic performance	Infrastructure and technology × macroeconomic	Calculated by multiplying the infrastructure and technology variable by the macroeconomic variable	The characteristics of moderation are tested by adding and subtracting 1 std. deviation to the moderator variable	Global Competitiveness Index from the World Economic Forum

Table 3. Descriptive statistics and correlation matrix.

Variable	Mean	Median	S.D.	Min.	Max.	1	2	3	4	5	6
OFDI	0.825	0.419	1.48	−3.58	8.10	1.0000	0.5987	0.3158	0.0270	0.3951	0.1736
Institutions	0.437	0.410	0.157	0.224	0.908		1.0000	0.4441	0.1078	0.5358	−0.0554
Infrastructure and technology	0.332	0.311	0.151	0.0757	0.721			1.0000	0.0114	0.1048	0.5953
Macroeconomic	0.384	0.371	0.116	0.127	0.812				1.0000	−0.1131	−0.1005
Domestic competition	4.05	4.07	0.461	2.81	4.99					1.0000	−0.2384
Domestic market size index	3.60	3.16	0.966	2.28	5.84						1.0000

4. Results

We used the variance inflation factors (VIF) estimates to rule out collinearity issues. The test results find all VIFs lower than 2.5, below the threshold of 5, which indicates the absence of multicollinearity, as per Rogerson (2001). To add robustness to our results, we used bootstrapping, a resampling technique for estimating standard errors from small samples (Efron 1979). According to this method, "the original sample of size n is treated as a miniature representation of the population originally sampled. Observations in this sample

are then 'resampled' with replacement, and some statistics of interest are calculated in the new sample of size n constructed through this resampling process" (Hayes 2013, p. 106). We tested with 10 bootstraps, as increasing the number of resamples beyond this point can lead to negligible improvements in the estimation of standard errors. As a robustness check, we compared the model results from the original sample to the results from the bootstrapping, and all tests yielded consistent results. To select an appropriate estimation method, we used the Hausman test. A *p*-value lower than 0.05 for the Hausman test for all of the empirical arrangements in Table 4, points to the generalized least square (GLS) random effect estimation method. This method has been extensively used in literature with panel data (Kumar and Aggarwal 2005; Hsu et al. 2015).

Table 4. The determinants of OFDIs in Latin America. Random-effects (GLS) estimates. Dependent variable: OFDI.

				Hypothesis H4			**Hypothesis H5**		
	Macroecon	**Macroecon + Institutions**	**Macroecon + Infrastructure and Technology**	**MODERATION Moderation Institutions on Econ–OFDI Relationship**			**MODERATION Moderation Infrastructure and Technology on Econ–OFDI Relationship**		
				−1 std. dev	**Actual Value**	**+1 std. dev**	**−1 std. dev**	**Actual Value**	**+1 std. dev**
const	−7.631 *** (0.393) [0.000]	−5.108 *** (0.237) [0.000]	−6.930 *** (0.430) [0.000]	−5.561 *** (0.416) [0.000]	−6.805 *** (0.468) [0.000]	−8.050 *** (0.525) [0.000]	−7.080 *** (0.532) [0.000]	−7.581 *** (0.581) [0.000]	−8.082 *** (0.635) [0.000]
Hypothesis H1: macroeconomic TOPSIS score	1.422 *** (0.123) [0.000]	0.215 * (0.124) [0.084]	1.208 *** (0.131) [0.000]	2.633 *** (0.405) [0.000]	3.908 *** (0.585) [0.000]	5.182 *** (0.770) [0.000]	2.013 *** (0.284) [0.000]	2.721 *** (0.469) [0.000]	3.429 *** (0.665) [0.000]
Domestic competition	1.543 *** (0.071) [0.000]	0.581 *** (0.044) [0.000]	1.407 *** (0.077) [0.000]	0.663 *** (0.057) [0.000]	0.663 *** (0.057) [0.000]	0.663 *** (0.057) [0.000]	1.416 *** (0.079) [0.000]	1.416 *** (0.079) [0.000]	1.416 *** (0.079) [0.000]
Domestic market size index	0.459 *** (0.028) [0.000]	0.379 *** (0.018) [0.000]	0.303 *** (0.040) [0.000]	0.375 *** (0.019) [0.000]	0.375 *** (0.019) [0.000]	0.375 *** (0.019) [0.000]	0.310 *** (0.041) [0.000]	0.310 *** (0.041) [0.000]	0.310 *** (0.041) [0.000]
Hypothesis H2: Formal institutions TOPSIS score		4.867 *** (0.227) [0.000]			7.935 *** (0.438) [0.000]				
Formal institutions TOPSIS score −1 std. dev				7.935 *** (0.438) [0.000]					
Formal institutions TOPSIS score +1 std. dev						7.935 *** (0.438) [0.000]			
Hypothesis H3: Infrastructure and technology TOPSIS score			1.491 *** (0.151) [0.000]					3.315 *** (0.470) [0.000]	
Infrastructure and technology TOPSIS score −1 std. dev							3.315 *** (0.470) [0.000]		
Infrastructure and technology TOPSIS score +1 std. dev									3.315 *** (0.470) [0.000]
Macroeconomic X formal institutions					−8.127 *** (1.213) [0.000]				
Macroeconomic X infrastructure and technology								−4.687 *** (1.340) [0.000]	
Macroeconomic X formal institutions −1 std. dev.				−8.127 *** (1.213) [0.000]					
Macroeconomic X formal institutions +1 std. dev.						−8.127 *** (1.213) [0.000]			
Macroeconomic X infrastructure and technology −1 std. dev.							−4.687 *** (1.340) [0.000]		
Macroeconomic X infrastructure and technology +1 std. dev.									−4.687 *** (1.340) [0.000]
n	1800	1800	1800	1800	1800	1800	1800	1800	1800
lnL	-3.01×10^3	-2.77×10^3	-3×10^3	-2.76×10^3	-2.76×10^3	-2.76×10^3	-2.99×10^3	-2.99×10^3	-2.99×10^3
R-squared (corr(y,yhat)^2)	0.244	0.422	0.257	0.431	0.431	0.431	0.259	0.259	0.259
p-value	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

* $p < 0.10$; *** $p < 0.01$.

The results show a determination coefficient (R-squared) of 0.244 for the model, including the macroeconomic performance variable and the covariates, domestic market

competition, and size of the domestic market—these three variables explain 24.4% of the OFDI intensity in LAC (Table 4). These results support hypothesis H1, as there is a positive and statistically significant association between the macroeconomic performance and the OFDI intensity. Our findings are consistent with previous studies (Cantwell 1989; Lall 1992; Narula 2012; Fleury and Fleury 2011) and show that the internationalization of LAC firms is conditioned by the macroeconomic performance of countries in the region. Moreover, domestic competition and the size of the domestic market have a positive effect on the OFDI intensity.

When we include the variables estimated using the TOPSIS score for formal institutions, the model's explanatory capacity improves significantly from 24.4% to 42.2% (R-squared = 0.422). However, the positive and statistically significant association between the quality of formal institutions and the OFDI intensity in LAC refutes hypothesis H2. Thus, the OFDI patterns of LAC firms do not support the theoretical assumptions of the escape internationalization behavior (Cuervo-Cazurra and Narula 2015). The positive association between the quality of formal institutions in the home country and the OFDI intensity shows that institutional voids are a barrier rather than a facilitator to the internationalization efforts of firms. When considering the implications of the quality of infrastructure and technology to the OFDI intensity from LAC, our results support hypothesis H3. This finding is consistent with previous studies (Curien 2005), reinforcing the critical role of infrastructure, and the technical and technological factors in promoting the internationalization of firms via FDI.

Furthermore, the covariate results show positive and significant effects for domestic market size as well as domestic competition on the OFDI intensity. It suggests that while a large domestic market can help LAC firms to generate the resources needed to support their internationalization via OFDI, high domestic competition can push these firms to seek opportunities in foreign markets.

4.1. The Moderating Effects of Formal Institutions

The test results for hypothesis H4 are presented in Table 4, followed by the graphical representation of the effects (i.e., change in the slope of the regression line) corresponding to the changes in the quality of formal institutions in the relationship between macroeconomic performance and OFDI intensity (Figure 3). The results show that the quality of formal institutions in the LAC countries moderates positively the relationship between macroeconomic performance and the OFDI intensity (Table 4). The positive moderation is verified in the change of the coefficient of the macroeconomic variable equaling 2.633 (p-value < 0.01) when 1 standard deviation is subtracted from the formal institutions variable. The value increases to 5.182 (p-value < 0.01) when 1 std. deviation is added to the formal institutions variable. In addition to the change in the effect's size, the model's explanatory capacity (adjusted R-squared) increases with the introduction of interaction terms. These findings indicate that strong formal institutions allow LAC firms to take advantage of their home countries' strong macroeconomic performance by intensifying their internationalization via OFDI. Thus, although EMCs may intensify their OFDIs to escape the precarious conditions in their home countries (e.g., escape internationalization motive), they are dependent on supportive domestic conditions for their internationalization efforts. Figure 3 illustrates the positive moderating effects of formal institutions on the macroeconomic performance and OFDI intensity relationship. The variation in the slope of the regression line highlights how changes in formal institutions positively moderate the relationship between macroeconomic performance and the OFDI intensity in LAC. The slope of the dotted line (1 std. deviation subtracted from the moderator variable) shows that when formal institutions in the home country improve, the OFDI intensity from LAC increases.

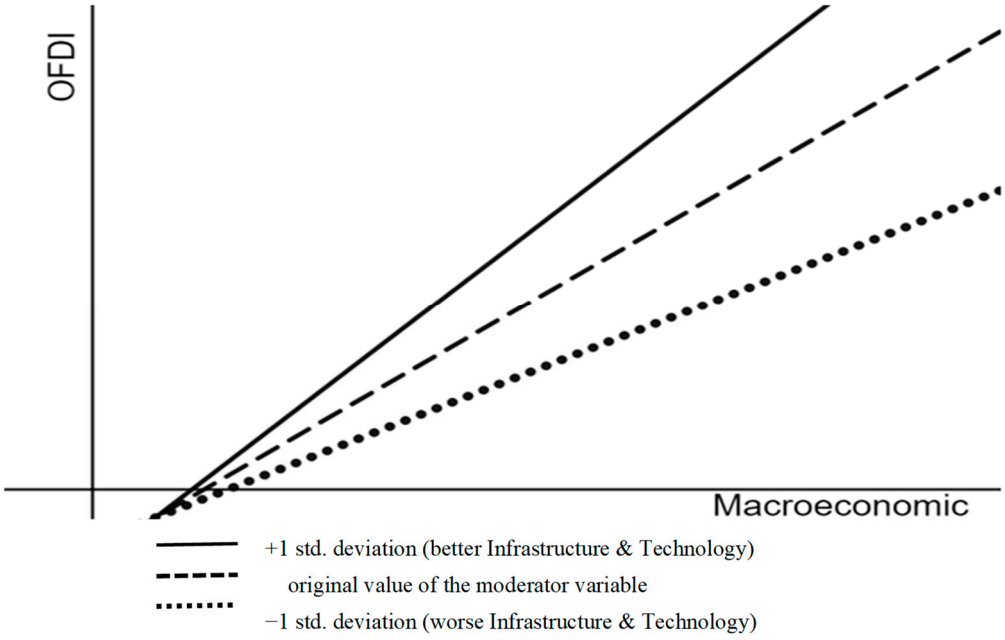

Figure 3. The positive moderating effects of home country formal institutions on the relationship between the macroeconomic performance and OFDI intensity from LAC.

4.2. The Moderating Effects of Infrastructure and Technology

Regarding the moderating effects of infrastructure and technology, the results reveal a positive moderating effect that supports hypothesis H5. The change in the coefficient for the relationship between macroeconomic performance and the OFDI intensity highlights positive moderation, i.e., it increases as the quality of infrastructure and technology improves. The moderation tests show that when infrastructure and technology worsen (i.e., is subtracted by 1 std. deviation), the coefficient for the relationship between macroeconomic performance and OFDI intensity is 2.013 and statistically significant (p-value < 0.01). The tests with the mean value for the moderator variable show that the coefficient for the main relationship remains significant and increases to 2.721 (p-value < 0.01). Finally, when 1 std. deviation is added to the moderator variable, the coefficient for the main relationship increases to 3.429 (p-value < 0.01). Therefore, the changes correspond to adding and subtracting 1 std. deviation to the quality of infrastructure and technology leads to an approximate increase of 70% in the relationship between the macroeconomic performance and LAC's OFDI intensity. Figure 4 displays the slope of the regression line corresponding to changes in the moderator variable. The slope of the solid line shows that when the quality of infrastructure and technology improves, the OFDI from LAC increases. In contrast, the dotted line indicates that the OFDI intensity in the region is lower in the case of less developed infrastructure and technology. These findings reveal that infrastructure and technology play an essential role in the internationalization of LAC firms via OFDI.

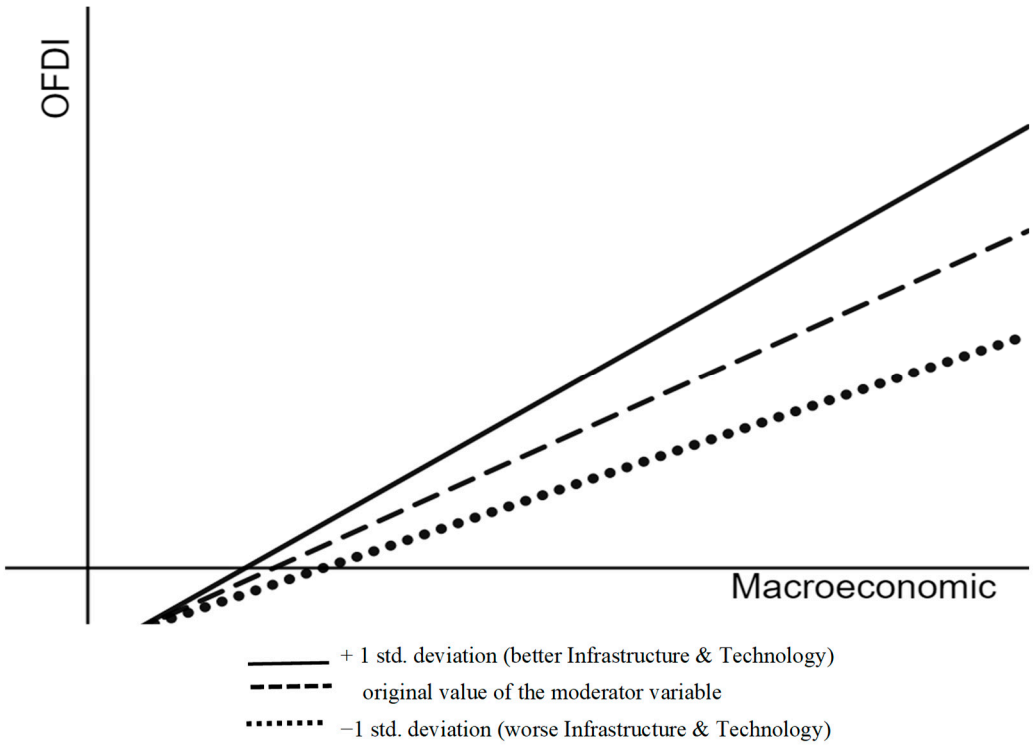

Figure 4. The positive moderating effects of infrastructure and technology on the macroeconomic performance and OFDI intensity relationship in LAC.

4.3. Sensitivity Analysis

We also conducted a sensitivity analysis for the variables we considered for both models, with and without interactions between macroeconomic and formal institutions and macroeconomic and infrastructure and technology. We aimed to investigate what variable has a more significant impact on the OFDI and the sensitivity of OFDI with the change of each variable when holding other variables constant. The model outputs and their comparison in terms of model coefficients, statistical significance and the associated R squares are displayed in Figure 1. We observe that the inclusion of interaction terms has a significant impact on the model coefficients, suggesting that the OFDIs are sensitive to the changes of all variables when holding other variables constant. The impacts on OFDI interact among the variables. However, Model 1 (the results are reported in the second column of Table 5) did not capture the significant impact of the macroeconomy, while Model 2 (the results are reported in the second column of Table 5) performs much better for both the model predictive power and significant impact from the included variables. Among all the variables we considered in the study, the institutions variable is considered as the most influential and has a significant impact by the covariates: domestic competition and domestic market size. This can be seen from the results presented in Figures 5 and 6. For instance, a 20% increase in TOPSIS scores of the institutions leads to a more than 0.5 increase in OFDIs. The macroeconomic is the least influential variable in explaining the variation of OFDIs. However, the impact from the macroeconomic dimension is also statistically significant based on the results we observe in Figure 6.

Table 5. The regression outputs summary and comparison for the models considered, in terms of model coefficients, their associated 95% confidence intervals, significancy of coefficients, and level of predictive power of the models.

	Dependent Variable: OFDI	
	Model (1)	Model (2)
Formal institutions TOPSIS score	5.714 *** (5.321, 6.106)	10.304 *** (9.020, 11.588)
Infrastructure and technology TOPSIS score	−1.848 *** (−2.292, −1.405)	−4.659 *** (−6.170, −3.148)
Macroeconomic TOPSIS score	0.270 (−0.117, 0.658)	3.397 *** (2.169, 4.624)
Domestic competition	0.582 *** (0.464, 0.700)	0.679 *** (0.559, 0.798)
Domestic market size index	0.560 *** (0.496, 0.624)	0.546 *** (0.483, 0.610)
Macroeconomic X formal institutions		−11.965 *** (−15.143, −8.787)
Macroeconomic X infrastructure and technology		7.117 *** (3.460, 10.775)
Constant	−5.538 *** (−6.090, −4.985)	−7.030 *** (−7.791, −6.269)
Observations	1800	1800
R2	0.437	0.449
Adjusted R2	0.435	0.447

*** $p < 0.01$.

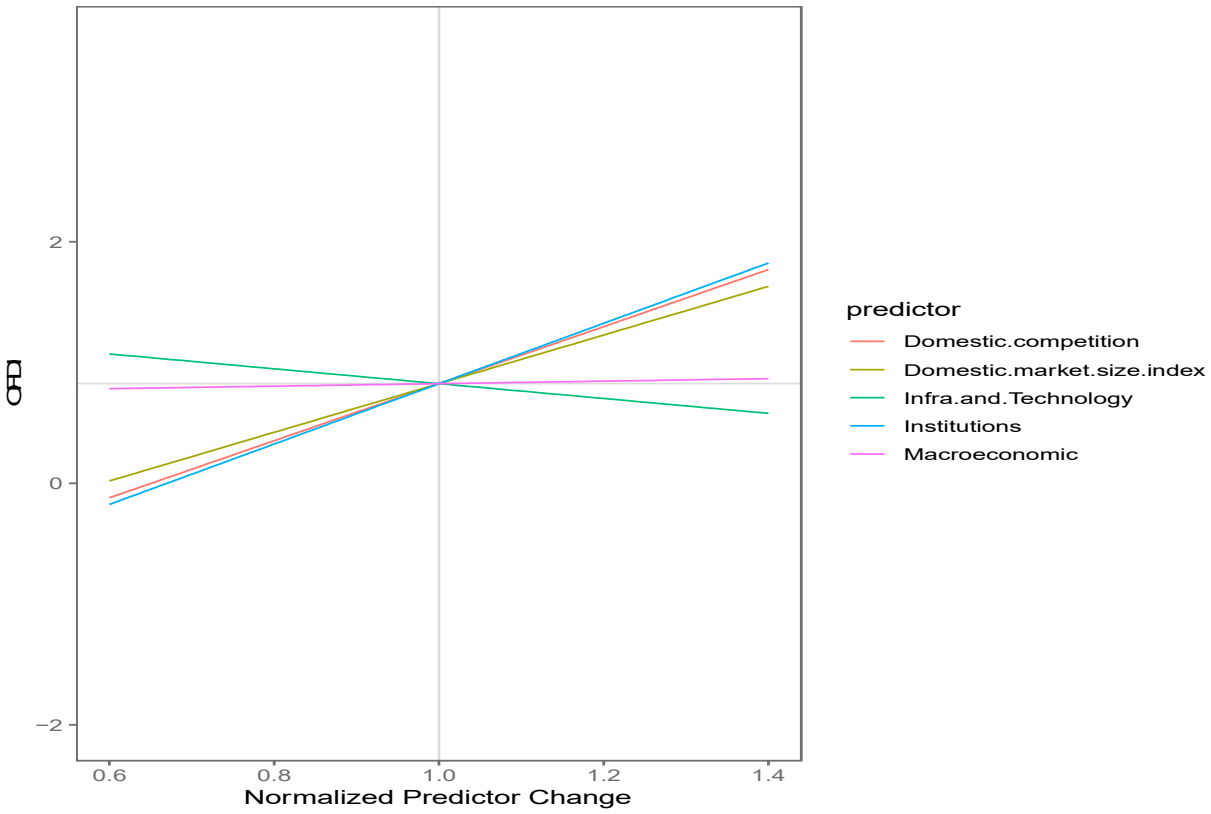

Figure 5. Sensitivity analysis for model (1) with a 90% confidence interval constructed for each predictor.

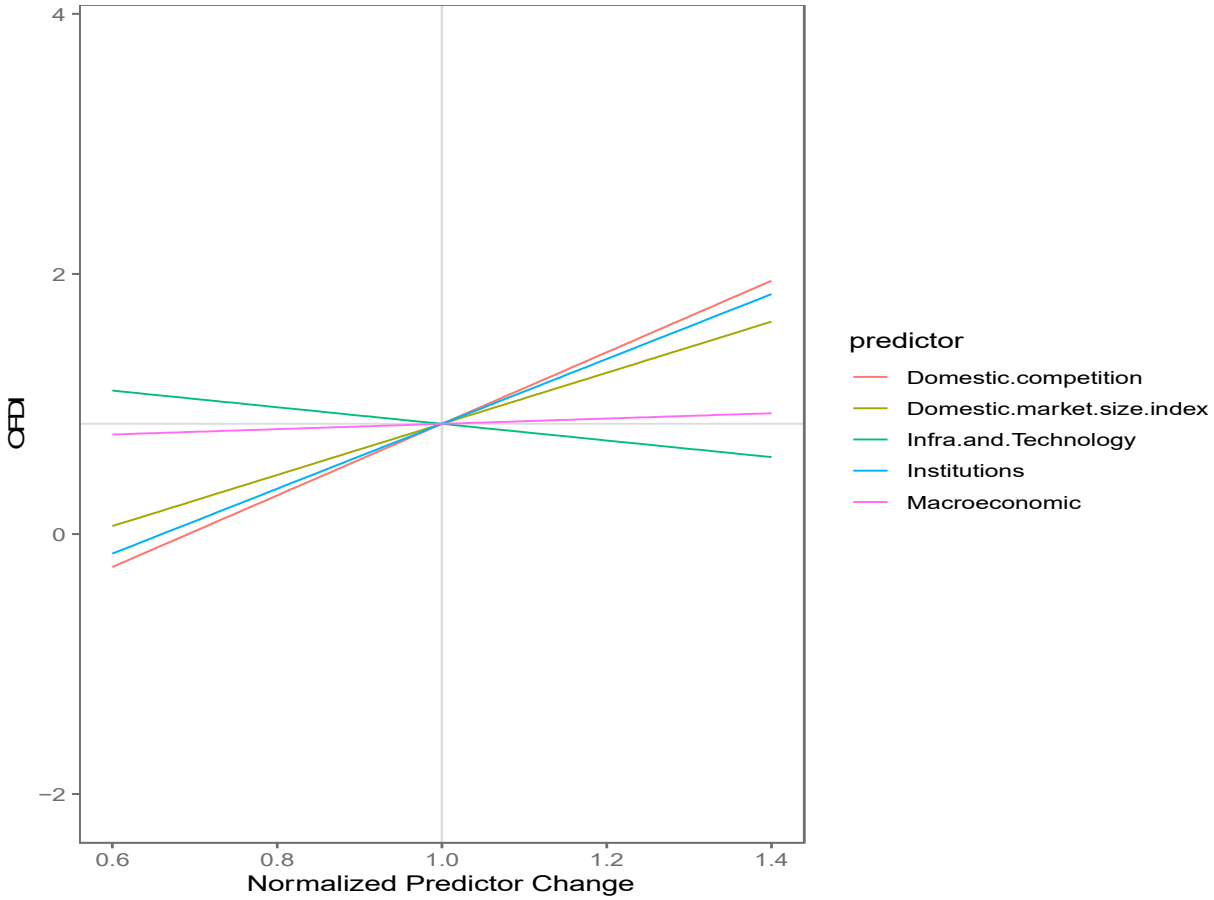

Figure 6. Sensitivity analysis for model (2) with a 90% confidence interval constructed for each predictor.

5. Conclusions

This study contributes to the literature by providing novel insights into how the home country factors affect the OFDI intensity in emerging markets. Our findings provide new and important insights in both theory and practice by investigating domestic markets' direct and interaction effects on the OFDI flows in LAC countries. We offer several novel theoretical contributions. Being late arrivals and with significant location advantages, EMCs rely more on their home base to sustain their international expansion (Luo and Wang 2012). The positive association between the strong macroeconomic performance in the home country and the OFDI intensity in LAC indicates that favorable domestic market conditions allow LAC firms to intensify their investments abroad. Moreover, we confirm that the precarious infrastructure and technology deficits inhibit the internationalization of LAC firms. Additionally, the positive association between the quality of formal institutions and the OFDI intensity suggests that the theoretical assumptions of the escape behavior (Cuervo-Cazurra and Narula 2015) are not consistent with the OFDI intensity patterns in LAC as institutional voids represent a barrier to the internationalization of these firms via OFDIs.

By adopting a multi-criteria approach and investigating the implications of different configurations of contextual conditions in the home country, our findings provide a thorough understanding of what drives the OFDI intensity in LAC. It shows that a combination of different characteristics of the home country context can either support or inhibit the internationalization via OFDIs. The results show that strong formal institutions complement macroeconomic conditions in LAC countries that support the internationalization of firms from the region through OFDIs. On the other hand, when the quality of formal institutions deteriorates, it becomes more difficult for these firms to invest abroad.

Moreover, the findings show that infrastructure and technology complement other location-specific advantages that increase the competitiveness of LAC firms and allow these firms to take advantage of strong macroeconomic activity in the domestic market to support their investments abroad.

In line with previous research, our findings emphasize the important role of the government in influencing the ability of indigenous firms to both generate competitive advantages relative to their competitors and locate their value-added activities outside of their home country (Dunning 2001; Ozawa 1992). In particular, robust domestic formal institutions augment national prosperity and support globalization efforts by domestic firms. Past evidence, such as the Operation Car Wash scandal in Brazil, shows that it not only negatively affected domestic construction firms, but the resulting domestic institutional void and uncertainty paved the way for foreign companies to enter the local market (Fonseca 2016). In the recent decade, the increased involvement of China through the Belt and Road Initiative (BRI) reveals that foreign investments are filling the void left by corrupt governments in emerging markets, and taking over important infrastructure projects and control of strategic assets. Thus, weak or declining domestic factors positively impact the IFDI but limit OFDI.

Our results provide fertile ground for future research in the determinants of OFDI in emerging markets. Future studies could expand on our analysis by focusing on how home country factors can affect the internationalization of EMCs in varying contexts and focusing on specific industries that are more sensitive. Therefore, new findings could strengthen our conclusions by including other characteristics of the home country context that might be more relevant to specific industries. Furthermore, studies could investigate how contextual characteristics of the home country affect the OFDI flows from emerging markets during disruptive events, such as the COVID-19 pandemic.

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