



## IMPACT OF BUSINESS PERFORMANCE AND TQM ON SMEs IN MEXICO

Vanessa Yesenia, Vázquez Lerma<sup>1</sup>

José G. Vargas-Hernández, MBA; PhD<sup>2</sup>

### Summary

The purpose of this research is to analyze the degree of effectiveness of TQM in SMEs in Mexico based on Business Performance, considering that Business Performance is related to Total Quality Management. This research is of an analytical and descriptive type since no statistical method was used, only the variables and the research problem will be analyzed exhaustively and in great detail, and descriptive because tables and tables can be found to help facilitate understanding of these important concepts. This research will analyze the impact between the two variables, and with it, employers will be able to make the necessary changes in their production line or in their employees to obtain better and greater positive results.

**Keywords:** Business Performance, Total Quality Management (TQM), Pymes

**JEL:** M12, M21, M31.

### 1. Introduction

“Today the competitiveness in the market is very high. The companies day by day seek to face this situation by using new techniques that increase their profits and improve corporate performance ” (Alfalla Luque, 2012, pp. 64-88).

It is necessary to realize that innovations drive business and that they are considered as tools to maintain competitiveness. All innovation must contribute to the creation of added value for the client and for the company, the importance of this research is to find a method or tools that, as part of daily use in organizations, can have a presence in the market, generating new standards of competitiveness , and business performance.

The hypothesis of this research is that Business Performance is related to Total Quality Management. With these data, it is possible to start to develop in a deeper way

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<sup>1</sup>Autonomous University of Sinaloa Vanessa\_yvl@hotmail.com

<sup>2</sup>University of Guadalajara- Josevargas@cucea.udg.mx

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what each of these concepts consists of considering that our objective is to analyze the degree of effectiveness of TQM in SMEs in Mexico based on Business Performance.

Among the main authors of this research we have Cruz Álvarez and Feizollahi and Giménez Espín, considered experts in productivity and quality, and some recognized theories of the fathers of the administration such as Frederick Taylor or Henry Fayol. This research is analytical and descriptive, because in it are the main concepts of research, as well as the main authors and creators of them, and descriptive because there are tables and tables that help explain in a more simple for its correct understanding.

In view of the results and recommendations of this scientific research, SMEs in Mexico should implement these tools more and better, since with them they will be able to provide better services to their clients and, with it, more crescam companies.

This research would not have been possible without the support of my family who gave their emotional support and financial resources, to my boyfriend who was always supporting me in order to attend this summer course, and of course to the PhD. José G. Vargas Hernández who accepted me as his student at the University of Guadalajara, at the University Center for Economic and Administrative Sciences, in this Summer of scientific research to enrich my scientific knowledge and finally at the Autonomous University of Sinaloa through the Academic Business Unit who provided me with a small financial support to carry out my scientific summer stay.

## **2. Antecedent of the problem**

Mexican SMEs are always constantly looking for better and more effective methods to guarantee their persistence in the environment in which they develop, since the demands of the markets change and become increasingly demanding, which is why new standards of competitiveness have been generated that practically they force companies to become better and better at what they do. The current business situation requires the incorporation of tools that are part of the daily use of organizations and promote their success.

Total Quality Management with good production performance and customer behavior. Production performance can be achieved through good supplier relationships, benchmarking, quality improvement, and continuous process improvement. Quality measurement is the most important task, followed by benchmarking, continuous process improvement, and supplier relationships. In turn, production performance has a positive effect on customer behavior, which results in good corporate performance.(Agus & Latifaah, 2000), (Feizollahi, 2013), (Smith, 2014).

"The performance of organizations is reflected by the increase in sales, market share and brand presence" (Cruz Álvarez., 2014, pp. 127-142). "Performance evaluation is

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a periodic determination of the operational effectiveness of an organization, part of the organization and its employees by objectives, standards and criteria established in advance" (Goentoro, 2016, pp. 93-96).

### **3. Delimitation of the problem**

This research will be carried out to SMEs in Mexico, to achieve brand presence, reflect increased sales, achieve the level of competition, the focus of this research are the elements that are important to achieve Business performance in SMEs of Mexico, as they are; Competitive Performance, Financial Performance and Quality of Service.

The main limitation is that the majority of SMEs in Mexico do not have the knowledge of the tools or processes that exist to carry out the proper functioning of the company or to apply them on a daily basis to obtain great results, such as being the avant-garde with products, achieving quality processes, and achieving a competitiveness standard that leads them to achieve business success, or in other cases these tools are known but there is no knowledge of how they should be applied to achieve results. expected.

“Today's society goes through constant changes that require new challenges and goals from institutions in their daily activities. It is a revolution where quality, information and knowledge are shown as essential resources to guarantee proper institutional performance. However, owning these resources is only one step towards keeping up with the new demands of changing environments. ” (Pérez, 2007, pp. 71-76).

- A. What is the degree of effectiveness of TQM in SMEs in Mexico based on Business Performance?
- B. What is the degree of effectiveness of TQM in SMEs in Mexico based on Personnel Management?
- C. What is the level of effectiveness of TQM in SMEs in Mexico based on Continuous Improvement?
- D. What is the level of effectiveness of TQM in SMEs in Mexico based on Leadership?

### **4. Justification**

This research aims to analyze the degree of effectiveness between Business Performance and Total Quality Management in SMEs in Mexico. Currently, companies are obliged to bring new ideas, products or services to the market. If companies do not update their

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products, the products will become unattractive and the company will start to have serious problems.

It is necessary to realize that innovations drive business and that they are considered as tools to maintain competitiveness. All innovation must contribute to the creation of added value for the client and for the company, the importance of this research is to find a method or tools that, as part of daily use in organizations, can have a presence in the market, generating new standards of competitiveness, and business performance.

### 5. Research variables and hypotheses

A. Dependent Variable (X): Business Performance

B. Independent Variable (Y): Total Quality Management.

Table 1. Description of the variables, dimensions and research indicators

VARIABLE	DESCRIPTION	DIMENSIONS	INDICATORS
Xo Business Performance	"It is the quantitative and qualitative result that the company obtains in a given period, it can have positive or negative effects, since they can be affected by its social and environmental performance" (Oliveira, 2013: 131-167).	Competitive performance Financial performance Quality in the service	Process and Product Quality Improvement Profits Increase Attracting new customers and retaining existing ones
Me Total Quality Management (TQM)	"TQM is an integrated manufacturing system aimed at continually improving and maintaining quality products and processes through business management, human resources, suppliers and customers in order to meet and even exceed customer expectations and needs" (Hackman and Wageman, 1995; Powell, 1995; Cua, McKnoe and Schroeder, 2001: 309-349).	Personnel Management Continuous improvement Leadership	Participation, Training, Team Information and Analysis Commitment

Source: self made.

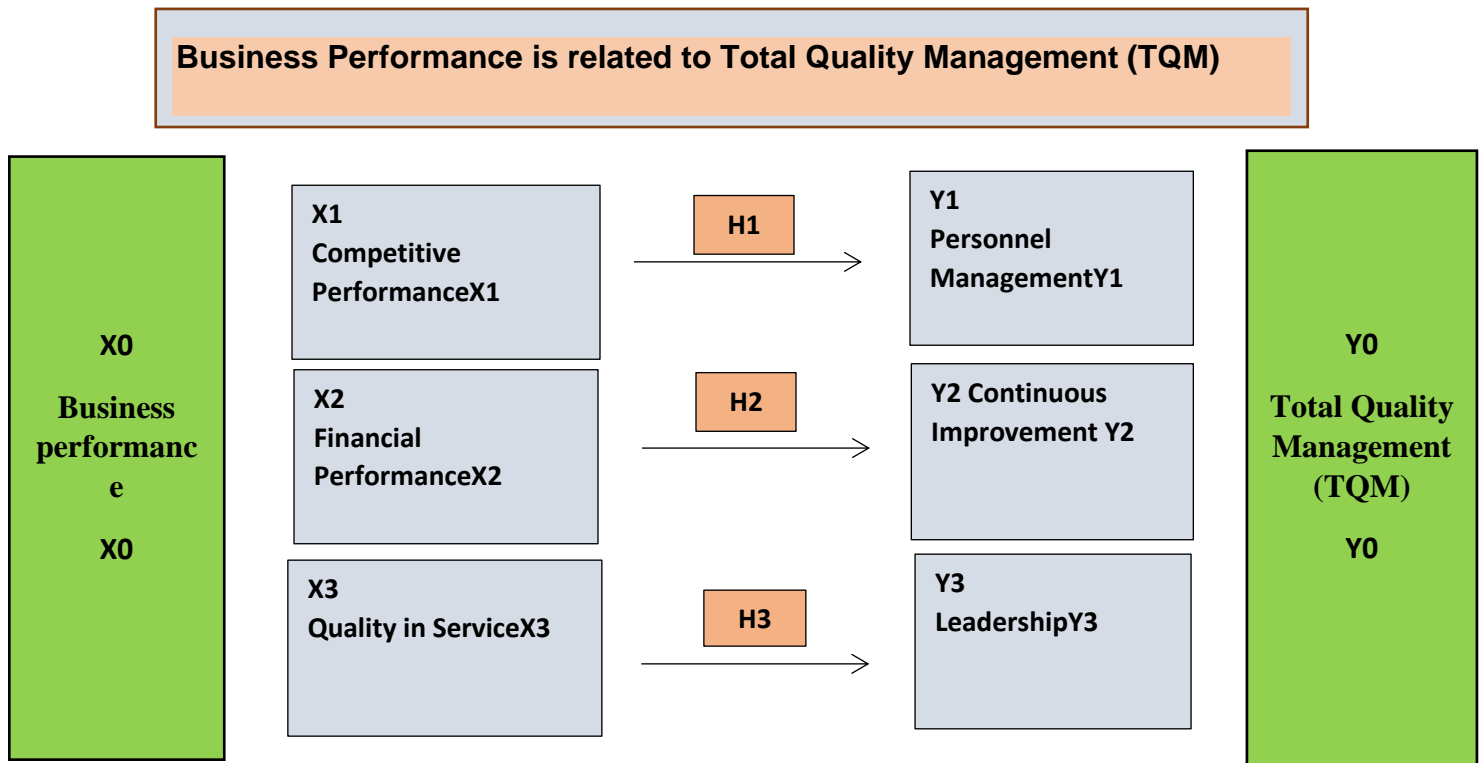


Figure 1 Display of variables, dimensions, and hypotheses.

Source. Own elaboration.

### General hypothesis

Business Performance is related to Total Quality Management (TQM).

### Specific hypotheses

**X1 Y1** →

Competitive Performance is related to Personnel Management.

**X2 Y2** →

Financial Performance is related to Continuous Improvement.

**X3 Y3** →

Quality in service is related to Leadership.

## 6. Investigation objectives

### A. Overall objective

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Analyze the degree of effectiveness of TQM in SMEs in Mexico based on Business Performance.

### B. Specific objective

- 1) Analyze the degree of effectiveness of TQM in SMEs in Mexico based on Personnel Management.
- 2) Analyze the degree of effectiveness of TQM in SMEs in Mexico based on continuous improvement.
- 3) Analyze the degree of effectiveness of TQM in SMEs in Mexico based on leadership.

Table 2. Congruence matrix

General question	Specific questions	General objective	Specific goal
What is the degree of effectiveness of TQM in SMEs in Mexico based on Business Performance?	<ol style="list-style-type: none"> <li>1. What is the degree of effectiveness of TQM in SMEs in Mexico based on Personnel Management?</li> <li>2. What is the level of effectiveness of TQM in SMEs in Mexico based on Continuous Improvement?</li> <li>3. What is the level of effectiveness of TQM in SMEs in Mexico based on Leadership?</li> </ol>	Analyze the degree of effectiveness of TQM in SMEs in Mexico based on Business Performance	<ol style="list-style-type: none"> <li>1. Analyze the degree of effectiveness of TQM in SMEs in Mexico based on Personnel Management.</li> <li>2. Analyze the degree of effectiveness of TQM in SMEs in Mexico based on continuous improvement.</li> <li>3. Analyze the degree of effectiveness of TQM in SMEs in Mexico based on Leadership.</li> </ol>

Source: self made.

## **7. Conceptual theoretical framework**

### **A. Business performance**

#### **one). Conceptual framework**

In order to define the research variables, the first step is to define the basic concepts that are necessary to better understand the research. First, the variable (x) is defined, according to classical authors, then with state-of-the-art authors.

“It is the quantitative and qualitative result that the company obtains in a given period. An example of a qualitative result is the evaluation of the performance of organizations through the opinion of customers, and in quantitative terms it is the evaluation of profitability. Then business performance can have positive or negative effects, since they can be affected by their social and environmental performance ”(Lopes de Oliveira, 2013, pp. 131-167).

"Business performance is measured based on three dimensions: 1) economic, 2) social and 3) environmental" (Gómez, 2013, pp. 1-35). "Proposes to measure business performance through three blocks: market measures, measures based on accounting and measures based on managers' perception. Whatever their classification, they have a positive or negative influence on business performance" (Orlitzky, 2003, pp. 403-441).

### **A. Total Quality Management (TQM)**

To learn more about the independent variable in the first order, the various concepts cited by classical authors are presented; in the second order, the concepts cited by state-of-the-art authors are listed.

Total quality management He defines it “as a collection of certain activities related to quality:

1. Quality becomes part of the plan of all top management.
2. Quality goals are incorporated into the business plan.
3. The expanded goals derive from benchmarking: the emphasis is on the consumer and on competition; There are goals for annual quality improvement.
4. Goals unfold to action levels.
5. Training is carried out at all levels.
6. The measurement is made in each area.
7. Managers regularly review progress against goals.
8. Superior performance is recognized.
9. The reward system is rethought " (Juran., Sf, p. Sp).

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Total quality management is defined as: Management: The governing body is fully committed, quality: The customer's requirements are understood and assumed exactly, total: Every member of the organization is involved, including the customer and the supplier, when this may be possible (Ishikawa, 1990).

Total Quality Management (TQM), "is a widely discussed technique in the business field and is considered as a business practice that has been identified as a type of innovation, mainly organizational innovation that helps improve corporate performance" (Bernardo, 2014, pp. 132-142),(Feizollahi, 2013, p. 1879) (Yong Lam, 2014, pp. 106-111).

Total Quality Management (TQM), is a business philosophy that has become internationally popular in multiple business areas (Kanji, 1990). "All the exposed tools and techniques are only means to achieve the objectives of continuous improvement through Total Quality Management "(Khalid, 2011, p. Sp).

Among the main benefits of TQM we can find the improvement of quality, employee participation, teamwork, better working relationships, customer satisfaction, employee satisfaction, productivity, communication and participation in the market, leadership management, strategic planning, process management, financial performance and market performance (Ahmad, 2012), (Khalid, 2011), (Yong Lam, 2014).

Based on the commitment of the entire organization to customer satisfaction, continuous improvement of products and processes, teamwork and the allocation of responsibilities (Agus & Latifaah, 2000), it is understood that TQM favors the adjustment of business activity with all relevant agents for the organization (Oakland, 2000) therefore it allows to improve the results and the competitive position of the organizations in complex and dynamic environments like the current ones (Samson, 1999).

### B. Theoretical framework

First, the theories that speak about Business Performance are listed, and their importance for organizations.

Table 3. Review of business performance theories

<b>Theory</b>	<b>Author</b>	<b>Beginning</b>
Principles of	Frederick W.	The methods of science to the problems of the administration to



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scientific management	Taylor	obtain a high industrial efficiency. The main scientific methods applicable to management problems are observation and measurement(Taylor, 1973).
Classical Administration Theory	Henry Fayol	For Fayol, it was very important to sell as well as to produce, finance and insure the assets of a company. In short, the organization and its components were considered as a large interdependent system, as internal customers. Fayol created favorable scenarios for administrative efficiency and, therefore, for the generation of profits for the company(Fayol, 1976).
Theory x and theory y	Douglas Murray Mcgregor	Theory X: It is based "on the old model of threats and the presumption of mediocrity of the masses, it is assumed that individuals have a natural tendency to leisure and that work is a form of punishment" (McGregor, 1960, pp. 134-144). Theory Y: "Considers that their subordinates find a source of satisfaction in their employment and that they will always strive to achieve the best results for the organization, thus, companies must free up the skills of their workers in favor of said results" (McGregor, 1960, pp. 134-144).
Resource dependency theory	Aldrich and Pfeffer	"Likewise, both the ability to acquire the necessary resources and the efficiency in the use of the resources of an organization are important judgment tools for the effectiveness of the organization and operation. However, measuring organizational performance is explicitly or implicitly related to what the organization achieves, its goals or objectives " (Aldrich, 1976, pp. 79-105).

Secondly, the theories that speak about Total Quality Management (TQM), and the principles of each of them.

Table 4. Review of total quality management theories

Theory	Author	Beginning
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Kaoru Ishikawa's Theory of Quality	Kaoru Ishikawa	<ol style="list-style-type: none"> <li>1. Quality begins with education and ends with education.</li> <li>2. Those data that do not have scattered information (variability) are false.</li> <li>3. The first step towards quality is knowing the needs of the clients.</li> <li>4. The ideal state of quality control occurs when inspection is no longer necessary.</li> <li>5. Eliminate the root cause and not the symptoms.</li> <li>6. Quality control is the responsibility of all workers in all divisions.</li> <li>7. Do not confuse the means with the objectives.</li> <li>8. Put quality first and set your sights on long-term profits.</li> <li>9. Marketing is the entry and exit of quality.</li> <li>10. Senior management should not show anger when subordinates present the facts to them.</li> <li>11. 95% of a company's problems can be solved with simple analysis tools ” (Ishikawa, 1990).</li> </ol>
TheoryPhilip's quality management practices and management b. Crosby	Philip Crosby	<p>b. Consequently, inspection, experimentation, supervision and other non-preventive techniques have no place in this process. Statistical levels of compliance with specific standards induce staff to fail. Crosby maintains that there is absolutely no reason to make mistakes or defects in any product or service. (Crosby, 1987).</p>
14 points to promote quality management and the seven diseases of William Edwards Deming	William Edwards Deming	<p>"Quality does not mean luxury. Quality is a degree of consistency and predictability that is predictable, low cost, and market-friendly. In other words, quality is everything the consumer needs and wants. As consumer needs and wants are always changing, the way to define quality with reference to the consumer is to constantly redefine the requirements ” (Deming, 1989, p. Sp).</p>
Theory Quality Joseph M. Juran	Joseph M. Juran	<p>M. “A form of quality is income-oriented, and consists of those characteristics of the product that satisfy consumer needs and, as a consequence, produce income. In this sense, better quality generally costs more. A second form of quality would be cost-oriented and would consist of the absence of failures and deficiencies. In this sense, a better quality generally costs less ” (Juran, 1990, p. Sp).</p>

Source: self made.

### C. Empirical review of the literature

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Table 5. Empirical review of Business Performance according to some authors

<b>Authors (year)</b>	<b>Research title</b>	<b>Context</b>	<b>Method or instrument that was used</b>	<b>Results and findings found</b>
(Hochsztain, 2015)	Success factors of an enterprise: An exploratory study based on Data Mining techniques.	A case study is presented based on data from a survey of participating entrepreneurs of the program, applying classification techniques.	A study based on survey data.	Show that the two most elements Relevant to anticipate the success of an enterprise are having financing and that, previously, the entrepreneur's employment situation is an independent worker.
(Zornoza nightgown, 2007)	competitive strategies and business performance: comparative study of Robinson & Pearce and miles & Snow in the Spanish hotel sector.	Hotels in Spain	Structural equations, Exploratory factor analysis and ANOVA.	The results achieved represent a contribution to the state of the question, characterized by the lack of a critical synthesis of theoretical contributions and by controversial empirical results.

Source: self made.

Table 6. Empirical review of total quality management according to some authors.

<b>Authors (year)</b>	<b>Research title</b>	<b>Context</b>	<b>Method or instrument that was used</b>	<b>Results and findings found</b>
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(Jesús Perdomo, 2011)	Human Resources Management Focused on Total Quality and Innovation	The population was taken from the Mercantile Registry for the Bogotá Region and was made up of 357 companies from which a response rate of 28.29% was obtained, that is, 101 questionnaires valid	Questionnaires and ANOVA	The study found equivalent and complementary results to those obtained by previous works. First, it confirmed that the practices associated with the teamwork dimension are directly associated with the best innovation results. And second, there was no evidence that the dimensions of training and motivation were those that contribute the most significantly to the results of innovation, contrary to what was found in other investigations.
(Samat, 2004)	The relationship between total quality management (TQM) practices, service quality, market orientation, and organizational performance	Administrators of 175 service organizations in the northern region of Malaysia (Kedah, Perak, Penang and Perlis), and only 101 were returned.	Questionnaire using the SERVQUAL model	They show that only Employee Empowerment, Information and Communication, Continuous Improvement Approach had a significant effect on service quality, Employee Empowerment and Customer Focus had a guiding effect. Both service quality and market orientation were Organizational performance however; They did not mediate the relationship between TQM Practices and organizational performance.

Source: self made.

### 8. Contextual framework

"There are 4 million 15 thousand business units of which 99.8% are SMEs that are responsible for generating 52% of the Gross Domestic Product (GDP) and 72% of jobs" (INEGI, 2015, p. Sp).

The following table shows the number of companies by size and the participation of each one, highlighting that small and medium-sized companies have a very low percentage.

Table 7. Number of companies by size

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Size	Companies Participation Number (%)	
Micro	3 952 422	97.6
Little	79 367	2.0
Median	16 754	0.4
<b>Total</b>	<b>4 048 543</b>	<b>100.0</b>

Source: Own elaboration based on INEGI data (2015).

Below, figure 2 shows the distribution of SMEs according to the main limitations of why they do not want their businesses to grow.

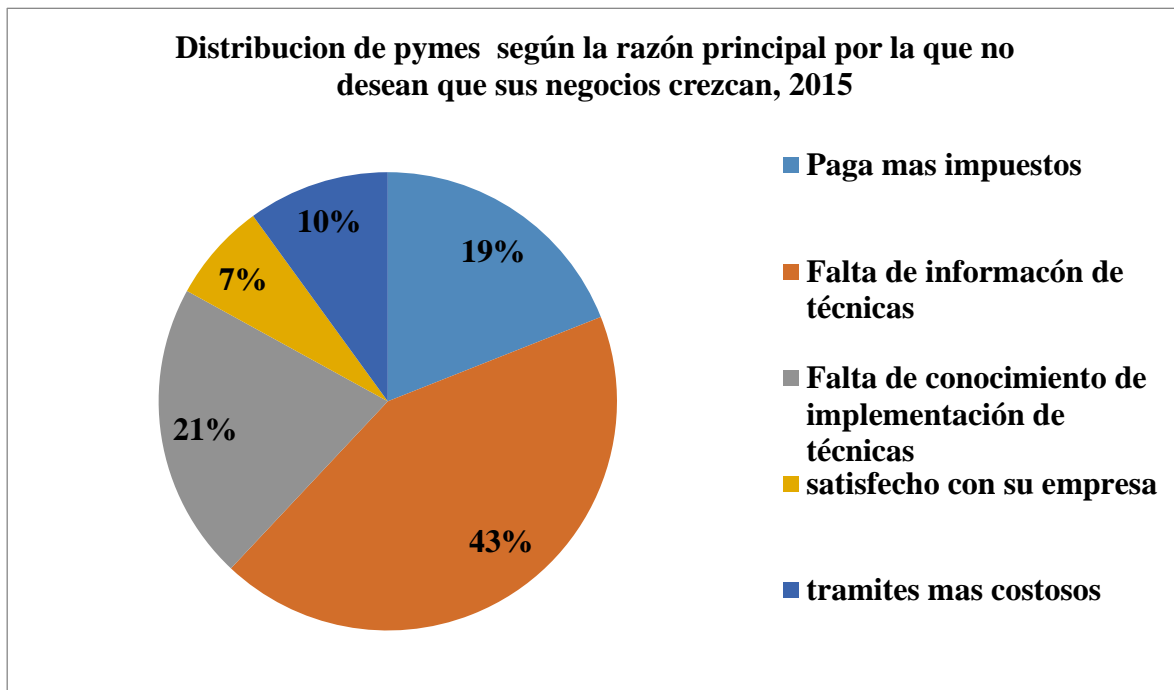


Figure 2. Distribution of SMEs according to the reason why they do not want to grow.

Source: Own elaboration, based on data collected by INEGI(2015).

Figure 3 shows the Distribution of the number of companies according to the actions they implemented in the face of problems presented in the production process, highlighting that the greatest limitation is continuous improvement, which is why the TQM tool must be implemented, in order to improve the processes and services of SMEs.

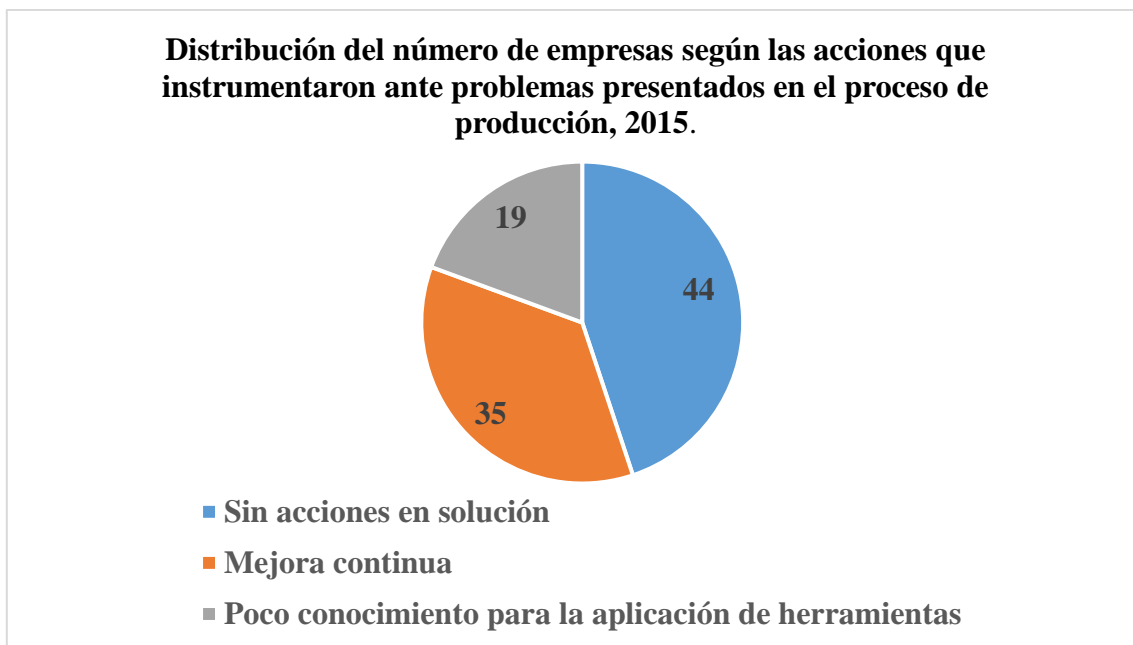


Figure 3. Distribution of the number of companies according to the actions they implemented in the face of problems presented in the production process, 2015.

Source: Own elaboration, based on data collected by INEGI(2015).

## 9. Research Methods

### A. Types of research

This research is analytical and descriptive, because it establishes the comparison of the variables and groups of control studies and finds the main concepts about the research, as well as the main authors and creators of them, and descriptive because in The investigation finds tables and tables and circular graphs that help to explain the variables in a simpler way for the correct understanding of these concepts.

### B. Design of the investigation

Table 8. Description of variables, dimensions, indicators, operational instrument of variables and statistical analysis of research.

Variables	Description	Dimensions	Indicators	Instrument	Variable	Statistic
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					<b>operanalization</b>	<b>analysis</b>
<b>X0</b> Business Performance	"It is the quantitative and qualitative result that the company obtains in a given period, it can have positive or negative effects, since they can be affected by its social and environmental performance" (Oliveira, 2013: 131-167).	Competitive performance  Financial performance  Quality in the service	Process and Product Quality Improvement  Profits Increase  Attracting new customers and retaining existing ones	Descriptive bibliographic analysis	Information is collected from recognized authors and in databases of scientific journals. To contrast with Total Quality Management.	Boards  figures  Pie charts
<b>Y0</b> Total Quality Management (TQM)	"TQM is an integrated manufacturing system aimed at continually improving and maintaining quality products and processes through business management, human resources, suppliers and customers in order to meet and even exceed customer expectations and needs" (Hackman and Wageman, 1995; Powell, 1995; Cua, McKnoe and Schroeder, 2001: 309-349).	Personnel Management  Continuous improvement  Leadership	Participation Training, Team  Information and Analysis  Commitment	Descriptive bibliographic analysis	Information is collected from recognized authors and in databases of scientific journals. To contrast with Business Performance.	Boards  figures  Pie charts

Source: self made.

### C. Research construct

Below is the research construct

**Business Performance is related to Total Quality Management (TQM)**

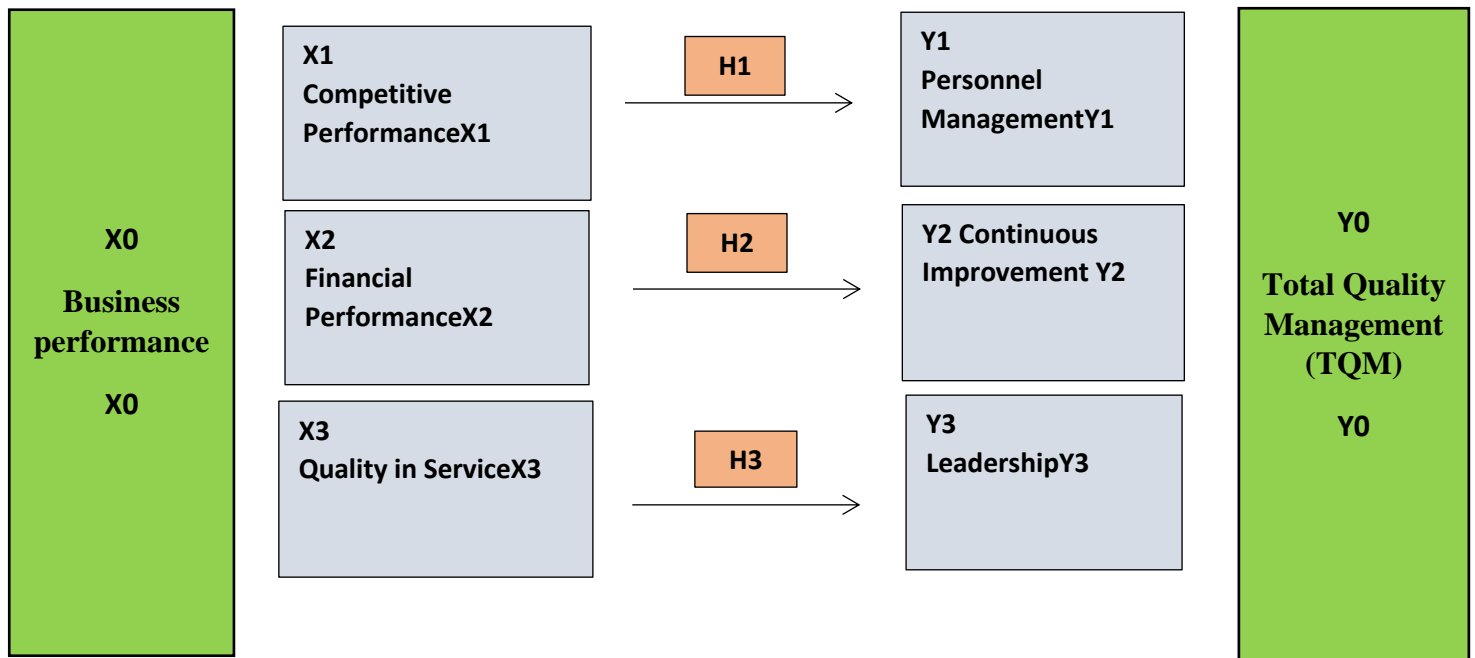


Figure 1. Display of variables, dimensions, and hypotheses.  
Source: self made.

#### D. Research instrument

In this research, databases such as Scopus, EBSCO, INEGI and scientific journals such as Redalib, by the authors Cruz Álvarez 2014, Feizollahi 2013, Giménez Espín 2014, alfalla Luque 2012, Agus 2011, 2010, Ahmad 2012, Yong Lam 2014, have been used. , Bernardo 2014, Camisón 2007, were analyzed to find the impact and relationship between the variables.

#### E. Analysis of data

This research is analytical and descriptive, because it contains the main concepts of the research, as well as the main authors and creators of the research, and descriptive because the research contains tables and tables that help to explain in a way easier for the correct understanding of these concepts.

#### F. Limitations



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This research has as main limitations the time, there was very little time to develop the research in a more concrete way. The second limitation is the economic resource because it was limited, there was no total access to the information, and the sites websites are very unreliable for obtaining scientific articles that support research.

## **10. Analysis of results**

### **A. Hypothesis testing and results**

The hypothesis of this research is the relationship that business performance has with total quality management, the result that was found was that they do have a direct relationship, since successful companies implement these techniques and tools that contribute to better competitiveness and business success, the variables of this research go hand in hand since TQM seeks continuous improvement of products and services and therefore performance in the market and thus achieve business success.

### **B. Hypothesis testing**

This research corroborates what Yong Lam(2014), mentions that "TQM is the main tool for business performance, so it must have solid foundations that together with the other elements help and complement business performance" (pp. 106-111)In this way, TQM is established as an essential tool that contributes to business performance to formulate a success model for SMEs in Mexico.

### **C. Findings**

The finding found in this research is that TQM is a very important technique in international organizations, but it does not have the same impact on small and medium-sized companies, due to the lack of knowledge about this technique and the implementation of said tool.

### **D. Contributions**

This research provides knowledge to SME entrepreneurs that the business environment is very complex and competitive today, which is why large organizations recommend that SMEs invest in TQM systems, since the investment will help transform them into a company. market oriented, and achieve higher performance.

### **E. Implications**

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This research can be used by entrepreneurs of SMEs in Mexico to focus on the techniques and tools that exist to be able to succeed and be competitive in the demanding market that exists every day, the importance of each one of them in their companies, knowing how to implement them will achieve great results, and with it great satisfaction.

## **F. Future line of research**

This work is focused on SME entrepreneurs who are unaware of the techniques and how they should be correctly implemented, facilitating this knowledge through this scientific research. Providing the most relevant features so that they are very useful to them and can be reflected in a positive way in their companies.

## **G. Research limitations**

This research has limitations such as time since it was too little to be able to delve further into the aforementioned variables, however, sufficient results were obtained to check the hypothesis of this research, in turn, the collection of information was lacking since the databases were in the university library and the university had limited hours, and lastly, scientific journals were consulted on the websites, but the information was limited.

## **Conclusions and recommendations**

Within this research, it is important to point out that Business Performance has a direct relationship with Total Quality Management, being in this way that SMEs in Mexico should better train their employees so that they can implement these two important tools correctly and that they become daily use and these can provide significant results, since companies today must innovate and be competitive, and always seek a more efficient way of carrying out their operational processes by implementing new strategies to obtain better changes.

Most SMEs do not implement these tools for various reasons, but the ones found in this investigation were the lack of information about the existence of said tools, the lack of knowledge of how to implement them. The recommendations provided by this research is that entrepreneurs of SMEs in Mexico, give themselves the opportunity to learn a little more about these tools, which today is a very important technique in world organizations, some of the benefits of implementing these tools are: better relationship with suppliers, quality improvement and continuous process improvement, to achieve good production performance and its relationship with customer behavior, achieving business success.

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