Impact of business performance and TQM on the SMEs of Mexico

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Abstract

The purpose of this research is to analyze the degree of effectiveness of TQM in SMEs in Mexico as a function of Business Performance, considering that Business Performance is related to Total Quality Management. This research is analytical and descriptive, since no statistical method is used, only the variables and the research problem are analyzed in detail and in a detailed manner, and descriptive because tables and tables can be found to help facilitate understanding of these important concepts. This research will analyze the impact of both variables, and with this, the entrepreneurs can make the necessary changes in their production line or in their employees to obtain better and greater positive results.

Key words: Business Performance, Total Quality Management (TQM), SMEs, Effectiveness

1. Introduction

Nowadays the competitiveness in the market is very high. Every day companies seek to face this situation through the use of new techniques that increase their benefits and improve corporate performance (Alfalla Luque, 2012, pp. 64-88). It is necessary to realize that innovations drive the 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 (TQM). With these data, it can be stated to develop in a deeper way what each of these concepts consists of, considering that the objective is to analyze the degree of effectiveness of TQM in Mexican small and medium enterprises (SMEs) based on business performance.

Among the main authors of this research are Cruz Álvarez and Feizollahi and Giménez Espín, considered experts in productivity and quality, and some recognized theories of the parents of the administration such as Frederick Taylor or Henry Fayol. This investigation is of analytical and descriptive type, because in it are the main concepts on the investigation, as well as the main authors and creators of the same, and descriptive. Also, in it are tables that help to explain in a simpler way for its correct understanding.

In view of the results and recommendations of this scientific research, SMEs in Mexico should implement more and better these tools because with them they can provide better services to their clients and with this the company’s growth more. 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 to attend this summer course, and of course the PhD. José G. Vargas Hernández who accepted me as his student at the University of Guadalajara, in the University Center of Economic and Administrative Sciences, in this summer of scientific research to enrich my scientific knowledge and finally to the Autonomous University of Sinaloa through the Academic Business Unit who provided me with a small financial support to make my summer scientific stay.

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2. Background of the problem

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

The Management of the Total Quality is tied with the good performance of the production and the behavior of the client. Production performance can be achieved through good relationship with suppliers, benchmarking, quality improvement and continuous improvement of the process. The measurement of quality is the most important task, followed by comparative evaluation, continuous process improvement and relations with suppliers. In turn, the yield of production has a positive effect on the behavior of the clients, which results in a good corporate performance (Agus & Latifaah, 2000), (Feizollahi, 2013; Smith, 2014).

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

The present research is carried out to the SMEs of Mexico, to achieve the presence of a brand, reflect sales increase and achieve the level of competence. The focus of this research is the elements that are important to achieve business performance in SMEs in Mexico, as they are competitive performance, financial performance and service quality.

The main limitation is that most of the SMEs in Mexico do not have the knowledge of the tools or processes that exist to be able to carry out the good functioning of the company or to apply them for daily use to obtain great results, such as being the avant-garde with products, achieving quality processes, and achieving a competitive standard that leads them to achieve business success. In other cases, it is known about these tools but managers do not have the knowledge of how to apply them to achieve the results expected.

The current society is going through constant changes that require new institutions challenges and goals in their daily work. It is a revolution where quality, information and knowledge are shown as essential resources for the guarantee of a correct institutional performance. However, owning these resources is only a step to be in correspondence 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 in terms of personnel management?
C. What is the level of effectiveness of TQM in SMEs in Mexico in terms of continuous improvement?
D. What is the level of effectiveness of TQM in SMEs in Mexico based on leadership?

4. Justification

The objective of this research is to analyze the degree of effectiveness that exists between Business Performance and Total Quality Management in SMEs in Mexico. Currently, companies are obliged to contribute new ideas, products or services to the market. If companies do not update their products, the products would become unattractive and the company will start to have serious problems.

It is necessary to realize that innovations drive the business and that they are considered as tools to maintain competitiveness. All innovations 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

| Table 1. Description of research variables, dimensions and indicators |
|-------------------|-------------------|-------------------|-------------------|
| **Variable**       | **Description**                                                                                       |
| Xo Business        | It is the quantitative and qualitative result obtained by the company 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). |
| Performance        | Competitive performance                                                                                          |
|                   | Financial performance                                                                                           |
|                   | Quality in the service quality                                                                                   |
| **Dimensions**     | Improvement of processes and products                                                                           |
| **Indicators**     | Increase of utilities                                                                                             |
|                   | Attracting new customers and retaining existing ones                                                             |
TQM is an integrated manufacturing system aimed at continuously improving and maintaining quality products and processes through business management, human resources, suppliers and customers in order to achieve and even exceed the expectations and needs of customers (Hackman and Wageman, 1995, Powell, 1995, Cua, McKnoe and Schroeder, 2001: 309-349).

### A. General hypothesis

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

### B. Specific hypotheses

- Competitive Performance is related to Personnel Management.
- Financial Performance is related to Continuous Improvement.
- The quality in the service is related to the Leadership.

### 6. Research objectives

#### 6.1 General objective

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

#### 6.2 Specific objectives

1. Analyze the degree of effectiveness of TQM in SMEs in Mexico in terms of Personnel Management.
2. Analyze the degree of effectiveness of TQM in SMEs in Mexico in terms of Continuous Improvement.

### 7. Conceptual and theoretical framework

#### 7.1 Conceptual framework

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


Table 2. Congruence matrix

<table>
<thead>
<tr>
<th>General question</th>
<th>Specific questions</th>
<th>General objective</th>
<th>Specific objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>What is the degree of effectiveness of TQM in SMEs in Mexico based on Business Performance?</td>
<td>1. What is the degree of effectiveness of TQM in SMEs in Mexico in terms of Personnel Management? 2. What is the level of effectiveness of TQM in SMEs in Mexico in terms of Continuous Improvement? 3. What is the level of effectiveness of TQM in SMEs in Mexico based on Leadership?</td>
<td>Analyze the degree of effectiveness of TQM in Mexican SMEs based on Business Performance</td>
<td>1. Analyze the degree of effectiveness of TQM in Mexican SMEs in terms of Personnel Management. 2. Analyze the degree of effectiveness of TQM in SMEs in Mexico in terms of Continuous Improvement. 3. Analyze the degree of effectiveness of TQM in Mexican SMEs based on Leadership.</td>
</tr>
</tbody>
</table>

7.1.1 Business performance

Business performance is the quantitative and qualitative result obtained by the company in a given period. Example of a qualitative result is the evaluation of the performance of the organizations through the opinion of the clients, and in quantitative terms it is the evaluation of the 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). Business Performance proposes to measure business performance through three blocks: market measures, measures based on accounting and measures based on the perception of managers, whatever their classification, these have positive or negative influence on business performance (Orlitzky, 2003, pp. 403-441).

7.1.2 Total Quality Management (TQM)

To learn more about the dependent variable in the first order, the various concepts cited by classical authors are presented, and secondly, the concepts cited by authors of the state of art are listed.

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

(a) Quality becomes part of the plan of all senior management.
(b) Quality goals are incorporated into the business plan.
(c) The expanded goals derive from benchmarking: the emphasis is on the consumer and the competition; there are goals for the annual improvement of quality.
(d) The goals of deploy to the action levels.
(e) Training is carried out at all levels.
(f) The measurement is made in each area.
(g) Managers regularly analyze progress with respect to goals.
(h) The superior performance is recognized.
(i) The reward system is rethought (Juran, S.f., s.p.).

The total quality management is defined as the management body is totally committed to quality: The client's requirements are understood and assumed exactly. Total: Every member of the organization is involved, including the client and the provider, when this possible (Ishikawa, 1990). Total Quality Management (TQM), is a very discussed technique in the business world 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, page 1879; Yong Lam, 2014, pp. 106-111).

Total Quality Management (TQM), is a business philosophy that has become popular internationally in many business areas (Kanji, 1990). All the tools and techniques presented are only means to achieve the objectives of continuous improvement through Total Quality Management (Khalid, 2011, p.p.). Among the main benefits of TQM can be found 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). TQM is sustained in the commitment of the entire organization with customer satisfaction, continuous improvement of products and processes, teamwork and assignment of responsibilities (Agus & Latifaah, 2000). It is understood that TQM favors the adjustment of business activity with all the relevant agents for the organization (Oakland, 2000) so that it improves the results and the competitive position of organizations in complex and dynamic environments such as the current ones (Samson, 1999).

7.2 Theoretical framework

In the first order, the theories that talk about Business Performance are listed, and the importance they have for organizations.
### Table 3. Review of business performance theories

<table>
<thead>
<tr>
<th>Theory</th>
<th>Author</th>
<th>Principles</th>
</tr>
</thead>
<tbody>
<tr>
<td>Principles of scientific administration</td>
<td>Frederick W. Taylor</td>
<td>The methods of science to the problems of administration to obtain high industrial efficiency. The main scientific methods applicable to the problems of administration are observation and measurement (Taylor, 1973).</td>
</tr>
<tr>
<td>Classical Theory of Administration</td>
<td>Henry Fayol</td>
<td>It was very important to both sell and produce, to finance themselves and to secure 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).</td>
</tr>
<tr>
<td>The theory x and the theory.</td>
<td>Douglas Murray Mcgregor</td>
<td>Douglas Murray Mcgregor Theory X: It is based &quot;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&quot; (McGregor, 1960, p. 134-144). Theory Y: “Considers that their subordinates find in their employment a source of satisfaction and that they will always strive to achieve the best results for the organization, thus, companies must release the skills of their workers in favor of said results” (McGregor, 1960, pp. 134-144).</td>
</tr>
<tr>
<td>The theory of resource dependence</td>
<td>Aldrich y Pfeffer</td>
<td>Also, both the ability to acquire the necessary resources and the efficiency in the use of the resources of an organization are important tools of judgment 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).</td>
</tr>
</tbody>
</table>

Source: Own elaboration.

In second order, the theories that talk about total Quality management (TQM), and the principles of each of them are listed.

### Table 4. Review of theories of total quality management

<table>
<thead>
<tr>
<th>Theory</th>
<th>Author</th>
<th>Principles</th>
</tr>
</thead>
</table>
2. Those data that do not have scattered information (variability) are false.  
3. The first step towards quality is to know the needs of customers.  
4. The ideal state of quality control occurs when inspection is no longer necessary.  
5. Eliminate the root cause and not the symptoms.  
6. Quality control is the responsibility of all workers in all divisions.  
7. Do not confuse the means with the objectives.  
8. Put quality first and focus your eyes on long-term profits.  
9. Marketing is the entry and exit of quality.  
10. Senior management should not show anger when their subordinates present the facts.  
11. 95% of the problems of a company can be solved with simple analysis tools "(Ishikawa, 1990). |
| General theory and practices of quality management of Philip B. Crosby | Philip B. Crosby       | 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 argues that there is absolutely no reason to make mistakes or defects in any product or service (Crosby, 1987). |
| 14 points to boost the management of quality and the seven diseases of William Edwards Deming | William Edwards Deming  | Quality does not mean luxury. Quality is a degree of uniformity and predictable reliability, low cost and adapted to the market. In other words, quality is everything that the consumer needs and longs for. Since the consumer's needs and wishes are always changing, the way to define quality with reference to the consumer is to constantly redefine the requirements (Deming, 1989, p.p.). |
| Theory of quality Joseph M. Juran                       | Joseph M. Juran          | 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, a better quality usually costs more. A second form of quality would be cost oriented and would consist of the absence of faults and deficiencies. In this sense, a better quality generally costs less "(Juran, 1990, p.p.). |

Source: Own elaboration
7.3 Empirical review of the literature

**Table 5: Empirical review of Business Performance according to some authors**

<table>
<thead>
<tr>
<th>Authors (Years)</th>
<th>Title of the research</th>
<th>Context</th>
<th>Method and instrument used</th>
<th>Results and findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Hochsztain, 2015)</td>
<td>Success factors of an enterprise: An exploratory study based on Data Mining techniques.</td>
<td>A case study is presented based on data from a survey of participating entrepreneurs of the program, applying classification.</td>
<td>A study based on the data of a survey.</td>
<td>They show that the two more relevant elements to anticipate the success of an enterprise are to have financing and, previously, the employment situation of the entrepreneur is an independent worker.</td>
</tr>
<tr>
<td>(Camisón Zornoza, 2007)</td>
<td>Competitive strategies and business performance: Comparative study of Robinson's models Pearce and miles &amp; Snow in the Spanish hotel sector.</td>
<td>Hotels of Spain</td>
<td>Structural equations, Exploratory factor analysis and ANOVA.</td>
<td>The results achieved make a contribution to the state of affairs, characterized by the lack of a critical synthesis of theoretical contributions and controversial empirical results.</td>
</tr>
</tbody>
</table>

Source: Own elaboration.

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

<table>
<thead>
<tr>
<th>Authors (Year)</th>
<th>Title of research</th>
<th>Context</th>
<th>Method or instrument used</th>
<th>Results and findings</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Jesús Perdomo, 2011)</td>
<td>Human Resources Management Focused on Total Quality and Innovation.</td>
<td>The population was taken from the Mercantile Registry for the Bogota Region and was constituted by 357 companies, of which a response rate of 28.29% was obtained, that is, 101 questionnaires validated.</td>
<td>Questionnaires and ANOVA</td>
<td>The study found equivalent and complementary results to those obtained from previous work. In the first place, he confirmed that the practices associated with the dimension of teamwork are directly associated with the best results of innovation. And second, it was not evident that the dimensions of training and motivation were those that contribute the most significantly to the results of innovation, contrary to that found in other investigations.</td>
</tr>
<tr>
<td>(Samat, 2004)</td>
<td>The relationship between total quality management (TQM) practices, service quality, market orientation, and organizational performance</td>
<td>Managers of 175 service organizations in the northern region of Malaysia (Kedah, Perak, Penang and Perlis), and only 101 were returned.</td>
<td>Questionnaire using the SERVQUAL model</td>
<td>They show that only empowerment of employees, information and communication, continuous improvement focus had a significant effect on the quality of service, employee empowerment and customer focus had an orientation effect. Both the quality of the service and the orientation to the market were organizational performance, however; The relationship between TQM practices and organizational performance did not mediate.</td>
</tr>
</tbody>
</table>

Source: Own elaboration

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, page s.p.). The following table shows the number of companies by size and the share of each, highlighting that small and medium-sized companies have a very low percentage.
Table 7. Number of companies by size

<table>
<thead>
<tr>
<th>Size</th>
<th>Enterprises Number</th>
<th>Participation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Micro</td>
<td>3,952,422</td>
<td>97.6%</td>
</tr>
<tr>
<td>Small</td>
<td>79,367</td>
<td>2%</td>
</tr>
<tr>
<td>Medium</td>
<td>16,754</td>
<td>0.4%</td>
</tr>
<tr>
<td>Total</td>
<td>4,048,543</td>
<td>100%</td>
</tr>
</tbody>
</table>

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

Next in Figure 2 we can see the distribution of SMEs according to the main limitations of why they do not want their businesses to grow.

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

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

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

9.1 Types of research

This research is analytical and descriptive, because it establishes the comparison of the variables and groups of control studies and includes the main concepts about the research, as well as the main authors and creators of the same, and descriptive because in the research includes tables and tables and pie charts that help explain the variables in a simpler way for the correct understanding of these concepts.

9.2 Research Design

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

<table>
<thead>
<tr>
<th>Variables</th>
<th>Description</th>
<th>Dimensions</th>
<th>Indicators</th>
<th>Instruments</th>
<th>Operationalization of variables</th>
<th>Statistical analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td>X0</td>
<td>Business Performance</td>
<td>Competitive performance</td>
<td>Quality Improvement of Processes and Products</td>
<td>Descriptive and bibliographic analysis</td>
<td>Information is collected from recognized authors and databases of scientific journals to contrast with Total Quality Management.</td>
<td>Tables, figures, Circular graphs</td>
</tr>
<tr>
<td>Y0</td>
<td>Total Quality Management (TQM)</td>
<td>Staff management</td>
<td>Participation and development team</td>
<td>Descriptive and bibliographic analysis</td>
<td>Information is collected from recognized authors and databases of scientific journals, to contrast with Business Performance.</td>
<td>Tables, figures, Circular graphs</td>
</tr>
</tbody>
</table>

Source: Own elaboration

9.3 Research instrument

In this research we have used databases such as Scopus, EBSCO, INEGI and scientific journals such as Redalyc. Authors such as Cruz Álvarez (2014), Feizollahi (2013), Giménez Espín (2014), alfalla Luque (20129, Agus (2011, 2010), Ahmad (2012), Yong Lam (2014), Bernardo (2014), Camisón (20079, were analyzed to find the impact and relationship between the variables.

9.4 Data analysis

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

9.5 Limitations

This investigation has as main constraints the time, there was very little time to develop in a more profound and concrete way the research as the second limitation is the economic resource because it was limited, there was no total access to the information, and the sites There are very few reliable websites to obtain scientific articles that give sustenance to the research.

10. Analysis of results

10.1 Testing hypotheses and results
The hypothesis of this research is the relationship that business performance has with total quality management. The result was that they 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 as TQM seeks the continuous improvement of products and service and therefore the performance in the market and thus achieve business success.

10.2 Contrasting hypothesis

This research corroborates what Yong Lam (2014) finding consider 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 (pages 106 -111). TQM is established as an essential tool that contributes to business performance to formulate a model of success in SMEs in Mexico.

10.3 Findings

The finding in this research is that TQM is a very important technique in international organizations, but it does not have the same impact in small and medium enterprises, due to the lack of knowledge about this technique and the implementation of this tool in SMEs. It should be considered cultural and institutional factors.

10.4 Contributions

This research provides knowledge to entrepreneurs of SMEs that today the business environment is very complex and competitive that is why large organizations recommend SMEs to invest in TQM systems since investment helps to transform into a market oriented

10.5 Implications

This research can serve entrepreneurs of SMEs in Mexico, so that they are guided by the techniques and tools that exist to be successful and competitive in the market that is so demanding that there is a day to day, the importance of each One of them in their companies, knowing how to implement it will achieve great results, and with it a great satisfaction.

10.6 Future research

This work is focused on entrepreneurs of SMEs who are unaware of the techniques and how their correct implementation should be, facilitating this knowledge through this scientific research. Providing the most relevant features so that they are of great use and these can be reflected in a positive way in their companies.

10.7 Research limitations

This research presents limitations such as the time since it was too little to be able to delve more deeply into the aforementioned variables, however, enough results were obtained to verify the hypothesis of this investigation, in turn, the information collection was lacking since the databases were in the library of the university and this had a limited schedule, and finally on the websites were consulted scientific journals but in them the information was limited.

11. Conclusions and recommendations

Within this research it is important to point out that the Business Performance has a direct relationship with Total Quality Management being this way that SMEs in Mexico should better train their employees so that they can implement these two important tools in a correct way and make the daily use and these can provide significant results, since companies nowadays must innovate and be competitive, and always look for a more efficient way to carry out their operational processes by implementing new strategies to obtain better changes. The majority of SMEs do not implement these tools for several reasons, but the ones found in this research were the lack of information on the existence of said tools, the lack of knowledge on how to implement them. The recommendations offered by this research is that entrepreneurs of SMEs in Mexico, are given the opportunity to learn a little more about these tools that today is a very important technique in global organizations, some of the benefits of implementing these Tools are: better relationship with suppliers, improvement of quality and continuous improvement of processes, to achieve a good performance of production and its relationship with customer behavior, achieving business success.

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José G. Vargas-Hernández / International journal of research in engineering and innovation (IJREI), vol 2, issue 1 (2018), 41-50


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