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Countries' governance and competitiveness: business environment mediating effect

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Business
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mediating
effect

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Abstract

Purpose – The purpose of this study is to analyze how institutional governance and business environment affect countries' competitiveness and their relative importance.

Design/methodology/approach – In this paper, the authors analyze how institutional governance and business environment affect countries' competitiveness, their relative importance and what are the implications for Brazil. The authors have collected data from 131 countries related to the institutional governance, business environment and competitiveness of these countries. For the analysis of the mentioned influences, the technique of partial least squares structural equations modeling is used.

Findings – Results indicate that the main role in countries' competitiveness is played by the quality of institutional governance. The quality of the business environment reinforces the positive effect of the quality of institutional governance on countries' competitiveness (mediation effect). Brazil has poor governance quality indicators when compared to high-middle income countries, especially regarding government effectiveness, political stability and control of corruption.

Research limitations/implications – The study provides a better understanding of the relative importance of governance quality and business environment quality for countries' competitiveness. One limitation of this study is that the research was restricted to data related to the year 2019.

Practical implications – For strategists and decision-makers, understanding these effects on countries' competitiveness and their relative importance is fundamental to understanding what makes their companies internationally competitive.

Social implications – The presence and appreciation of institutional governance quality need to be cultivated in society.

Originality/value – Instead of using the original diamond model, which presents circular relationships, the authors have used the business environment construct, composed of elements of the diamond model to test the relationships between the quality of institutional governance, competitiveness and the business environment.

Keywords Competitiveness, Structural equation modeling, Business environment, Mediating effect, Institutional governance

Paper type Research paper



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1. Introduction

The reasons why some nations develop and prosper, while others do not, are a permanent subject of interest in social sciences (Landes, 1998).

Porter (1990) applied the concept of competitiveness to the scope of nations to explain the existing differences in countries' competitiveness (*Diamond Model*). In a later study, Porter, Delgado, Kettels and Stern (2008) defined the *business environment concept* based on the elements of the Diamond Model. For the authors, the influence of other factors on countries' competitiveness such as government actions, would occur through their respective business environments.

Research-based on the institutional perspective (North, 1990) identifies institutional governance as the most important factor for differences in prosperity between countries (Hall & Jones, 1999; Acemoglu & Robinson, 2010). Institutional governance concerns the traditions and institutions by which authority in a country is exercised, governments are selected, monitored, replaced and implement effective policies respecting the institutions that govern economic and social interactions (World Bank, 2019a).

Lee (2010) identified the need to update the Diamond Model by incorporating insights from institutional theory and Buitrago and Camargo (2021) emphasize the importance of an appropriate institutional framework for international competitiveness.

Our motivation for this study is to analyze how institutional governance and business environment affect countries' competitiveness, their relative importance and their implications for Brazil.

We analyze the relationship between institutional governance (rule of law, control of corruption, political stability, regulatory quality and government effectiveness), business environment (factor conditions, demand conditions, related and support industries and context for rivalry) and the competitiveness of countries (productivity per worker) and seeks to answer the following questions:

- Q1. Does countries' institutional governance have a direct effect on their competitiveness?
- Q2. Does countries' institutional governance have an indirect effect on their competitiveness, through their business environments?

We have collected data from 131 countries related to these countries' institutional governance, business environment and competitiveness. For the analysis of the mentioned influences, the technique of partial least squares structural equations modeling (PLS-SEM) was used.

We hope that understanding how institutional governance and the business environment affect countries' competitiveness and their relative importance can be helpful for strategists and decision-makers in the quest to make their countries and companies internationally competitive.

After this introduction, the theoretical framework for the work together with the research methodology is presented, followed by analysis, discussion and conclusions.

2. Theoretical framework

2.1 National competitiveness

Several authors have tried to conceptualize and measure national competitiveness. Grein & Craig (1996) identified the existence of a significant relationship between exports and national performance, with substantial differences between developing and industrialized countries. In emphasizing the importance of multinational activities on the competitiveness of South Korea and Singapore, Moon, Rugman and Verbeke (1998) used national productivity in terms of per capita production and production per unit of energy consumption as measures of competitiveness.

Rugman, Oh and Lim (2012) used external sales at the company level as a measure of competitiveness. Bolouta and Pitelis (2014) considered the productivity of a country in terms of national production per unit of input, an excellent indicator of competitiveness. Berger (2008) identifies the ability of companies in a country to increase their productivity as essential for improving the economic standard of living of the citizens of that country. Porter (1998) defines national competitiveness in terms of aggregate productivity, while Snowdon (2011) considers that the existing business environments in each country have a significant influence on the performance of their companies.

Consistent with previous works that focus on productivity as the best indicator of national competitiveness, Hall and Jones (1999), Delgado, Ketels and Porter (2012), Porter, Delgado, Kettels and Stern (2008) and Fainshmidt, Smith & Judge (2016) used gross domestic product (GDP) adjusted for purchasing power parity (PPP) per worker to address productivity and national competitiveness.

2.2 Business environment and national competitiveness

Following the *structure-conduct-performance* paradigm of industrial organization (Bain, 1959), Porter (1990) initially concluded that four elements interact with each other to determine the competitiveness of countries: factor conditions, demand conditions, related and support industries and context for rivalry (*Diamond Model*). Subsequently, Porter *et al.* (2008) defined that these same elements form the countries' business environment. For Zhang & London (2013), this approach has become the most famous theory about the competitiveness of countries.

According to Porter (2009, p. 181), factor conditions refer to "the country's position regarding production factors such as qualified labor or infrastructure, necessary to compete in a given industry." Production factors include resources such as physical, human and financial resources available to economic entities, as well as the general quality of the infrastructure provided by their transport, communication, education and health systems. The author also emphasizes that advanced factors such as knowledge and human capital, are more critical to a country's competitiveness than basic factors. Research found that training and higher education have a positive impact on countries' prosperity (Barro, 2002; Krueger, & Lindahl, 2001).

For Porter (2009), when domestic demand conditions are relatively sophisticated, domestic companies must react and improve their productive capacities. In this way, a sophisticated market would reward organizations for producing world-class products or services, as demanding consumers force organizations to become more sophisticated and, therefore, provide high national competitiveness.

Grant (2011) notes the importance of the characteristics of domestic demand in defining the differentiation of products and creating pressures for innovation and quality. In this sense, demanding and lead customers are considered partners in the innovation process (Porter *et al.*, 2008). Snowdon (2011) points out that the sophistication of domestic demand is more important than its size.

The third element of the model addresses the importance of having sophisticated supplier groups and related industries in a country. According to Snowdon (2011), one of the most widespread discoveries in Porter's study is the tendency for successful companies to group in each country in clusters of related and support industries. As a result, economies that are external to companies and individual industries are internalized within the cluster. Grant (2011) points out that clusters' presence helps organizations migrate to emerging technologies and become or remain world-class. Thus, clusters provide knowledge, technology, enrich the economy and lead to increases in productivity. Kettels and Solvell (2006) observed that the presence and importance of clusters vary according to the state of

economic development. In developing economies, they are less developed and companies tend to perform fewer activities in clusters.

Grant (2011) notes that, in Porter's conceptualization, the rivalry between companies is extremely significant to pressure them to cut costs, improve quality and innovate. In an environment with intense competition, continuous improvement is critical for high productivity and performance (Lewis, 2004; Porter and Sakakibara, 2004). Consequently, the domestic rivalry is fundamental to promoting competitiveness.

According to Porter *et al.* (2008), a high-quality business environment is characterized by vigorous local competition, demanding and sophisticated local customers, clusters instead of isolated companies and high quality, efficient and specialized inputs to the business.

The most frequent use of the Diamond Model is in case studies to assess the competitiveness of a single country (Fainshmidt, Smith, & Judge, 2016). However, there are criticisms about this approach concerning precision and generalizability (Smit, 2010) and regarding the difficulties for its empirical evaluation because it is a system composed of interdependent elements (Davies and Ellis, 2000).

2.3 Institutional governance and national competitiveness

Institutions exert external controls over the behavior of individuals, organizations and the role of government in the economy (Cuervo-Cazurra, Mudambi, & Pedersen, 2019) and their role in countries' competitiveness has become more analytically relevant in recent years (Buitrago and Camargo, 2021).

In this perspective, some institutional factors such as political stability, property rights and corruption control, can directly affect the competitiveness of countries and their business environments (Rugman *et al.*, 2012). For Acemoglu and Robinson (2010), economic institutions such as market orientation and property rights are crucial for distinguishing between rich and stagnant countries. Zanello *et al.* (2016) emphasize the importance of the government's ability to form and efficiently allocate human capital in the economy.

Institutional governance quality is defined in terms of its pro-market characteristics such as laws and regulations that facilitate market relationships among economic players (Djankov *et al.*, 2002; Khanna and Palepu, 2010).

Previous works found that institutional governance quality has a positive and significant impact on labor productivity. Hall and Jones (1999) found that institutional differences are the leading cause of differences in productivity and GDP per capita among 127 countries. According to Mustafa and Jamil (2018), government effectiveness and regulatory quality have a positive and significant impact on labor productivity in emerging Asian countries. For Olson, Sarna and Swamy (2000), institutional governance quality improves productivity growth in developing countries. Méon and Weill (2005) found that government efficiency is the governance quality indicator that has the most significant impact on labor productivity.

According to Singh and Pradham (2020), institutional governance quality has a positive impact on economic performance and governance indicators such as control of corruption, government effectiveness and political stability are vital for better economic performance in South Asian countries.

Huang, Wu, Yu and Zhang (2015) concluded that political instability leads to the suspicion that contractual obligations will not be honored in the long run and because of this, companies modify their resource allocation decisions. Pelletier and Bligh (2006) identified the positive effect of political stability on economic growth and development.

De Soto (2000) emphasizes the importance of legal and formal property systems, given that the protection of property rights is associated with more reliable and efficient economic activities, reducing uncertainty, opportunism and transaction costs.

Transparency International (2020) defines *corruption* as the abuse of public power for private gain. Mo (2001) concluded that corruption reduces economic growth, entrepreneurship and innovation. Birhanu, Gambardella and Valentini (2016) concluded that bribery does not reduce companies' short-term performance but does commit investments in fixed assets, reflecting on their long-term growth. According to Fisman and Golden (2017), corruption undermines economic efficiency, increases social inequalities and is terrible for business and economic growth, eroding public confidence in political institutions.

Other studies confirmed the positive impact of the institutional governance quality on economic performance (Singh, 2019; Holmberg, Rothstein, & Nasiritousi, 2009; Rajkumar & Swaroop, 2008). Therefore, based on these considerations and to address the first question proposed in this article (Q1), Hypothesis *H1* comes out:

H1. The institutional governance quality of countries is positively associated with their competitiveness.

According to Porter (1998), government actions and other factors external to the Diamond Model would have an indirect influence on national competitiveness. This effect would occur through their influence on the business environment, which, in turn, would directly influence competitiveness.

In addition to confirming the relevance of the Diamond Model, Fainshmidt, Smith, & Judge (2016) identified the institutional governance quality as another element of national competitiveness. The authors concluded that although a favorable position in the four elements of the Diamond Model can put a country in a more productive position, institutional governance quality leads to the strengthening of the Diamond (business environment) and provides cost reductions associated with instability, transactions and inappropriate political behavior.

Given this conclusion and based on previous studies on the positive effect of the quality of institutional governance on the productivity of countries (Hall & Jones, 1999; Mustafa & Jamil, 2018; Olson *et al.*, 2000; Méon & Weill, 2005) and also considering that previous studies have identified the positive effect of the business environment quality on countries' competitiveness (Porter, 1990; Porter *et al.*, 2008), we hypothesize that the business environment quality mediates the relationship between the institutional governance quality and national competitiveness.

According to Hair, Hult, Ringle and Sarstedt (2017), the mediation effect occurs when a third construct intervenes between two other related constructs.

We suppose that a change in the exogenous construct (governance quality) would cause a change in the mediating construct (business environment quality), which, in turn, would result in a change in the endogenous construct (national competitiveness).

Based on this consideration and to address the second question proposed in this article (Q2), Hypothesis *H2* of this study comes out:

H2. Countries' business environment quality mediates the relationship between institutional governance quality and competitiveness.

Figure 1 illustrates the theoretical model proposed.

3. Methodology

We gathered data from 131 countries from 2019, as presented in Table 1 and used them to measure three latent variables: institutional governance quality, business environment quality and competitiveness of these countries. The data were obtained from the following sources: World Development Indicators (World Bank, 2019b), Worldwide Governance

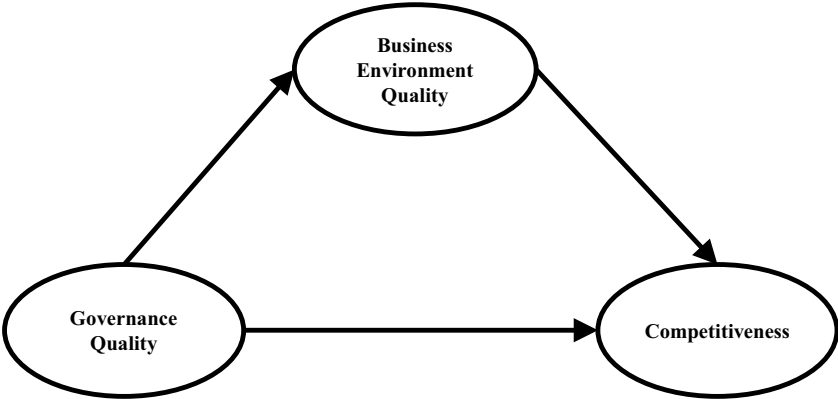


Figure 1.
Theoretical model

Source: Elaborated by the author

Indicators [World Bank \(2019a\)](#) and Executive Opinion Poll of the World Economic Forum ([World Economic Forum, 2019](#)). All countries for which the necessary data were available were included in the survey.

Considering that productivity is an essential element of national competitiveness, as in previous works by [Hall and Jones \(1999\)](#), [Delgado *et al.* \(2012\)](#), [Porter *et al.* \(2008\)](#) and [Fainshmidt, Smith and Judge \(2016\)](#), the GDP data adjusted by the PPC per worker were used as a measure of countries' competitiveness. We used data for 2019 provided by the World Bank ([World Bank, 2019b](#)) and Executive Opinion Poll of the World Economic Forum ([World Economic Forum, 2019](#)). The GDP (PPC) per worker, that is, labor productivity is measured when GDP (PPC) is divided by used people over 15 years old.

To measure institutional governance quality, we used Worldwide Governance Indicators for 2019 ([World Bank, 2019a](#)). Indicators for political stability, the rule of law, government effectiveness, voice and accountability, regulatory quality and control of corruption for the countries surveyed were used as indicated in [Table 2](#).

These indicators are a research data set summarizing the views on the quality of institutional governance provided by many enterprises, citizens and experts survey respondents in the countries in this research. These data are gathered from several survey institutes, think tanks, non-governmental organizations, international organizations and private sector firms. The governance data for each indicator ranges from approximately -2.5 (low quality) to 2.5 (high quality), reflecting governance performance for each country.

Data relating to Business Environment quality were obtained from the World Economic Forum's Executive Opinion Survey for 2019 ([World Economic Forum, 2019](#)), included in the 2019 Global Competitiveness Report. Each indicator is measured on a seven-point Likert scale, with 7 indicating high business environment quality regarding that indicator ([Table 3](#)).

Considering that advanced factors such as knowledge and human capital, are more critical to a country's competitiveness than basic factors ([Porter, 2009](#); [Barro, 2002](#); [Krueger & Lindahl, 2001](#)), we used as measures of factor conditions the skillset of secondary-education graduates, the skillset of university graduates and the quality of vocational training for each country.

To measure the demand conditions, we used the buyer sophistication measure for each country ([Porter, 2009](#); [Porter *et al.*, 2008](#); [Snowdon, 2011](#)). As a measure of related and

Income group	Country
High income	Australia, Austria, Bahrain, Belgium, Brunei, Canada, Chile, Croatia and Cyprus Czech Rep., Denmark, Estonia, Finland, France, Germany, Greece and Hong Kong Hungary, Iceland, Ireland, Israel, Italy, Japan, Korea, Rep., Kuwait, Latvia and Lithuania Luxembourg, Malta, Mauritius, the Netherlands, New Zealand, Norway, Oman and Panama Poland, Portugal, Qatar, Romania, Saudi Arabia, Singapore, Slovak Republic and Spain Slovenia, Sweden, Switzerland, Trinidad and Tobago and the United Arab Emirates UK, USA and Uruguay
Upper middle income	Albania, Argentina, Armenia, Azerbaijan, Bosnia and Herzegovina and Botswana Brazil, Bulgaria, China, Colombia, Costa Rica, Dominican Republic, Ecuador and Georgia Guatemala, Indonesia, Jamaica, Jordan, Kazakhstan, Lebanon, Malaysia and Mexico Montenegro, Namibia, Paraguay, Peru, Russian Federation, Serbia and South Africa Thailand and Turkey
Lower middle income	Algeria, Angola, Bangladesh, Benin, Bolivia, Cambodia, Cameroon and Cape Verde Côte d'Ivoire, Egypt, El Salvador, Eswatini, Ghana, Honduras, India, Kenya and Nepal Kyrgyz Republic, LAO PDR, Mauritania, Moldova, Mongolia, Morocco and Nicaragua Nigeria, Pakistan, Philippines, Senegal, Sri Lanka, Tanzania, Tunisia, Ukraine and Zambia
Low income	Burkina Faso, Burundi, Chad, Congo, Dem. Rep., Ethiopia, Gambia, Guinea and Haiti Madagascar, Malawi, Mali, Mozambique, Rwanda, Tajikistan, Uganda and Zimbabwe

Table 1.
Countries surveyed
by income group

Source: Elaborated by the author from [World Bank \(2019b\)](#)

supporting industries, we used the state of cluster development data for each country ([Porter, 2009](#); [Kettels & Solvell, 2006](#)). Finally, as a measure of the context for rivalry in each country, we used the extent of market dominance, the competition in professional services and the competition in retail services data ([Lewis, 2004](#); [Porter & Sakakibara, 2004](#)).

To test the influence of institutional governance quality on the business environment quality (*H1*) and the mediation effect of the business environment quality on the relationship between institutional governance quality and competitiveness of countries (*H2*), we used the PLS-SEM technique.

According to [Hair *et al.* \(2019\)](#), the technique of PLS-SEM has considered suitable for use in applied social science works for the following reasons:

- works efficiently with small sample sizes and complex models;
- does not require normal data distribution; and
- can easily handle reflective and formative measurement models, as well as single item constructions.

Table 2.
Quality of countries’
institutional
governance
indicators used in the
research

Indicator	
Voice and accountability	Reflects perceptions of the extent to which a country’s citizens can participate in selecting their government, as well as freedom of expression, freedom of association, and a free media
Political Stability and absence of violence/terrorism	Political Stability and Absence of Violence/Terrorism measures perceptions of the likelihood of political instability and/or politically motivated violence, including terrorism
Government effectiveness	Reflects perceptions of the quality of public services, the quality of the civil service and the degree of its independence from political pressures, the quality of policy formulation and implementation, and the credibility of the government’s commitment to such policies
Regulatory quality	Reflects perceptions of the ability of the government to formulate and implement sound policies and regulations that permit and promote private sector development
Rule of law	Reflects perceptions of the extent to which agents have confidence in and abide by the rules of society, and in particular the quality of contract enforcement, property rights, the police, and the courts, as well as the likelihood of crime and violence
Control of corruption	Reflects perceptions of the extent to which public power is exercised for private gain, including both petty and grand forms of corruption, as well as “capture” of the state by elites and private interests
Source: World Bank (2019a)	

For Cepeda, Nitzl and Roldán (2018), the PLS-SEM is one of the options used to analyze mediation effects. Given that in this research, *H2* refers to a case in which there is a mediation effect, the analysis technique using PLS-SEM is adequate.

One limitation of this technique is that it cannot be applied when structural models contain causal loops or circular relationships between latent variables (Hair *et al.*, 2017). Being aware of this, instead of using the original Diamond Model, which presents such circular relationships, we used the business environment construct, composed of elements of the Diamond Model.

Another possible bias regarding the goodness of fit, the PLS-SEM technique relies much less on the concept of model fit in comparison with confirmatory-based structural equation modeling (CB-SEM). As a result, some researchers make a mistake by incorrectly concluding that PLS-SEM is not valid for theory testing and confirmation (Hair *et al.*, 2019).

Finally, as parameter estimates with PLS-SEM are not optimal regarding consistency, this characteristic is often incorrectly referred to as *PLS-SEM bias* (Hair *et al.*, 2017).

4. Analysis

To measure the convergent validity of the model, the results of the extracted average variance (AVE) (above 0.5) were observed, together with Cronbach’s alpha (above 0.7) and the composite reliability (above 0.6) (Hair *et al.*, 2019). The results presented in Table 4 confirm the convergent validity, showing that the observed items converged to form the research constructs.

The discriminant validity included the calculation of the Heterotrait-Monotrait ratio (HTMT). We found that all HTMT values are below the limit value of 0.85 (Hair *et al.*, 2019). We also found that HTMT values are significantly different from 1 by performing the bootstrapping procedure. The results are shown in Table 4 and confirm the discriminant validity, proving that all the research constructs discriminate among themselves.

Table 3.
Items used for
measuring countries'
quality of business
environment

Item	Question
Skillset of secondary-education graduates	Response to the survey question "In your country, to what extent do secondary-education graduates possess the skills needed by businesses?" [1 = not at all; 7 = to a great extent]
Skillset of university graduates	Response to the survey question "In your country, to what extent do university graduates possess the skills needed by businesses?" [1 = not at all; 7 = to a great extent]
Extent of market dominance	Response to the survey question "In your country, how do you characterize corporate activity?" [1 = dominated by a few business groups; 7 = spread among many firms]
Competition in professional services	Response to the survey question "In your country, how competitive is the provision of professional services (legal services, accounting, engineering, etc.) [1 = not at all competitive; 7 = extremely competitive]"
Competition in retail services	Response to the survey question "In your country, how competitive is the provision of retail services" [1 = not at all competitive; 7 = extremely competitive]
Quality of vocational training	Response to the survey question "In your country, how do you assess the quality of vocational training?" [1 = extremely poor among the worst in the world; 7 = excellent among the best in the world]
State of cluster development	Response to the survey question "In your country, how widespread are well-developed and deep clusters (geographic concentrations of firms, suppliers, producers of related products and services, and specialized institutions in a particular field)?" [1 = non-existent; 7 = widespread in many fields]
Buyer Sophistication	Response to the survey question: "In your country, how do buyers make purchasing decisions?" [1 = based solely on the lowest price; 7 = based on a sophisticated analysis of performance attributes]

Source: World Economic Forum (2019)

The results of VIF values for the business environment (2.508) and governance (2.508) as predictors of competitiveness are below the threshold of 5. Therefore, collinearity among the predictor constructs is not a critical issue in the structural model.

The R^2 values obtained for the endogenous latent variables were 0.601 for competitiveness and business environment. These results indicate that the model's predictive power can be considered *moderate*.

The effect size f^2 is used to evaluate whether one omitted exogenous construct has a substantive impact on the endogenous constructs. The effect sizes f^2 to structural model relationships obtained are as follows: business environment on competitiveness (0.081) (considered *small*); institutional governance on competitiveness (0.285) (considered *large*); institutional governance on the business environment (1.508) (considered *large*).

Examining the relative importance of path coefficients, we found that the institutional governance effect on the business environment is the most important (0.775), followed by its effect on competitiveness (0.534). The least important effect found was that of the business environment on competitiveness (0.284).

To assess whether structural model relationships are significant, we ran the bootstrapping procedure. Table 5 shows *p* values for the structural model relationships as a result of the bootstrapping procedure. Assuming a 5% significance level, we find that all relationships in the structural model are significant.

Table 6 shows *p* values for the structural model relationships' total effects resulting from the bootstrapping procedure. Again, assuming a 5% significance level, we find that all relationships in the structural model are significant.

After running a blindfolding procedure, we found that *Q*² values for competitiveness (0.589) and business environment (0.430) are considerably above zero. These results provide clear support for the model's predictive relevance regarding these endogenous latent variables.

5. Discussion

To answer the first question of this study (Q1) we established the institutional governance quality construct. In addition, we also established a construct to represent competitiveness based on productivity. Establishing these constructs made it possible to test our first hypothesis (*H1*) by using the structural equation modeling technique.

The results (Tables 4 and 5) confirm a positive and significant influence of institutional governance quality on countries' competitiveness (path coefficient 0.534), as in results from

Latent Variable	Indicators	Loadings	Indicator Reliability	AVE	Composite Reliability	Cronbach's Alpha
Business Environment	Buyer sophistication	0.837	0.701	0.731	0.956	0.947
	Competition in professional services	0.765	0.585			
Quality	Competition in retail	0.752	0.566	0.855	0.972	0.965
	Extent of market dominance	0.872	0.760			
	Quality of vocational training	0.903	0.815			
	Skillset of secondary-education graduates	0.916	0.839			
	Skillset of university graduates	0.895	0.801			
Governance Quality	State of cluster development	0.883	0.780	0.855	0.972	0.965
	Government effectiveness	0.970	0.941			
	Political stability	0.832	0.692			
	Regulatory quality	0.965	0.931			
	Rule of law	0.978	0.956			
	Accountability	0.820	0.672			
	Control of corruption	0.968	0.937			

Table 4. Results summary Source: Elaborated by the author based on the SmartPLS output

Relationship	Path coef.	<i>p</i> values	95% conf intervals	Significance (<i>p</i> < 0.05)
Business environment-competitiveness	0.284	0.002	0.089–0.458	Yes
Governance-competitiveness	0.534	0.000	0.365–0.679	Yes
Governance-business environment	0.775	0.000	0.710–0.825	Yes

Table 5. Significance testing of structural model path coefficients Source: Elaborated by the author based on the SmartPLS output

previous studies (Hall & Jones, 1999; Mustafa & Jamil, 2018; Olson *et al.*, 2000; Méon & Weill, 2005).

In addition to this direct effect, we also investigated an indirect effect of institutional governance quality on competitiveness, based on the theory that such effect occurs because of the business environment (Porter *et al.*, 2000; Fainshmidt, Smith and Judge, 2016).

By establishing and testing our second hypothesis (*H2*), it was possible to address our second question (Q2) using the structural equation modeling technique. The results (Tables 4 and 5) confirm a positive and significant influence of institutional governance quality on countries' business environment quality (path coefficient 0.775), which confirms previous findings that institutional governance quality leads to the strengthening of Diamond Model elements (Fainshmidt, Smith and Judge, 2016). This positive effect occurs due to reducing transaction costs, instability and inappropriate political behavior, allowing companies not to spend their time and resources dealing with instability and uncertainties (Fainshmidt, Smith and Judge, 2016).

The results also confirm a positive and significant influence of the business environment quality on countries' competitiveness (path coefficient 0.284), confirming previous findings (Porter, 1990; Porter *et al.*, 2008).

As indicated in Table 6, the total indirect effect (path coefficient 0.220) and the direct effect (path coefficient 0.534) are both significant and point in the same direction. Therefore, the total effect of institutional governance quality on countries' competitiveness is positive and significant (Table 6). The direct effect of the business environment quality on countries' competitiveness was the least significant of the direct effects found (path coefficient 0.284).

Our results indicate that institutional governance quality plays a central role in countries' competitiveness, as it positively affects competitiveness and the business environment. Institutional governance quality (exogenous construct) has a positive effect on business environment quality (mediating variable), which, in turn, has a positive effect on competitiveness (endogenous construct). As all these effects are positive and add to the positive effect of governance quality on competitiveness, it was possible to verify the existence of a complementary mediation effect (Hair, Hult, Ringle, & Sarstedt, 2017). Thus, the effect of the business environment quality on competitiveness acts as a reinforcement of the effect of the governance quality on competitiveness.

Among the external weights (Table 7) related to institutional governance quality, we found that government effectiveness and corruption control are the main ones, as in previous findings (Singh & Pradhan, 2020; Méon & Weill, 2005). Regarding external weights (Table 7) related to business environment quality, we observe that education indicators have the highest weights, also confirming previous findings (Barro, 2002; Krueger & Lindahl, 2001).

Table 8 illustrates Brazil's business environment quality indicators in relation to the various income groups.

Effect	Path coef.	<i>p</i> values	95% conf intervals	Significance (<i>p</i> < 0.05)
Direct effect	0.534	0.000	0.365–0.679	Yes
Indirect effect	0.220	0.003	0.069–0.357	Yes
Total effect	0.754	0.000	0.661–0.818	Yes

Table 6.
Significance of direct,
indirect and total
effects of governance
on competitiveness

Source: Elaborated by the author based on the SmartPLS output

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Regarding the indicators with the highest outer weights (Table 7), that correspond to the advanced factors such as human capital, Brazil has its worst relative positions in the upper-middle-income group.

It is noteworthy that the country spends more on education, with worse results on learning verification exams than other countries (Lisboa, 2020; Begnini & Tosta, 2017).

Considering the governance indicators, Table 9 illustrates Brazil's position in relation to the different income groups.

Table 7.
Outer weights

Indicator	Business environment	Governance
Competition in retail	0.128	
Control of corruption		0.196
Extent of market dominance	0.142	
Government effectiveness		0.207
Labor productivity		
Political stability		0.148
Quality of vocational	0.157	
Regulatory quality		0.195
Rule of law		0.199
Skillset of graduates	0.160	
Skillset of university graduates	0.148	
State of cluster	0.148	

Source: Elaborated by the author based on SmartPLS output

Table 8.
Business
environment quality
indicators (0–7) by
countries income
group versus Brazil

Indicator	High income	Upper middle	Brazil	Lower middle	Low income
Buyer sophistication	4.11	3.57	3.59	3.19	2.91
Competition in professional services	5.41	5.13	5.20	4.49	4.01
Competition in retail	5.52	5.17	5.32	4.85	4.59
Extent of market dominance	4.34	3.73	3.77	3.45	3.29
Quality of vocational training	4.67	4.03	3.32	3.75	3.72
Skillset of graduates	4.66	3.99	3.20	3.72	3.65
Skillser of univ. graduates	4.94	4.28	3.51	4.02	3.99
State of cluster development	4.38	3.78	3.92	3.51	3.26

Source: Elaborated by the author from World Bank (2019b) and World Economic Forum (2019)

Table 9.
Governance quality
indicators (0–100) by
countries income
group versus Brazil

Indicator	High income	Upper middle	Brazil	Lower middle	Low income
Voice and accountability	87.24	48.49	58.62	42.07	25.62
Political stability	74.75	49.99	24.76	39.46	22.95
Government effectiveness	87.59	50.85	43.75	34.21	20.51
Regulatory quality	88.86	49.09	48.08	34.21	20.51
Rule of law	87.41	48.92	47.60	34.86	20.37
Control of corruption	85.33	48.43	42.31	36.92	21.09

Source: Elaborated by the author from World Bank (2019a)

Regarding government effectiveness, which is the indicator with the highest outer weight (Table 7), Brazil performs below the average of the group of high-middle-income countries.

In fact, the Brazilian public sector costs about 33% more than that of other emerging countries, its judiciary costs between 4 and 10 times more than other emerging and developed countries (Lisboa, 2020). In addition, legal uncertainty and tax complexity make life difficult for companies and hamper investments (Giambiagi & Zeidan, 2018).

The worst relative performance in Brazil (Table 9) associates with political stability. There is an inferior performance of the country in relation to the group of upper-middle-income countries and in relation to the lower-middle-income countries. Its performance can be comparable to the performance of low-income countries.

Regarding the other indicators, i.e. corruption control, the rule of law and regulatory quality, we observed that the country generally performs below the average of the upper-middle-income group (Table 9).

6. Conclusion

We believe that this study contributes to the literature by providing a better understanding of how institutional governance quality and business environment quality affect the competitiveness of countries and the relative importance of each one.

The empirical results indicate that institutional governance quality positively affects countries' competitiveness and business environment quality. We found support for the presence of a complementary mediating effect of the business environment quality and also for institutional governance as the main factor for countries' competitiveness.

For strategists and decision-makers, understanding these effects on countries' competitiveness and their relative importance is fundamental to perceiving what makes their companies internationally competitive. Moreover, the prominence of institutional governance for the competitiveness of countries means that the presence and appreciation of institutional governance quality need to be valued by society.

Brazil has poor governance quality indicators compared to high-middle-income countries, especially regarding government effectiveness, political stability and control of corruption. Therefore, our findings indicate that for the country to improve its competitiveness, its priority should be to seek an improvement in these indicators, which would have a direct effect on the country's competitiveness and on the business environment quality, which, in turn, would also lead to a positive effect on competitiveness.

One limitation of this study is that the research was restricted to data related to the year 2019. As a suggestion for new studies, it would be interesting to carry out research that included more years' data, which would make it possible to verify the consistency of the results over time.

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