

Scientific Journal of Applied Social and Clinical Science

ISSN 2764-2216

vol. 5, n. 12, 2025

... ARTICLE 11

Fecha de aceite: 21/11/2025

Fecha de envío: 17/11/2025

INFLUENCE OF PRODUCTION FACTOR COSTS ON MARKET SUPPLY

Doreidy Melgarejo Galindo

National Technological Institute of Mexico/Úrsulo Galván Technological Institute
Úrsulo Galván, Veracruz
ORCID 0000-0002-8885-4769

Loida Melgarejo Galindo

National Technological Institute of Mexico/Úrsulo Galván Technological Institute
Úrsulo Galván, Veracruz
ORCID 0000-0002-1552-5999

Jerson Müller Tejeda

National Technological Institute of Mexico/Úrsulo Galván Technological Institute
Úrsulo Galván, Veracruz
ORCID 0000-0002-4256-7684

Juan Diego Ortega Cervantes

National Technological Institute of Mexico/Úrsulo Galván Technological Institute
Úrsulo Galván, Veracruz



All content published in this journal is licensed under the Creative Commons Attribution 4.0 International License (CC BY 4.0).

Abstract: Business development is a fundamental part of a region's social and economic development. Therefore, it is important for companies to implement strategies that favor their supply and sales levels, contributing to their evolution and growth. Given its importance, companies are interested in implementing strategies that increase sales, but for implementation, it is necessary to understand the market and the behavior of supply and demand, which facilitates the successful implementation of strategies. This is the rationale behind this research, whose objectives are to identify the level of market supply and the level of production factor costs and to evaluate the relationship between production factor costs and market supply as part of the market analysis. The research uses a quantitative method to study a phenomenon that can be quantified, as well as a correlational method, since it examines the relationship between the study variables, and a cross-sectional method, since it is carried out over a specific period of time and with a specific population. The study used a survey technique and was designed as a questionnaire aimed at a sample of companies in the Veracruz state, Mexico. The study obtained data that, when analyzed, achieved the objectives and evaluation of the research hypothesis.

Keywords: Consumer, producer, sellers.

INTRODUCTION

The growth of companies is largely determined by their sales levels according to consumer demand, but also by the supply that producers and companies are willing to provide.

Market supply refers to the complete relationship between the price of a good

and the quantity of that good offered (Parkin and Loría, 2010).

Market supply is often influenced by various factors, such as the price of the good, prices of inputs or factors of production, technology, expectations, and number of sellers (Mankiw, 2012), which have been the subject of interest for study by various authors.

Among the factors that can often influence market supply are the costs of production factors, understood as the factors used in any process of production of goods and services, which can be summarized as: labor, capital, and land. (Faculty of Economic and Administrative Sciences - University of the Republic, 2012).

Given that supply is a fundamental part of achieving market equilibrium, in which consumers and producers are satisfied with the level of production and sales and which promotes business development, it is important to study it, as well as the factors that influence it, in order to try to adjust it to the needs of producers or companies.

Due to the importance of the issue for organizations, such as the specific case of companies in the central region of the state of Veracruz, which have experienced difficulties in their sales, it is advisable to conduct research to determine whether the costs of production factors influence their supply and production, which, in turn, influences the price of the product and, therefore, consumer demand, affecting their sales levels.

Therefore, the objectives of the research are to *"Identify the level of market supply in municipalities in the central region of the state of Veracruz," "Identify the level of production*

factor costs in the central region of the state of Veracruz,” and “Evaluate the relationship between the level of production factor costs and the level of market supply in the central region of the state of Veracruz.” which leads to the research question: Do production factor costs influence market supply in the central region of the state of Veracruz? and the hypothesis: Production factor costs influence market supply in the central region of the state of Veracruz. The study is limited to companies in the municipalities of Actopan, La Antigua, Puente Nacional, Úrsulo Galván, Veracruz, and Xalapa, located in the central region of the state of Veracruz.

Finally, the results obtained made it possible to identify the level of market supply and the level of production costs, as well as to evaluate the relationship between both study variables, which serves as reference information for companies in the study area in making supply and production decisions based on production costs.

BODY

As part of the project “Factors impacting market supply that influence business development” (Melgarejo et al, 2025), the study has a quantitative method because it studies phenomena that can be quantified and uses statistical tests for data analysis, as well as a correlational method because it examines the relationship between variables.

The study begins with documentary research, in which written information on a specific topic was reviewed in order to establish relationships, differences, stages, positions, or the current state of knowledge regarding the topic under study (Bernal, 2010). This documentary review provided insight into the state of the art of the

topic and the generation of the theoretical framework.

The research is considered descriptive, as it seeks to specify the important properties, characteristics, and features of any phenomenon being analyzed (Hernández et al., 2010) and is mainly supported by techniques such as surveys, ... and documentary review (Bernal, 2010). The fieldwork was carried out in the municipalities of Actopan, La Antigua, Puente Nacional, Úrsulo Galván, Veracruz, and Xalapa, located in the central part of the state of Veracruz.

For the field research, a survey technique was used, and a questionnaire consisting of multiple-choice questions, a rating scale, and open-ended questions was designed as a measurement tool. It was administered to a sample of companies or entrepreneurs in the municipalities of interest for the study during a specific period of time, considering it a cross-sectional study “... at a specific time and in a specific population.” (Álvarez and Delgado, 2015).

The measurement instrument designed (questionnaire) was validated in March and April 2025 through a pilot test on a small sample of companies. As no questions or suggestions for improvement arose regarding the questionnaire and the preliminary results obtained were favorable for the analysis to achieve the research objectives, the instrument was considered validated.

With the questionnaire validated, the final survey was conducted during the period from May to August 2025 on a sample. To determine the sample size, the formula for calculating sample size for finite populations was applied at a confidence level of 90% and a margin of error of 10%, considering as the population of interest compa-

nies from in the study area. At that time, the survey was applied to a random sample of 270 companies distributed in the aforementioned municipalities.

Finally, during the months of September and October 2025, the data was represented and analyzed in a spreadsheet (Excel) and SPSS Statistics software, allowing for the obtaining of results that help achieve the objectives, answer the research question and evaluate the hypothesis, as well as formulate conclusions and recommendations.

The research reveals the following results, which made it possible to identify the level of market supply and the level of production factor costs, and in this regard:

Most of the companies studied (76%) have 1 to 10 employees, followed by 12% with 11 to 30 employees, 6% with 31 to 50 employees, 4% with 101 to 250 employees, and only 2% with 51 to 100 employees, as shown in Figure 1.

Regarding the level of market supply, 56% of companies indicate a medium level of supply, followed by 28% with a high level, 10% with a very high level, 6% with a low level, and 1% with a very low level, as shown in Figure 2.

Regarding the level of production factor costs, the majority (51%) rate them as medium, followed by 37% with a high level, 8% as low, and 4% as very high, as shown in Figure 3.

Finally, regarding the evaluation of the relationship between the level of production factor costs and the level of market supply in the central region of the state of Veracruz, Figure 4 shows a scatter plot with a negative linear relationship between the level of production factor costs (X) and the level of market supply (Y). Likewise, the diagram

shows a simple linear correlation coefficient of -0.3599 , indicating that there is a low negative correlation between the variables under study, which indicates that if there is a low relationship or interdependence between the variables, i.e., the level of production factor costs has a low negative influence on the level of market supply, i.e., as the level of costs increases, the level of supply decreases slightly and vice versa (Figure 4).

CONCLUSIONS

According to the results, it can be concluded that most companies (76%) with 1 to 10 employees belong to the microenterprise category, as shown in Figure 1.

With regard to the market supply level of companies located in the central area of Veracruz, the majority (84%) have a medium to high level, as shown in Figure 2, which demonstrates the achievement of the objective of *“Identifying the market supply level in municipalities in the central area of the state of Veracruz.”*

Regarding the level of costs, the majority (88%) of organizations evaluate them as medium to high, as shown in Figure 3, which demonstrates the achievement of the objective of *“Identifying the level of production factor costs in the central area of the state of Veracruz.”*

Likewise, the objective of *“Evaluating the relationship between the level of production factor costs and the level of market supply in the central region of the state of Veracruz”* was achieved, as shown in Figure 4, which represents a scatter diagram with a simple linear correlation coefficient of -0.3599 , indicating a low negative correlation between the study variables, which represents the low

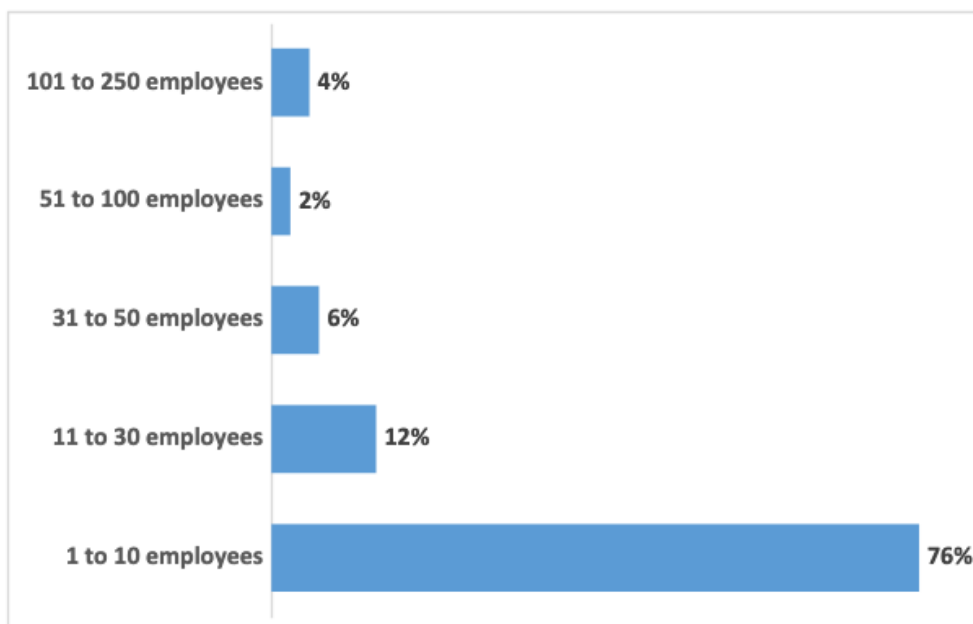


Figure 1. Number of employees in companies.

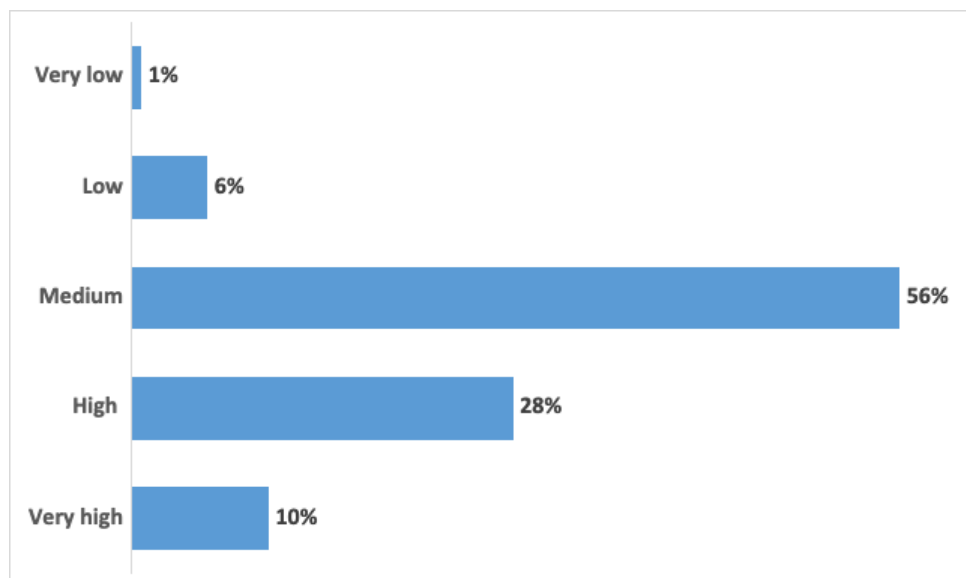


Figure 2. Market supply level.

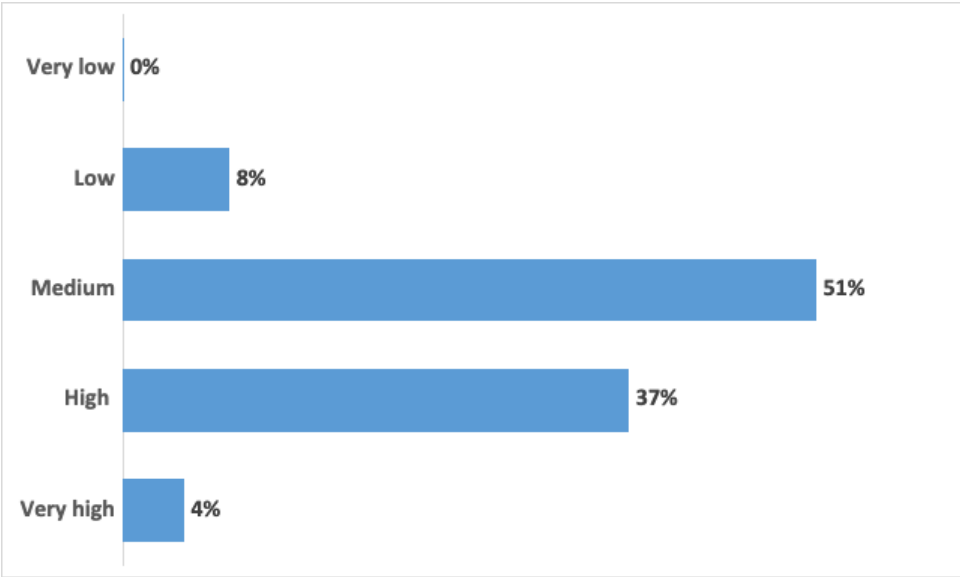


Figure 3. Level of production factor costs.

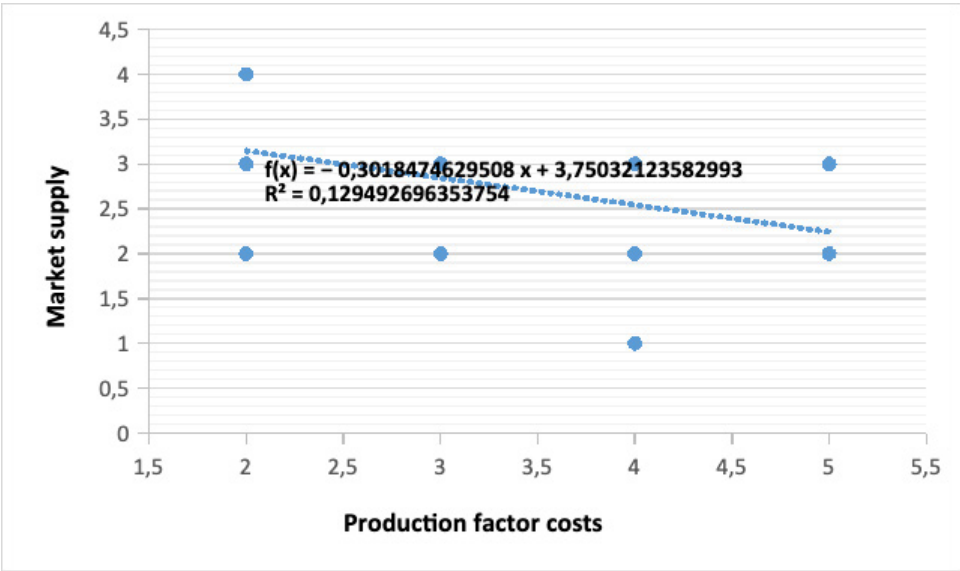


Figure 4. Relationship between the level of production factor costs and the level of supply.

relationship or influence of the level of costs of production factors on market supply in a negative sense, such that if costs increase, supply decreases, and vice versa. The fact that one variable influences the other justifies performing a regression analysis to describe this relationship or influence.

Also, with what is indicated in Figure 4, it is possible to answer the research question: *Do the costs of production factors influence market supply in the central area of the state of Veracruz?* and accept the hypothesis “*The costs of production factors influence market supply in the central area of the state of Veracruz.*”

Finally, given that the costs of production factors influence market supply, it is suggested that companies in the area under study carry out cost analyses that allow them to identify those high costs for which they can implement strategies to reduce them, which will be reflected in an increase in market supply and in company sales, favoring business development.

ACKNOWLEDGMENTS

To the National Technological Institute of Mexico/Úrsulo Galván for facilitating the research and to the people who participated in the study.

REFERENCES

- Álvarez Hernández, G., & Delgado De la Mora, J. (2015). Diseño de Estudios Epidemiológicos.I. El Estudio Transversal: Tomando una Fotografiade la Salud y la Enfermedad. *Fies*, 28. Obtenido de <https://www.medigraphic.com/pdfs/bolclin-hosinfson/bis-2015/bis151f.pdf>
- Bernal, C. D. (2010). *Metodología de la investigación* (Tercera ed.). Bogotá, Colombia: Pearson.
- Facultad de Ciencias Económicas y de Administración - Universidad de la República. (2012). *Introducción a la economía*. Obtenido de <https://drive.google.com/file/d/1mA-VU7kS6R21pM5klABSDSiNEs5B3BNif/view>
- Hernandez Sampieri, R., Fernández Collado, C., & Baptista Lucio, M. D. (2010). *Metodología de la investigación* (Quinta ed.). Cd. de México: México.
- Mankiw, G. (2012). *Principios de economía* (Sexta ed.). Cengage Learning. Obtenido de https://drive.google.com/file/d/1M62bmQ-X_BifArVl9TujwU6WULC49bnF/view
- Melgarejo Galindo, D., Melgarejo Galindo, L., Castro Lara, R. J., & Müller Tejeda, J. (2025). *Factores de impacto en la oferta del mercado que influyen en el desarrollo empresarial*. México. Obtenido de <https://proyectos.dpii.tecnm.mx/index.php/>
- Parkin, M. y Loría, E. (2010). *Microeconomía. Versión para Latinoamérica*. México: Pearson Educación.