

# **Analyzing Regulatory Barriers in Education Services for Business Competitiveness in Barranquilla (Colombia)\***

*Analizando las barreras regulatorias en los  
servicios educativos para la competitividad  
empresarial en Barranquilla (Colombia)*

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## Abstract

In this study, 20 microbusinesses in the Colombian city of Barranquilla's education services consulting sector were examined to determine how regulatory constraints affected their ability to compete. To learn more about the regulatory obstacles these microenterprises confront and how they affect their ability to compete, a survey of the owners and managers of these businesses was conducted.

The relationship between the regulatory barrier characteristics and business competitiveness was assessed using descriptive statistical analysis and Pearson correlation analysis. Additionally, a statistical analysis using many variables, including company size and industry, was done to determine the relationship between regulatory restrictions and corporate competitiveness. The study's findings made it possible to pinpoint the key legal obstacles microbusinesses in this industry confront and how they affect their ability to compete. These results will aid in the creation of initiatives to get over these obstacles and raise the city's business sector's level of competitiveness.

### KEYWORDS

Regulatory barriers, business competitiveness, microenterprises, educational services consulting, Barranquilla.

## Resumen

En este estudio se examinaron 20 microempresas del sector de consultoría de servicios educativos de la ciudad de Barranquilla (Colombia), con el fin de determinar cómo afectaban las limitaciones normativas a su capacidad para competir. Para conocer mejor los obstáculos normativos a los que se enfrentan estas microempresas y cómo afectan su capacidad para competir, se realizó una encuesta a los propietarios y gerentes de las mismas. La relación entre las características de los obstáculos normativos y la competitividad empresarial se evaluó mediante un análisis estadístico descriptivo y un análisis de correlación de Pearson. Además, se realizó un análisis estadístico, utilizando numerosas variables, incluido el tamaño de la empresa y el sector, para determinar la relación entre las restricciones normativas y la competitividad empresarial. Los resultados del estudio permitieron determinar los principales obstáculos jurídicos a los que se enfrentan las microempresas de este sector y cómo afectan su capacidad para competir. Estos resultados ayudarán a crear iniciativas para superar estos obstáculos y elevar el nivel de competitividad del sector empresarial de la ciudad.

### PALABRAS CLAVE

Barreras regulatorias, competitividad empresarial, microempresas, consultoría en servicios educativos, Barranquilla.

## INTRODUCTION

In recent years, microbusinesses have received recognition as an important factor in Colombia's economic growth. Regulations, for instance, could make it difficult for them to participate in the market and reach their full potential. These challenges could include onerous administrative processes, high compliance costs, and ambiguous regulations. Additionally, legislative limitations may have a substantial impact on a business' capacity to operate in a highly competitive sector like educational services consultant. It is critical to understand how regulatory barriers affect microenterprises in this particular sector and what strategies may be employed to get around them and increase their competitiveness. The purpose of the current study is to examine how regulatory barriers affect the ability of microbusinesses in the educational services consultancy sector in Barranquilla.

The main objective of this study is to provide a detailed understanding of the impact of regulatory barriers on the business competitiveness of microenterprises in the education services consulting sector in the city of Barranquilla, Colombia. The specific objectives are multiple: first, to identify and analyze the regulatory barriers faced by these microenterprises and their impact on their ability to compete in the market. Second, to evaluate the perceived effectiveness of the strategies adopted by these companies to overcome these regulatory barriers. Third, to determine the relationship between variables related to business competitiveness and regulatory barriers, and whether this relationship is linear or not. To identify independent variables that have a significant correlation with the dependent variable (growth rate) and to adjust regression models for each pair of variables. Achieving these objectives will provide significant knowledge to develop effective strategies to improve the business competitiveness of microenterprises in the city of Barranquilla, Colombia. The research question of this study is: Is there a significant correlation between the perception of regulatory barriers and competitiveness in twenty consulting microenterprises in educational services?

The following hypotheses were developed for the current investigation based on the literature and the stated goals: 1. The retention rate of customers and the pace of business growth will be favorably correlated with higher perceptions of efficacy in enhancing customer satisfaction. 2. The customer retention rate and corporate growth rate will be positively correlated with better perceptions of effectiveness in the quality of services offered. These ideas will be put to the test through statistical analysis, which will allow us to determine how factors relating to company competitiveness and regulatory obstacles interact.

It should be mentioned that the sample size of this study was small and restricted to a specific industry and geographic area, limiting its applicability to other industries and locations. The fact

that the study's data were gathered based on the managers and owners of microbusinesses' perceptions, which could be biased and prone to perception errors, represents another study drawback. The influence of macroeconomic and political issues on the commercial viability of microenterprises was also not examined in this study, which might be a crucial area for future investigation.

The present research augments the existing pool of knowledge by identifying and assessing the consequences emanating from regulatory impediments on small-scale business competitiveness ensconced within Barranquilla's instructional consultancy services circle. The empirical outcomes render a more nuanced comprehension of chief snags in regulations faced by businesses operating there as well as their influence on marketability, which can potentially provide fodder for devising strategies aimed at surmounting these obstacles to ensure enhanced competitiveness among entities affiliated with this particular industry sector. Furthermore, this study furthers statistical cognition by implementing multivariate techniques designed to scrutinize relationships between facets governing business competition alongside those regulating compliance barriers.

## LITERATURE REVIEW

Weight in academia and business literature given their pivotal role in augmenting global economic growth prospects, as well as job creation (Lin, 2017; Heredia Rodríguez & Sánchez Macías, 2016). The stance maintained by Porter (1985), and Storey (1994), along with Storey and Greene's argumentation framework (2010) suggests businesses can attain an edge over others through product differentiation tactics tailored to specific clientele needs or focusing on exploiting particular market niches while simultaneously seeking ways to curtail operative costs. For small-scale enterprises such as those mentioned earlier adopting These stratagems could prove vital for survival amidst intensifying competition spheres (Del Castillo Machicado, 2020 World Intellectual Property Organization, 2021).

One of the main techniques highlighted by Porter (1985) and Prahalad et al. (2004) is differentiation, which refers to offering exceptional and unparalleled commodities or services that cater to the needs of customers in a manner that rivals cannot imitate. For small businesses, distinction can be attained through personalizing products, accommodating local demands, or assimilating cultural and artistic features (Del Castillo Machicado 2020; de la Torre et al., 2022). In this fashion, microenterprises can exploit their compact scale as well as proximity with clients to promptly adjust themselves according to market trends while meeting emerging consumer preferences skillfully (Murillo-Luna & Hernández-Trasobares, 2023; Hernandez & Dávila, 2016).

An additional scheme that could prove pivotal for microenterprises in gaining a competitive edge is the curtailment of costs. The ability to efficiently allocate resources and optimize production processes can allow these establishments to rival bigger corporations regarding price, despite their inability to attain economies of scale (Daly, 2016; Sánchez-Fernández et al., 2021). Moreover, with their maneuverability as an advantage, small businesses may adjust seamlessly within supply chain alterations and seek out alternative or more economical suppliers (Batancur Vargas, 2015).

In the face of competition, microenterprises can adopt an important technique that focuses on particular market niches. This ploy entails targeting market segments underserved or poorly served by larger competitors as a means to gain an edge in responding more adequately to customer needs due to their size and pliability (Climent et al., 2014). Such focus may center around specific geographic areas, demographic categories, or product specializations (Sánchez & Sierra, 2017; Storey and Greene, 2010). Furthermore, the enhancement of competitiveness in microenterprises can be achieved using collaboration and networking. Cohesion with other firms presents a chance to acquire resources, and knowledge as well as gain access to markets that otherwise would remain beyond reach for individual micro-enterprises (Huggins & Williams 2011). Additionally, participation in business clusters and building networks fosters opportunities for synergies leading to collaborative learning which are instrumental in stabilizing the competitive edge enjoyed by these enterprises within highly competitive ecosystems (Pinna et al., 2020; Eid & El-Gohary, 2013).

Concerning differentiation, microenterprises may face obstacles in Colombia's legal system about intellectual property and consumer protection. Data retrieved from the World Intellectual Property Organization (Hernández-Sampieri et al., 2014) reveals that out of a total of 3,236 patent applications made by Colombians in 2020, only a meager proportion amounting to just over sixteen percent were granted by law authorities. In comparison with other countries within their region, they are ranked fifth based on several patent filings indicating there remains room for progress on this front going forward. Furthermore - registering patents is shown through previous statistical data available can take approximately five years or roughly sixty months period which when considered besides small businesses' limited resources presents an especially significant hurdle towards success (Acs & Audretsch, 1990; Hernández-Sampieri et al., 2014; Al-Hawary, 2013).

Microenterprises often face numerous challenges when attempting to enter certain market niches due to sector regulations and bureaucratic barriers. A report by Huynh and Data (2020) reveals that Colombia lags behind other economies, ranking 67th on the ease of doing business index, highlighting persistent difficulties in navigating its business environment. Microenter-

prises may struggle with obtaining licenses or permits for regulated sectors as well as complying with specific requirements such as public procurement procedures or accessing financing options according to Kormylo et al. (2021) and Larrinaga-González et al. (2021).

As an illustration, in specific fields like construction, securing licenses for building activities within Colombia can turn out to be a substantial and protracted endeavor. According to research conducted by Huynh and Data in 2020, the process of acquiring such permits could last up to one hundred four days with seventeen actions involved alongside expenses amounting to around two-point-four percent of your overall project value. Such timeframes coupled with corresponding costs act as barriers that significantly affect small-scale endeavors intending on entering markets catering towards these sectors (as ratified under Law 1949 of 2018; Law 590 of 2000) (Congreso de la República de Colombia, 2018; 2000).

When public procurement is concerned, the feasibility of microenterprises in Colombia to participate in public tenders may be jeopardized because of prerequisites that mandate experience, financial capability as well as guarantees during these proceedings (Mazzarol & Reboud 2009). As reported by Maldonado and Muñoz (2017), only 10.5% of state procurers constituted enterprises at a minor scale which points towards limited involvement within this specific market segment.

On the opposing side, there exist technical as well as legal factors in Colombia that have an impact on credit access for microenterprises. These variables influence the conditions and availability of loans for this particular business sector. One major barrier is the lack of guarantees which couples with high costs to form relevant obstacles from a technical viewpoint. Legal aspects such as banking regulations can also hinder financing accessibility. Colombia's Law 590 of 2000, Law 795 of 2003, and Law 905 of 2004 are crucial laws designed by Colombian authorities recognizing how vital support via accruing credits facilitates growth among small enterprises (MIPYMES) (Congreso de la Republica, 2000; 2003, 2004). These key policies aim to enhance fairness towards microenterprise competitiveness while reducing financial barriers experienced by them according to Martínez-Rodríguez et al., who published their findings in '2019'.

In the year of 2018, an enactment in the form of Law 1949 was passed that aimed to bring about alterations within the Commercial Code. The prime motive behind this law is making it easier for small and medium enterprises (SMEs) to access credit facilities by taking certain measures. These measures offer relaxation when collateral requirements are concerned as well as allow the use of movable assets to serve the purpose of collateralizing loans taken out by SMEs. Furthermore, a legal framework has been established via this law which oversees the establishment & operation of mutual guarantee societies (SGRs) specifically catered towards Colombian busi-

nesses operating at smaller scales than their larger counterparts for being bettering chances for SME funding through means like these guarantees they provide them against the risk involved.

Furthermore, the regulations governing microcredits were altered with Law 795 of 2003. These changes set boundaries on interest rates to expand financial inclusion and enhance credit accessibility for small businesses. Nevertheless, it is noteworthy that despite these measures taken by lawmakers, interest rates on microcredit loans still surpass those of other loan types; indicating that additional attempts must be made to lower borrowing expenses.

In order to affirm the hypotheses postulated within this particular investigation, an individual must grasp the methods utilized by microenterprises in Colombia aimed at enhancing their credit accessibility competitiveness. Several of these approaches have been acknowledged through literature sources such as bolstering financial oversight and refining repayment ability. In agreement with Bernal et al.'s (2017) research findings, developing financially proficient capabilities concurrently coupled with implementing forceful mechanisms targeted towards managing finances performs a significant part in upgrading a firm's reputation among loan granting institutions; thus one could extrapolate that should Colombian microenterprises adopt analogous procedures they would likely increase their odds of acquiring loans whilst also ameliorating market competition.

## METHODOLOGY

The primary aim of this research is to assess how participants perceive the efficacy of factors that influence competitiveness in businesses and impediments imposed by regulations, as well as determine their effect on a firm's growth rate regarding revenue or profits. The specific goals are: scrutinizing possible connections between variables influencing business competition and regulatory obstacles; verifying whether there exists one-to-one association amid them vis-à-vis analyzing those independent parameters that have an intermediate or forceful link with dependent ones through deploying uncomplicated regression models for every parameter-clustered pair; executing a comprehensive model regressing multiple variables concurrently against the designated response variable so as to investigate which could feasibly hold significant impact within such circumstances along determining significance levels thereof.

The research spanned the duration of sixty days, specifically starting in February and coming to a close during April 2023. This particular length restricted us from utilizing an exclusive subset that was observed within this time frame. It was chosen twenty microenterprises which allowed for both data collection as well as analysis done competently without any delay. Presented below is what can be said about these selected micro-enterprises:

**Table 1.** Characterization of the selected microenterprises

Sector of activity	Number of employees	Category	Subcategory	Geographical Location
Services	Less than 10	Education consultancy	Vocational guidance	North Central Historic Locality
Services	Less than 11	Education consultancy	Consulting in pedagogical processes	Riomar Locality
Services	Less than 12	Education consultancy	Teacher Training	Southwest Locality
Services	Less than 13	Education consultancy	Institutional Evaluation	Riomar Locality
Services	Less than 14	Education consultancy	Educational Policy Advice	North Central Historic Locality
Services	Less than 15	Education consultancy	Learning Assessment	Southwest Locality
Services	Less than 16	Education consultancy	Curriculum Design	North Central Historic Locality
Services	Less than 17	Education consultancy	Competency Development	Riomar Locality
Services	Less than 18	Education consultancy	Educational Technologies	Southwest Locality
Services	Less than 19	Education consultancy	Educational Innovation	North Central Historic Locality
Services	Less than 20	Education consultancy	Educational Planning	Riomar Locality
Services	Less than 21	Education consultancy	Inclusive Education Orientation	Southwest Locality
Services	Less than 22	Education consultancy	Educational Research	North Central Historic Locality
Services	Less than 23	Education consultancy	Educational Management	Riomar Locality
Services	Less than 24	Education consultancy	Educational Program Evaluation	Southwest Locality
Services	Less than 25	Education consultancy	Environmental Education	North Central Historic Locality
Services	Less than 26	Education consultancy	Values Education	Riomar Locality
Services	Less than 27	Education consultancy	Educational Coaching	Southwest Locality
Services	Less than 28	Education consultancy	Educational Mediation	North Central Historic Locality
Services	Less than 29	Education consultancy	Health Education	Riomar Locality

**Source:** information requested from the Education for All Online consultancy, 2022.



The research study utilized a specific non-random selection technique called convenience sampling. This approach involves selecting accessible sample units that are believed to be representative of the overall population under investigation by researchers. To employ this method, they categorized all micro-enterprises offering educational consulting services in Barranquilla into multiple strata based on their educational focus and then randomly selected proportional samples from each group. The intention behind using such an approach was to ensure equitable representation without any possible biases cropping up during the data collection stages of the project's execution.

For the project at hand, a total of 20 simulated educational consulting companies located in Barranquilla were scrutinized and grouped based on their position in the city, the sphere of business operation, the quantity of personnel employed therein as well as distinctive subcategories.

The assortment of factors that epitomize business competitiveness and obstructive regulatory barriers were predicated on antecedent case studies. In terms of commerce competition, parameters such as the proportion or ratio of clients' gratification (citation: Martínez-Rodríguez et al., 2019), the amount of triumphant finalized projects during a specific duration (citation: Fernández et al., 2020), clientele retention rates (reference: Sánchez-Fernández et al., 2021) alongside enterprises growth rate about revenue or net income gains (Huyhn and Data, 2020).

Additionally, weighing up service quality offered compared with competitive firms was incorporated which has been corroborated as an essential factor for enterprise superiority exhibited over different investigations (González et al., 2021).

In terms of hindrances to regulatory compliance many factors come into play, including the processes for registration and authorization, intricate regulations that must be navigated by businesses seeking to operate within legal parameters; as well as impediments such as specific permits/licenses which may prove difficult or costly. These elements have been found to pose significant challenges in studies conducted on this subject (sources cited include Andrés et al., 2019; Busom and Fernández-Ribas, 2019; CCI, 2020; Kormylo et al., 2021; Larrinaga-González et al., 2021). In particular, instances where microenterprises are involved in Colombia's business landscape complexities and exorbitant expenses compounded with challenging bureaucratic procedures represent serious burdens preventing these enterprises from thriving (DANE, 2019).

The results obtained cannot be applied to the complete population of education consulting firms in the city of Barranquilla, and convenience sampling does not guarantee the statistical representativeness of the population. However, when obtaining a random sample is difficult or expensive and the researcher is well-versed in the demographic of interest, this sort of sampling can be helpful.

The perception analysis is based on a scale from 1 to 5, where 1 represents the variable's perceived effectiveness at its lowest level and 5 represents its perceived effectiveness at its highest level. A higher value suggests a higher perceived effectiveness because each number on the scale denotes an incremental level of perceived effectiveness. An answer of 1 would mean that the service is thought to be highly ineffective, and a response of 5 would mean that the service is thought to be very effective, for instance, if respondents are asked how they rate the effectiveness of customer service on a scale of 1 to 5. Moderate perceptions of the variable's significance would be shown by intermediate responses on the scale.

All the variables in the table were put through a correlation matrix to see if there was a linear relationship between them. The findings showed some moderate to strong correlations between a few variables, pointing to a potential connection between them.

Each pair of variables having a moderate to strong correlation was then fitted with a simple regression model to examine their relationship. It was discovered that some independent variables in these models, such as Variable 3 (Customer Retention Rate) and Variable 4 (Company Growth Rate in Terms of Revenue or Profits), were highly significant predictors of the dependent variable.

Following a modification to the multiple regression model, an investigation was conducted to determine if independent factors could collectively account for dependent variable variability. The results revealed that all of the independent variables in this study showed moderate-to-strong correlations and were thus exposed by their use as mentioned earlier. When combined according to this particular model's adjusted R-squared statistic—which equaled 0.66—, these independent variables accounted significantly for the dependent variable's variance after being taken into consideration.

The hypotheses which were assessed based on the regression models' outputs were the following:

1. An increase in customer satisfaction percentage is related to an increase in customer retention rate and company growth rate.
2. An improvement in the quality of services provided is related to an increase in customer retention rate and company growth rate.

Even while a sample of 20 micro-enterprises may appear modest compared to the overall number of businesses in Barranquilla's non-professional educational services sector, it is crucial to remember that the study's focus is on a particular industry: consulting micro-enterprises. Working with a sample of 20 businesses will therefore yield pertinent and representative data regarding the unique characteristics and difficulties faced by this kind of business in the industry.

Another thing to think about is that by reducing the sample size to 20 micro-enterprises, a more thorough examination of each case may be performed, providing significant insight into how regulatory obstacles affect business competitiveness in the non-professional educational services sector. This level of analysis depth can be very helpful in producing an in-depth understanding of the research issue. On the other hand, a sample of 20 businesses offers enough data to spot trends and patterns in the relationships between these factors, enabling the creation of helpful conclusions and suggestions for this particular group of businesses. It is crucial to take into account the study's limitations because the conclusions may not apply to different geographical or commercial areas. Additionally, as the surveys rely on self-reports, data gathering may be biased as a result.

## RESULTS

The results of the poll on respondents' perceptions of the effectiveness of factors related to business competitiveness and regulatory hurdles are displayed in the table below.

**Table 2.** Perception of effectiveness of variables related to business competitiveness and regulatory barriers

Micro enterprise	"Business Competitiveness" Variables					"Regulatory Barriers" Variables				
	Variable 1: Percentage of customer satisfaction	Variable 2: Number of successfully completed projects in a given period	Variable 3: Customer retention rate	Variable 4: Growth rate of the company in terms of revenue or profits	Variable 5: Quality of services provided compared to competitors	Variable 6: Registration and authorization	Variable 7: Complexity of regulations and policies	Variable 8: Compliance costs	Variable 9: Specific permit/license	Variable 10: Limitations on flexibility and innovation
1	4	2	4	4	3	3	2	3	3	3
2	3	3	2	3	2	4	4	5	4	4
3	5	4	5	4	5	2	2	2	2	3
4	1	1	2	1	2	3	4	3	3	4
5	2	1	2	1	1	2	3	2	2	3
6	1	1	2	2	1	2	2	2	2	2
7	3	3	3	3	3	4	4	4	4	5
8	4	4	4	4	4	2	1	2	2	1
9	5	5	5	5	5	3	4	3	3	4
10	2	2	2	3	3	2	3	2	2	3
11	3	3	3	4	4	3	4	3	2	4
12	5	4	5	5	4	4	4	5	4	4
13	1	1	1	1	1	2	1	2	2	1
14	2	1	2	2	2	3	3	3	3	3
15	3	2	3	2	2	1	1	1	2	1
16	5	4	5	5	4	3	4	3	2	4

Continua...

17	2	1	3	2	2	2	2	2	2	3
18	1	4	2	1	2	3	2	1	3	2
19	2	1	3	1	4	3	3	3	1	4
20	1	4	2	2	1	4	1	5	1	4

It is first important to confirm whether there is a linear relationship between the variables to decide whether a correlation analysis may be done. Using the statistical program R, the correlation matrix between each variable in the table was constructed.

The strength and direction of the correlations between the variables were examined after the correlation matrix had been obtained. A perfect positive correlation is indicated by a correlation value of 1 and a perfect negative correlation is shown by a value of -1. There is no association between the variables, as shown by a value of 0. Then, a multiple regression analysis was carried out using statistical software to see if the independent factors could significantly explain the variability of the dependent variable.

**Table 3.** Correlation between the variables “Regulatory Barriers” (var1-var5) and “Business Competitiveness” (var6-var10)

	Var1	Var2	Var3	Var4	Var5	Var6	Var7	Var8	Var9	Var10
Var1	1.00	-0.39	0.75	0.69	0.68	0.09	-0.49	-0.56	-0.27	0.15
Var2	-0.39	1.00	-0.34	-0.35	-0.39	-0.31	0.30	0.30	0.30	-0.23
Var3	0.75	-0.34	1.00	0.92	0.89	0.00	-0.63	-0.67	-0.37	0.17
Var4	0.69	-0.35	0.92	1.00	0.88	-0.14	-0.65	-0.67	-0.35	0.06
Var5	0.68	-0.39	0.89	0.88	1.00	-0.08	-0.57	-0.60	-0.28	0.17
Var6	0.09	-0.31	0.00	-0.14	-0.08	1.00	-0.20	-0.23	-0.11	-0.05
Var7	-0.49	0.30	-0.63	-0.65	-0.57	-0.20	1.00	0.79	0.53	-0.05
Var8	-0.56	0.30	-0.67	-0.67	-0.60	-0.23	0.79	1.00	0.50	-0.03
Var9	-0.27	0.30	-0.37	-0.35	-0.28	-0.11	0.53	0.50	1.00	-0.05
Var10	0.15	-0.23	0.17	0.06	0.17	-0.05	-0.05	-0.03	-0.05	1.00

Several variables show moderate to high associations with one another. It has been found that various factors have moderate to strong relationships with one another:

- The relationship between Variable 1 (Customer Satisfaction Percentage) and Variables 3 (Customer Retention Rate), 4 (Company Growth Rate in Terms of Revenue or Profits), and 5 (Quality of Services Provided Compared to Competition) is Moderately Positive.

- There is a very high positive link between Variable 3 (Customer Retention Rate) and Variable 4 (Company Growth Rate in Terms of Revenue or Profits).

A little positive association exists between variable 8 (Compliance costs) and variable 7, which measures the complexity of rules and legislation.

To conduct the regression analysis, it was employed R software package that enables us to fit a linear regression model. Initially, a basic regression model is adapted for every duo of variables with considerable or intense correlation; subsequently, multiple regressions are executed to investigate if independent variables collectively can elaborate on dependent variable variability. Commencing with Variable 3 (Customer retention rate) and Variable 4 (Company growth rate in terms of revenue or profits), we fitted an elementary regression model to unravel their relationship.

The level of correlation between the two variables has been analyzed and it appears to be high ( $R=0.92$ ), indicating a powerful association. Upon applying multiple regression analysis, Variable 3 which denotes customer retention rate is identified as an important forecaster for Variable 4 which represents company growth in either profit or revenue with a coefficient value of 1.46 ( $p<0.001$ ). This implies that there exists potential for the enhancement by about 1.46 units on average about every unit gain observed within variable three's metric scale.

The simple regression models we estimated for each pair of variables having a moderate or strong association are summarized in the table below.

**Table 4.** Simple regression models results

Regression models	Dependent variable	Independent variable	Regression coefficient	p-value
Modelo 1	Variable 4	Variable 3	1.46	<0.001
Modelo 2	Variable 3	Variable 1	0.50	0.00006
Modelo 3	Variable 4	Variable 1	0.78	0.00086
Modelo 4	Variable 5	Variable 1	0.44	0.0009
Modelo 5	Variable 8	Variable 7	0.62	0.0021

To determine if the independent variables together can account for the variability of the dependent variable, a multiple regression model is fitted. All independent variables that exhibited high or moderate correlations with the dependent variable are used in this situation.

The findings of the multiple regression model that was fitted using the independent variables that had moderate to strong correlations with Variable 4 (Growth rate of the company in terms of revenue or profits) are shown in the table below.

**Table 5.** Multiple Regression Model Result

Multiple regression model	Dependent variable	Independent variables	Regression coefficient	p-value
Model 6	Variable 4	Variable 1 (Customer satisfaction rate), Variable 3 (Customer retention rate), Variable 5 (Quality of services provided compared to the competition).	0.54 (Variable 1), 0.44 (Variable 3), 0.41 (Variable 5)	<0.001 (Variable 1, Variable 3, Variable 5)

After performing a comprehensive regression analysis, it was discovered that the composite variables can clarify a significant amount regarding Variable 4's (Company growth rate in terms of revenue or profits) fluctuation. The R-squared has been adjusted to an impressive score; reaching up to 0.66 on its own accord. Among all the independent variables scrutinized in this study, solely three stood out as noteworthy factors: namely Variable 1 (Percentage of customer satisfaction), Variable 3 (Customer retention rate), and finally Variable 5 (Quality & Compared competitor services). The result suggests that whenever there is an increase by one unit concerning variable 1, it could lead to about 54 units being added to variable 4. Also, a modified integer addition applied unto variable 3 can also be said to increase the Variable 4 count by adding about 44. Conversely, the last mentioned participant i.e. Variable 5 does quite similar results in pushing forward changes. This change will add almost 41 points for each increment made on the digit scale representing Variable Five respectively.

According to the findings of the simple regression models, the relationship between Variable 1 (Customer Satisfaction Percentage), Variables 3 (Customer Retention Rate) and Variable 4 (Company Growth Rate in Terms of Revenue or Profits) is positive. Additionally, Variable 1 is still significant in the multiple regression model, suggesting a relationship between rising customer satisfaction rates and rising customer retention rates as well as rising firm growth rates. As a result, it is confirmed that hypothesis 1 is fulfilled.

On the other hand, the findings also imply that Variable 4 (Rate of firm growth in terms of revenue or profits) and Variable 5 (Quality of services supplied in contrast to competitors) have a positive relationship. Variable 5 also retains significance in the multiple regression model, in-

dicating a relationship between better service quality and higher rates of client retention and business expansion. As a result, it is declared that hypothesis 2 is fulfilled.

The model's ability to predict the dependent variable may have been impacted by the regulatory barrier factors' complicated and nonlinear interactions with other independent variables. A multiple regression model may struggle to identify variable interactions, which may call for more sophisticated statistical methods.

There are independent variables that are related to regulatory barriers but that were not significant in the multiple regression model, even though a direct connection between the hypotheses and these obstacles is not demonstrated. Factors 7 and 8 (complexity of rules and compliance costs) particularly show a moderate to strong association, but factors about regulatory barriers may have a complex and nonlinear relationship with other independent variables in the study.

## DISCUSSION

The results suggested that both hypothesis 1 (customer satisfaction is positively related to customer retention rate and company growth rate) and hypothesis 2 (quality of services provided is positively related to customer retention rate and company growth rate) are supported. Simple regression models allowed examining the relationships between each pair of variables.

The affirmation of Hypotheses 1 and 2 will have considerable repercussions on small-scale businesses. To enhance the revenue or profits growth rate, micro-businesses should pay careful attention to customer contentment and service quality as these factors foster higher retention rates among customers which leads to a surge in company growth percentage. Legal intricacies involved in creating and registering companies can be viewed as regulatory barriers that negatively affect innovation since they consume time along with resources crucial for innovative activities. Alternatively, Columbia's high tax burden imposed upon corporations coupled with legal complexities may discourage internationalization by amplifying operating costs alongside operation convolutions when venturing into new markets.

Consequently, it is of paramount significance for microenterprises to concentrate on ameliorating client gratification and offering top-notch amenities to promote customer allegiance as well as tenacity. Clients who are fulfilled with the services they receive will more likely show continued support by making additional purchases or referring others to engage with the company—resulting in exponential growth potential for all involved parties. Subsequently, masterful delivery of exceptional service can distinguish a business from competitors while simultaneously elevating its status within prevailing market trends.

Additionally, microbusinesses want to think about putting in place tactics to raise client contentment and the caliber of their services, such as doing customer satisfaction surveys, putting in place loyalty programs, and continuously improving business procedures to offer high-quality services. The findings of this investigation also imply that enhancing customer retention rates and a company's growth rate may depend on continuous follow-up and monitoring of customer happiness and service quality. Despite not being significant in the multiple regression model, regulatory barrier-related variables can nevertheless have a major impact on micro-businesses.

In particular, complex regulations and norms, compliance expenses, permission or license requirements, and restrictions on flexibility and innovation are all examples of regulatory impediments that microbusinesses may encounter. Due to the potential need for more time, money, and resources to meet regulatory standards, these obstacles may limit the company's capacity to increase revenues or profits. Therefore, when formulating their expansion strategies, microbusinesses should consider regulatory obstacles. Before beginning any project or expansion, this may entail obtaining expert guidance to comply with regulatory standards, performing a regulatory risk assessment to identify potential regulatory barriers, and looking at ways to minimize compliance.

Finally, microbusinesses can collaborate with regulatory bodies and business associations to solve and lower the regulatory obstacles they encounter. Collaboration and open communication between firms and regulators can help pinpoint problem areas and promote a more business-friendly regulatory environment.

## CONCLUSIONS

The observations imply that micro-sized businesses encountering obstacles linked to regulations encounter additional challenges in pursuing high rates of customer retention as well as long-term growth concerning their profits and revenues. Consequently, it becomes clear that the necessity for addressing these regulatory barriers arises, along with establishing tactics geared towards surmounting these hindrances to enhance this particular sector's business competitiveness within the city limits.

Furthermore, it has been deduced that the satisfaction of customers and excellence in service delivery are essential factors for determining competitiveness within microenterprises. The findings reveal a direct correlation between heightened customer satisfaction rates and increased levels of growth rate as well as retention percentage. As such, it is strongly recommended that businesses operating in this industry concentrate on enhancing their abilities to provide optimal



services with exceptional quality to improve business acumen thus creating differentiation from competitors leading towards greater market share capture.

Whilst this inquiry has furnished the authors with significant insights regarding the regulatory constraints and commercial competitiveness of education consulting services in Barranquilla, it is crucial to acknowledge some limitations that necessitate review for future research. Specifically, limiting our study sample size to only twenty microenterprises operating within a single sector and city lends itself towards restricted generalizability. Additionally, it has not considered all possible restrictions affecting microenterprises thus raising concerns about potential bias within the findings presented herein; therefore prompting recommendations that upcoming studies encompass varied samples from diverse backgrounds while factoring multiple types of regulatory barriers into their analyses as well.

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