VERTICAL INTEGRATION IN EMERGING AND UNDERDEVELOPED COUNTRIES AS A FORM OF VALUE PROTECTION

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Resumo

This study examines the impact of economic and institutional factors, particularly instability and uncertainty, on the adoption of vertical integration by firms in emerging and developing countries Employing a descriptive and quantitative research design with panel data analysis of publicly traded firms across 75 countries, the study utilizes financial indicators from Capital IQ, along with macroeconomic variables such as GDP per capita and the World Uncertainty Index Fixed effects econometric models reveal that internal operational factors, notably revenue and operating cash flow, have greater statistical significance in explaining vertical integration decisions compared to aggregate measures of economic and political uncertainty, which show limited explanatory power, possibly due to data aggregation and sectoral heterogeneity These findings partially challenge the Transaction Cost Economics premise that greater uncertainty induces vertical integration, suggesting that firms prioritize internal capabilities over external institutional pressures, aligning with theories of voluntarist strategic response The study contributes to the literature by highlighting the predominance of endogenous financial justifications over exogenous uncertainty in the formation of organizational structure in fragile institutional contexts In practical terms, it alerts policymakers that institutional strengthening may not produce immediate organizational changes, since companies' verticalization strategies may mask vulnerabilities rooted in institutional misalignment.

Palavras-chave: Vertical Integration; Economic Uncertainty; Instability of the Institutions.

Abstract

This study examines the impact of economic and institutional factors, particularly instability and uncertainty, on the adoption of vertical integration by firms in emerging and developing countries. Employing a descriptive and quantitative research design with panel data analysis of publicly traded firms across 75 countries, the study utilizes financial indicators from Capital IQ, along with macroeconomic variables such as GDP per capita and the World Uncertainty Index. Fixed effects econometric models reveal that internal operational factors, notably revenue and operating cash flow, have greater statistical significance in explaining vertical integration decisions compared to aggregate measures of economic and political uncertainty, which show limited explanatory power, possibly due to data aggregation and sectoral heterogeneity. These findings partially challenge the Transaction Cost Economics premise that greater uncertainty induces vertical integration, suggesting that firms prioritize internal capabilities over external institutional pressures, aligning with theories of voluntarist strategic response. The study contributes to the literature by highlighting the predominance of endogenous financial justifications over exogenous uncertainty in the formation of organizational structure in fragile institutional contexts. In practical terms, it alerts policymakers that institutional strengthening may not produce immediate organizational changes, since companies' verticalization strategies may mask vulnerabilities rooted in institutional misalignment.

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1. INTRODUCTION

Companies grow and seek expansion to enhance their operational and financial performance, increase sales, gain a larger market share, and achieve higher profits and market dominance. The traditional view regarding the internationalization of organizations is based on the premise that companies invest in other countries with the primary objective of enhancing their performance, thereby leveraging their competitive advantages in different markets. The way organizations are structured within each sector depends on various factors and elements, both internal and external. In a world where companies are increasingly internationalized and operate globally, it is essential to understand the risks that can impact these companies and how they can be mitigated.

There are numerous studies on vertical integration and the factors that motivate companies to choose this form of production structure over the market mode. In the literature, several studies have identified factors that influence the form of economic organization within companies. So, depending on the current conjuncture of factors, a specific organizational form may prevail (Rocha, 2002).

For Coase (1937), all this choice or motivation for vertical integration is based on the hypothesis of market effectiveness and its ability to influence organizations. Based on the hypothesis that markets are not perfect, it becomes clear that uncertainties exist in the market, resulting in vulnerabilities within value chains. According to the Theory of Transactional Costs, the search for dispersion of uncertainties and risks can be a motivator for vertical integration, aiming to minimize supply and distribution problems, as well as prices and economic dependence (Williamson, 1979).

The choice for this alternative, that is, the organizational structure (vertical integration), is seen as an efficient corporate governance structure, responsible for eliminating some critical aspects of the value chain, such as the cost of negotiating and drafting contracts, the monitoring and execution cost (Williamson, 1975; Leiblein & Miller, 2003).

Thus, in a volatile environment that may or may not be competitive, the clear identification of factors that increase uncertainties about the performance of the value chain is essential for planning that will indicate the organization's direction (Piccoli, Tortato & Caue, 2011).

The element of uncertainty is mentioned in the literature as one of the elements considered by economic agents when choosing vertical integration. In other words, we have the basic premise of a risky and insecure market, which is derived from a set of reasons for performing vertical integration (Rumelt, 1974; Williamson, 1975; Harrigan, 1985; Teece, 1986; Stucky & White, 1993).

Economic factors are analyzed more frequently and under different theoretical views. Thus, the analysis and verification methods have been based almost exclusively on the perspective of interconnections between organizations and their economic environments; however, models that prioritize theories with an approach between companies and political environments still require further study. (Ring, Lenway & Govekar, 1990; Fernandes, Bandeira-de-Mello & Zanni, 2012).

The article identifies that existing research predominantly uses aggregated indicators of economic and political uncertainty (e.g., the World Uncertainty Index), which fail to capture sectoral specificities and nuanced institutional differences across countries. This limitation restricts understanding of how institutional factors truly influence vertical integration. Additionally, there is a lack of exploration into the interaction between firms' internal capabilities (such as revenue and cash flow) and external institutional pressures in shaping vertical integration decisions, particularly in emerging and underdeveloped countries.

Through empirical analysis and based on a risky and insecure market approach, this study raises a problematization, where the economic and political uncertainties of countries' institutions are relevant for organizations to choose verticalized organizational structures as a means of protecting value.

Consequently, how do sector- and country-specific institutional uncertainties, in interaction with firms' internal financial and operational capacities, influence the adoption of vertical integration strategies in emerging and underdeveloped countries? To analyze the combined effects of disaggregated institutional uncertainty indicators and firms' internal operational capabilities on the decision to vertically integrate in emerging and underdeveloped countries vertically, thereby providing a more nuanced understanding of the determinants of vertical integration in fragile institutional contexts.

The article's theoretical relevance is related to the construction of the vertical integration variable and the inclusion of uncertainties in the search for evidence of their influence on the verticalization choice as a means of protecting value. The uncertainty elements play a secondary role in the vertical integration analysis, and according to the traditional viewpoint, they are replaced by other factors such as market power strategy or asset specificity (Rocha, 2002). The practical relevance, on the other hand, is a matter of greater objectivity and clarity in terms of functionality and the importance of vertical integration, that is, what factors can drive organizations to act vertically.

Thus, in this opening chapter, an introduction to the theme of this article will be provided. The second part presents the entire concept of vertical integration, including its relationship with economic and institutional aspects. The third section presents the applied methodology and the data used, while the fourth part highlights and discusses the results analysis. Finally, the last section, the conclusion of this article, presents the findings related to the initial proposition.

2. THEORETICAL REFERENCE

Vertical Integration - Concepts and Types

One of the traditional and accepted definitions, as the starting point for studies on vertical integration, is the setting reported by Coase (1988), who points to the need to analyze and identify which of the two ways of coordinating interactions (integration) between agents, the market, and companies, is present. For a company to be described as fully verticalized, it must have incorporated two production processes and have only one output (Perry, 1989).

The two definitions above are tautologies, but they are not substantiated by the Transaction Cost Economics (TCE) bias. Another conception of the definition is structured with a more internalized view (organization). From this perspective, verticalization is an organizational decision to internalize, in the sense of having control of stages upstream or downstream (Silva, Rodrigues, Sannomya, Peres & Corvacho, 2009). According to Williamson (1991), verticalization enables the more satisfactory management of transactions, as it ensures that the company retains control rights and power, thereby facilitating the internal resolution of contractual disputes.

The choice for this structural procedure is a strategy that aims to assume responsibility, management, or total control of a given activity (Respino, 2014). In short, vertical integration involves the aspects and links that enable certain activities in an economically productive chain to be carried out within the same organization or in different organizations, but which are traded via the market.

According to Joskow's (2005) analysis and understanding, these numerous theories and concepts regarding vertical integration share a common link, all of which are based on the hypothesis of market failures or imperfect markets. The primary objective of this organizational strategy is to stimulate company growth through vertical integration, which involves incorporating stages into its production process to increase the number of products or processes (Silva, 2005).

In the words of Respino (2014), despite vertical integration being an important managerial innovation and a necessary step for the technological development of specific industries, it may not be appropriate in all circumstances. This makes it clear that although the institutional environment is fundamental, neither institutional pressures are so deterministic (Oliver, 1991; 1997) nor are companies prisoners of a deterministic isomorphism (Li, Miller & Eden, 2012). If the above negatives were false, there would be a significant difference between the companies, and they would all assume identical structures, policies, and strategies (Ferreira & Serra, 2015).

Determinants of the Vertical Integration Decision

Regarding these determinants of vertical integration, Perry (1989) identifies three traditional determinants: technological economies, transaction economies, and market

imperfections. Furthermore, the concept of market imperfections aligns with the framework of transaction cost economics (TCE), as discussed by the authors Coase and Williamson.

Other studies also address several aspects as determinants of vertical integration. Thus, the authors Stuckey and White (1993) bring four reasons that lead the company to opt for vertical integration. For our study, the most crucial reason identified is the existence of market failures, where the market becomes highly risky and insecure, creating a high-cost environment, and it is often impossible for organizations to use control mechanisms (for example, contracts) that could disperse or minimize the risks.

In the understanding of Carlton and Perloff (2005), there are six motivations for organizations to undertake vertical integration in productive activities:

i. reduce costs, especially transaction costs;

ii. avoid or minimize costs resulting from government restrictions (regulations and taxes);

iii. increase or create market power, or eliminate a competitor's market power;

iv. eliminate externalities or market failures;

v. ensure a stable supply of a key input;

vi. facilitate information exchange.

Another critical factor is the geographic location of the company, which is an element to be considered as a determinant of vertical integration. According to Williamson (1983), the specificity of the location where the company operates may be a motivator for the company to integrate its activities vertically.

According to the authors' reports, a significant number of factors can impact the profitability and value of companies that utilize verticalization in various situations. This indicates a basis for informed decisions regarding economic activities within each production chain. For this reason, it is essential not only to present the determinants but also to discuss the possible gains and losses associated with vertical integration. As elaborated by Overgaard (2004), a summary of the possible advantages and disadvantages of vertical integration is below:

- Possible disadvantages

i. domestic input production can be relatively more costly
ii. administration problems (management and bureaucratic costs)
iii. legal costs of integration
iv. different organizational cultures

- Possible advantages

i. lower transaction costs
ii. security regarding the supply of inputs
iii. creation or extension of market power
iv. prevention against market power
v. internalization of "vertical externalities."
vi. prevention against antitrust scrutiny
vii. tax avoidance (for example, taxes on goods circulation - "Brazilian state excise tax")

Economic and Political Elements / Institutional

It is crucial to understand the types of influence that can have a positive or negative impact on a company's performance and its production chain. There is a distinction in the literature between these two forms of pressure: external and internal. External influences that are the focus of our study include the regulatory structures of countries, government agencies, the legal system and courts, culture, and the economy, among others (Scott, 2003). That is, incoming foreign organizations are to some extent directed by the receiving country so that it adopts a set of guidelines, rules, procedures, values, and organizational norms that are in line with the institutional premises of the place (Martin, Swaminathan, & Mitchell, 1998; Lu, 2002; Ferreira & Serra, 2015).

Corroborating with the authors above, Guisinger (2001) proposes that for any study on international companies and businesses, it is essential to understand the necessary adjustments and how to overcome local environmental barriers, especially in emerging and underdeveloped countries. These adaptation barriers, already known, stem from simple ignorance of local laws and regulations, a lack of legitimacy in the new environment, and weak or ineffective institutions (Hymer, 1976; Wright, Filatotchev, Hoskisson, & Peng, 2005; Ferreira & Serra, 2015).

This is a clear indication that the countries' institutional environment, economic issues, and the instability of political institutions have the power to influence and impact the formation of organizational strategies. As already mentioned, this study addresses only two aspects of the institutional environment. However, currently, the taxonomy of the authors Berry, Guillén, and Zhou (2010) lists nine dimensions of the institutional environment, namely: economic, financial, political, administrative, cultural, demographic, knowledge, global, and geographical connections.

Solid institutions are crucial to the smooth functioning of the economy, as they are integral to the economic base. This consolidation, which conveys security, enables companies to access market mechanisms efficiently and with reduced transaction costs (Williamson, 1985; North, 1990; Scott, 2003; Ferreira & Serra, 2015). When we use the term' institutions,' we encompass all aspects involving legislation and regulation, physical and intangible property rights, agencies and public bodies of various purposes, professional associations and unions, social and business interest groups, and public opinion (Oliver, 1991; Scott, 2003).

In countries in which institutions are characterized as weak or without confidence regarding their guidelines or regulations, due to this characteristic derived from the institution's fragility emerges problems related to the increase in the operations costs, the risks of having partnerships/businesses in these countries and an increased costs of information on business partners (Kostova, Roth & Dacin, 2008; Li & Ferreira, 2011).

These findings and pieces of evidence are essential to corroborate and, in a way, complement the propositions of DiMaggio and Powell (1983) and Li, Miller, and Eden (2012), who state that in periods of uncertainty, social norms and contractual commitments (taken-for-granted), considered until then as an acceptable socio-economic standard in foreign markets (Oliver, 1997; Zukin & DiMaggio, 1990), can in many situations lose credibility and legal value, so, rules that are often momentary or contradictory (previous) come into force; thus the efficiency and technical criteria are frequently abandoned.

3. METHODOLOGY

Research Characterization

The methodology in a research article is a crucial tool in constructing the proposed research problem, enabling the desired objectives to be achieved. Regarding the research objectives, it is classified as descriptive. It has a descriptive characteristic, as it sought to identify how the relationship between external variables (economic and institutional instability) and vertical integration works based on the analysis of financial indicators. Regarding the approach to the problem, the choice of a qualitative aspect in the research was the most appropriate, as the information is quantified based on the research problem.

For this article, bibliographic research is used as a means of directing the study, recognizing that this research form is built upon material already prepared as a database, including articles, theses, dissertations, and books.

Sample

This article will be framed within the non-probabilistic sampling group, as it explains the form of selection, which is based on the criteria established by the researcher. This overlaps with the importance of the means and the logic that the researcher will use to develop their sample selection criteria. (Marconi and Lakatos, 2010).

The present research sample was formed based on the classification established between the types of countries: developed, emerging, and underdeveloped. Thus, the selection covers only countries that belong to the group of emerging and underdeveloped countries. The justification assumes that uncertainties and instabilities are more frequent in countries with dualistic characteristics; that is, they present conditions that warrant a measurement of vertical integration.

At the end of the sample selection, we have 75 countries, which are shown in Table 1 below:

Table 1 –Countries that are part of the survey sample

Argentina	China	Iraq	Mexico	Saudi Arabia
Azerbaijan	Colombia	Israel	Mongolia	Senegal
Bahamas	Costa Rica	Ivory Coast	Morocco	South Africa
Bahrain	Curaçao	Jamaica	Mozambique	Sri Lanka
Bangladesh	Dem. Rep. Congo	Jordan	Namibia	Sudan
Barbados	Dominican Republic	Kazakhstan	Niger	Suriname
Belize	Ecuador	Kenya	Nigeria	Tanzania
Benin	Egypt	Kuwait	Oman	Thailand
Botswana	Fiji	Kyrgyzstan	Pakistan	Togo
Brazil	Gabon	Lebanon	Panama	Trinidad & Tobago
Brunei	Gambia	Macau	Papua New Guinea	Tunisia
Burkina Faso	Ghana	Malawi	Peru	Turkey
Cambodia	Hong Kong	Malaysia	Philippines	Turks & Caicos Islands
Cameroon	India	Mali	Qatar	Uganda
Chile	Indonesia	Mauritius	Rep. of the Congo	United Arab Emirates

Source: Prepared by the author, 2019.

Thus, this study comprises publicly traded companies from Latin America, Central America, Africa, the Middle East, and Asia.

Data collecting

The article utilizes a secondary data source, which consists of contributions to the theme being explored. The primary source of data and information for companies is internal factors, which include financial information obtained from the annual statements collected in the Capita IQ system database. This information is extracted in the form of

quarterly indicators, which will be used to structure and support the analysis of this research.

Thus, to materialize the research purpose, it was identified that the use of indicators is of fundamental importance. These selected variables originate from concepts and studies that, over the years, have served as a basis for decision-making in the organization's performance analysis.

The second data source was divided into two parts. The first is based on the Economic Policy Uncertainty (EPU) indicator. The methodology of these indicators is based on three pillars: quantification of media coverage related to economic uncertainty and politics, the number of provisions in the tax code that will expire in future years, and disagreement among economic forecasters as a proxy for uncertainty.

The second part involves obtaining the analog data on real and nominal GDP per capita for the countries included in the study between 2010 and 2017. These data were collected and released by the International Monetary Fund (IMF) in the form of a time series. The annual information obtained, both from the EPU and the IMF, details the uncertainties of the countries' environment, both in the economic aspect and in the institutional matter.

Data Treatment

The importance of this stage is based on two pillars: the method used for analysis and the interpretation of the obtained data. The first pillar is descriptive analysis (mean, median, minimum, maximum, and standard deviation), which serves to inform the performance of one or more variables within a population or subpopulation. The primary purpose is to conduct a systematic investigation of the topic addressed, with the expected outcome being a detailed characterization of all the elements involved in the relationship and the causality between the variables.

The second pillar is the regression model chosen for this research, specifically a panel data model. The choice of this method is due to the sample characteristics, that is, a time series. According to the authors Baltagi (2005) and Gujarati (2011), the results obtained in this model provide greater explanatory power, increased variability, reduced collinearity in the samples, and higher degrees of freedom and efficiency.

The choice of linear regression with panel data demonstrates the potential for explaining vertical integration, taking into account both economic aspects and institutional instability. The dependent variable is the verticalization (Asset Turnover and/or Fixed Assets) performed by the companies, and the independent variables (Fixed Assets, Suppliers, and Operating Cash Flow) are the selected indicators, according to some studies on the influence of these indicators. Additionally, we have two exogenous variables (GDP per capita and the World Uncertainty Index Global) to verify external influences.

The panel data approach is one of unbalanced type, that is, the number of observations is not the same for all analysis variables (incomplete data), thus, characterized as a short panel, in which the number of periods (T) is less than the number of observations (N) in the cross-section ($T<N$). The analysis of fixed effects is applied, assuming that the heterogeneity of each observation is incorporated into the model constant (Gujarati, 2011) and that the intercept of each individual is time-invariant.

Analysis of the Relationship between Vertical Integration and the Indicators

Depending on the dependent, explanatory, and binary variables, it is considered the connection between the dependent variable (working capital) and the variables of financial, economic, and institutional instability. That said, two hypotheses of vertical integration are presented and illustrated in Equations 1 and 2.

Equation 1 – Asset Turnover:

$$ATO = \alpha + \beta 1IMOB + \beta 2FORN + \beta 3FCO + \beta 4PIBCAP + \beta 5WUIGB + \varepsilon pt$$

Equation 2 – Fixed Assets:

$$FA = \alpha + \beta 1GA + \beta 2FORN + \beta 3FCO + \beta 4PIBCAP + \beta 5WUIGB + \varepsilon pt$$

4. RESULTS ANALYSIS

In this chapter, the results obtained through the proposed regressions to verify vertical integration are exposed and investigated. Initially, the summary tables will be displayed, showing the values of the statistical results.

Initially, observations covering the period from January 1, 2010, to December 31, 2017, were allocated to the GRETL software (Gnu Regression, Econometrics, and Time-series Library) and underwent quantitative procedures. It is noteworthy that the level of significance (α) is 5% (0.05). The information in Table 2 provides the characteristics of the research sample.

Table 2 - Description of the variables applied in the econometric model

	Observações	Média	Mediana	Mínimo	Máximo	Desvio-Padrão
FCO	422	125,0113	32,4000	-6535,6000	3790,4000	389,7070
FORN	422	154,1811	29,7000	0,0000	2.630,0000	196,0391
IMOB	422	803,4087	191,7000	0,0000	8.831,9000	946,3911
MARGBR	422	37,1646	35,6500	-60,3000	104,1000	21,3101
REC	422	1.028,8604	299,4000	0,0000	10.703,0000	1.172,1431
ATL	422	1.186,6475	196,3000	0,0010	19.124,0000	1.545,2827
GA	422	2,0408	1,8175	0,0000	27,4747	1,3152
PIBCAP	422	10.555,5780	5.379,1194	315,7773	93.777,1068	9.768,2488
WUIGB	422	160,8041	167,3899	112,6778	206,0484	22,8567

Source: Prepared by the Author, 2024.

A high standard deviation in variables such as Operating Cash Flow or Revenue may indicate significant disparities among companies or industries within the sample, particularly in emerging and underdeveloped countries. If GDP per capita or WUI has low variance, this may help explain their lack of statistical significance in regressions — insufficient variability reduces explanatory power.

The use of fixed effects is appropriate due to the presence of unobservable heterogeneity across countries or companies, such as regulatory quality, firm age, or managerial efficiency. The approach assumes that these omitted variables are time-invariant, which is plausible given the data span (2010–2017). Skewness or outliers in variables such as Suppliers (FORN) or Fixed Assets may violate normality assumptions, justifying the use of robust standard errors (HAC - Heteroskedasticity and Autocorrelation Consistent) in Tables 3 and 4.

Table 3 –Fixed-Effects Regression

Fixed effects, using 422 observations. 55 cross-cutting units included. Time series length: minimum 3, maximum 8. Dependent variable: GA. Robust standard errors (HAC).

	coeficiente	erro padrão	razão-t	p-valor	
const	2,54942	0,740888	3,441	0,0011	***
FCO	0,000226182	0,0003399	0,6654	0,5086	
FORN	-0,000621355	0,00049701	-1,25	0,2166	
IMOB	0,000046503	0,00010178	0,4569	0,6496	
MARGBR	0,0117683	0,00790232	1,489	0,1422	
REC	0,000637391	0,00033512	1,902	0,0625	*
ATL	-0,00111663	0,00036594	-3,051	0,0035	***
PIBCAP	-6,53E-05	4,60E-05	-1,419	0,1616	
WUIGB	0,00131031	0,00269562	0,4861	0,6289	

Source: Prepared by the Author, 2024.

Significance Level: * indicates 10%, ** indicates 5%, *** indicates 1%.

Table 3 provides the results of the longitudinal regression model with a fixed effect for the GA index as a dependent variable. For this analysis, only two variables are relevant to explain the model: Revenue, with a significance level of 10%, and Total Net Assets, which presents 1% statistical significance.

Regarding revenue, the result indicates that increases in firm revenue are weakly associated with changes in GA. However, marginal significance ($p \approx 0.10$) limits the robustness of this inference. Suggests that the volume of total net assets is a strong predictor of vertical integration. Larger firms (asset-wise) are more likely to be vertically integrated, aligning with Williamson's (1975) theory that scale facilitates internalization.

Other variables (e.g., FORN, WUI, PIBCAP) do not provide statistically significant explanatory power for GA, raising questions about the effect of macroeconomic and institutional factors.

In Table 4, where we replaced the dependent variable with Fixed Assets (FA), we observe a change in the independent variables. Now, we do not have the ATL, but we do have the Operating Cash Flow at a 5% significance level. The Revenue indicator remains a significant element in this regression, with a p-value of 1%.

Table 4 –Fixed-Effects Regression

Fixed effects, using 422 observations. 55 cross-cutting units included. Time series length: minimum 3, maximum 8. Dependent variable: Fixed Assets (FA). Robust standard errors (HAC).

	coeficiente	erro padrão	razão-t	p-valor	
const	−26,9343	278,398	−0,09675	0,9233	
FCO	0,889647	0,390892	2,276	0,0268	**
FORN	−0,407097	0,879697	−0,4628	0,6454	
MARGBR	−4,54552	4,17786	−1,088	0,2814	
REC	0,597393	0,188853	3,163	0,0026	***
ATL	−0,145395	0,241749	−0,6014	0,5501	
GA	6,36183	12,6269	0,5038	0,6164	
PIBCAP	−0,00204340	0,0108026	−0,1892	0,8507	
WUIGB	2,23214	1,48775	1,5	0,1394	

Source: Prepared by the Author, 2024.

Significance Level: * indicates 10%, ** indicates 5%, *** indicates 1%.

Operating Cash Flow (FCO) shows a significance of 5%, which indicates that companies with stronger internal liquidity are more likely to invest in fixed assets, a form of vertical integration. Reinforces the notion that internal financial robustness precedes structural shifts. We observe that the significance level for the revenue variable is 1%, confirming that the company's size and income are key factors in vertical integration decisions. This finding is consistent with those of Respino (2014) and Silva (2005).

Regarding the other variables, despite theoretical expectations, they do not appear to have an impact on FA in this sample. Again, the lack of statistical relevance may reflect aggregation bias or limitations in measuring macro variables.

Discussion of Results

The results obtained through fixed effects regressions applied to a sample of companies from emerging and underdeveloped countries indicate a statistically significant correlation between certain internal variables (such as revenue and operating cash flow) and the degree of vertical integration among companies. However, the results do not fully corroborate the hypothesis that exogenous factors such as economic uncertainty (measured by the World Uncertainty Index - WUI) and GDP per capita are direct determinants of the decision to integrate vertically.

This finding partially contradicts the classical literature on Transaction Cost Economics (Williamson, 1975, 1991), which posits that environmental uncertainty and market imperfections are fundamental motivators for the internalization of productive activities as a means of reducing transaction costs and exposure to risks. For example, authors such as Stuckey and White (1993) and Teece (1986) argue that unstable environments tend to make the market inefficient as a coordinator of transactions, which encourages companies to integrate vertically. However, the data analyzed here did not demonstrate this relationship robustly.

The results obtained, which indicate greater significance for internal variables — such as revenue and cash flow — suggest that, in contexts of countries with fragile institutions, vertical integration decisions may be more closely linked to the operational capacity of companies than to external macro-institutional conditions. This reinforces Joskow's (2005) perspective that, although the institutional environment is essential, vertical integration may also respond to endogenous factors, such as economies of scale, quality control, and maximization of operational efficiency.

It is also important to note that the lack of statistical significance for the political and economic uncertainty variables can be attributed to methodological limitations. The use of global WUI and aggregated GDP per capita by country may have masked finer sectoral and institutional dynamics. According to Henisz (2000), institutional pressures vary significantly across sectors, implying that companies in industries such as energy, transportation, and telecommunications — often protected by regulatory barriers — face different levels of institutional risk that are not adequately captured by aggregated indices.

In addition, authors such as Ferreira and Serra (2015) and Kostova et al. (2008) point out that, in countries with fragile institutional environments, operating costs increase not only due to objective economic factors, but also due to legal uncertainties, lack of contractual enforcement, and political instability — elements that may not have been fully captured by the variables used.

On the other hand, the research findings align with Oliver's (1991, 1997) criticism, who argues that although the institutional environment influences strategic decisions, companies are not merely reactive to these pressures. They may present varied strategic responses, depending on their internal capabilities, resources, and corporate objectives, which may explain why operational variables such as revenue and cash flow presented greater explanatory power in the models.

This perspective is further reinforced by the analysis of Respino (2014), who warns about the inadequacy of a deterministic approach regarding vertical integration, emphasizing that not all adverse institutional environments will necessarily result in vertical integration, since this decision involves complex trade-offs, including administrative costs and cultural difficulties of integration.

Another point that emerges from the empirical analysis is the need to refine the statistical model used. As highlighted by Gujarati (2011), the lack of significance in certain variables may be due to the presence of relevant omitted variables. In this case, future adjustments to the model are suggested, such as the introduction of sectoral and temporal control variables, the disaggregation of the WUI index by country and sector, and the incorporation of other institutional indicators, such as the Quality of Government Index, the Corruption Index (Transparency International) and the Rule of Law Index (World Justice Project).

Finally, the analysis partially confirms the proposition of Martin et al. (1998) that the adaptation of foreign companies to fragile institutional environments depends on both the degree of perceived risk and the capacity to internalize local institutional practices. What is observed is that the companies analyzed tend to respond more to their internal operating and performance conditions than to the national institutional environment, which may indicate a tendency towards greater strategic autonomy or an underestimation of institutional risks.

5. FINAL CONSIDERATIONS

The research aimed to investigate whether economic and institutional factors — especially instability and uncertainty — influence the adoption of vertical integration by companies located in emerging and underdeveloped countries. Although the specialized literature, based on the Transaction Cost Theory (Coase, 1937; Williamson, 1975, 1991), indicates that uncertain environments induce companies to internalize activities as a way of protecting value, the results obtained in this research do not fully confirm this hypothesis.

The econometric models with fixed effects revealed that internal operational variables, such as revenue and operating cash flow, have greater statistical relevance in explaining the verticalization of companies than aggregate variables of economic and political uncertainty. This suggests that, in contexts of institutional and economic instability, companies react more strongly based on their own financial structure and cash generation capacity than on external pressures. This result aligns with Oliver's (1997) approach, which argues that companies can present voluntaristic strategic responses even in restrictive institutional environments.

Furthermore, the lack of significance of the uncertainty variables may be related to the limitation of the data used, primarily due to the use of aggregated indicators (such as the global WUI) that do not capture the sectoral specificities or institutional particularities of each country in the sample. As pointed out by Henisz (2000) and Ferreira

& Serra (2015), institutional influence on business strategy is often filtered by factors such as the regulated sector, the degree of economic openness, and legal stability.

Therefore, it is recommended that future studies adopt a more disaggregated approach, with specific institutional indicators by country and sector, in addition to controls for cultural, geographic, and regulatory density variables. It is also pertinent to explore the interaction between internal capabilities and institutional pressures, in light of Resource-Based Theory and the Integrated Institutional View.

In practical terms, the results suggest that public policies aimed at institutional strengthening may not yield immediate or direct effects on a company's organizational structure. Verticalization decisions, at least in the sample analyzed, appear to be driven more by internal rationalities than by the regulatory environment. However, this apparent disconnect between the environment and strategy may mask a long-term vulnerability, as the lack of institutional alignment can generate hidden costs and significant operational risks.

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