How to Cite:
Boudra, K., & Benfettacha, M. (2024). The effect of applying six sigma method on the enterprise positioning: A case study of Algeria Telecom (The Agency of Guelma City). *International Journal of Economic Perspectives*, *18*(11), 2720–2741. Retrieved from https://ijeponline.org/index.php/journal/article/view/749

The effect of applying six sigma method on the enterprise positioning: A case study of Algeria Telecom (The Agency of Guelma City)

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***Abstract*---**This study aims to demonstrate the impact of adopting the Six Sigma method by Algeria Telecom on its positioning. Data were collected using the study tool, which is a questionnaire, based on a sample of 40 valid questionnaires for analysis. The study found that Six Sigma, with its various dimensions (top management support, customer focus, service design, infrastructure, training and qualification, continuous improvement), contributes to and affects the positioning of Algeria Telecom. This is reflected in its efforts to apply various quality programs, especially the Six Sigma method, to identify problems related to the quality of its services and work on solving them to meet the needs of its customers with high quality and competitive prices compared to its competitors. Finally, the study concluded with several recommendations, the most important of which is to focus more on the support of top management in implementing Six Sigma, allowing the company to achieve high-quality services compared to its competitors in the market.

***Keywords*---**Algeria Telecom, Positioning, Quality, Six Sigma.

1. Introduction

Global and local organizations, whether production-based or service-oriented, face numerous changes and challenges. Among the most significant of these

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Submitted: 15 July 2024, Revised: 30 September 2024, Accepted: 27 November 2024

challenges is the increasing competition, which is followed by shifts in consumer behavior. Consumers have become more aware and knowledgeable about their purchases and are capable of choosing the best product or service in terms of quality. As a result, companies strive to offer products and services of higher quality with fewer defects compared to their competitors in the market. This is achieved through the use of new quality models, such as Six Sigma, which aims to reduce defect levels and improve quality in both products and services. Six Sigma focuses on reducing defects to a level of 3.4 defective units per million, making it one of the best methods used in businesses to successfully implement marketing strategies, including positioning strategy. It has proven highly effective in achieving key goals, such as staying in the market and meeting consumer needs and desires, by enhancing the quality of products and services, excelling in prices, and thereby establishing a strong reputation and positive image, which supports the organization's success, continuity, and competition against other companies.

Problem of the Study:

Organizations of all types are now required to adopt management methods that enable them to achieve their goals, especially the goal of establishing a distinctive position for their products and services in the market and in the minds of consumers they seek to satisfy. One of the most prominent methods that helps achieve this is Six Sigma. Thus, the study problem can be formulated as follows:

What is the impact of applying the Six Sigma method on the positioning of Algeria Telecom?

Importance of the Study:

The importance of this study lies in its connection between critical variables related to the quality of services and business operations provided by the organization and its survival in the market. This is done by understanding the relationship between the implementation of the Six Sigma method in this organization and its market positioning. The study aims to determine the significance of reducing defects in operations, products, and services provided by the company in achieving its goals, which include ensuring its position in the market by meeting the needs and desires of its customers at a high level of satisfaction, and in a manner superior to its competitors.

Objectives of the Study:

The study aims to achieve the following:

- Provide a theoretical conceptual contribution related to the Six Sigma method and the requirements for its implementation in an organization.
- Define the concepts and ideas related to positioning and the stages of its adoption.
- Study the relationship between the application of Six Sigma in its various dimensions and the organization's market positioning.

- Study and analyze the extent to which the organization under study has adopted Six Sigma in its operations.
- Study and analyze the impact of the Six Sigma method applied by the organization under study on its market positioning.

Study Hypotheses:
To achieve the objectives of the study, and based on previous studies in determining the dimensions of the independent variable, Six Sigma, the following hypotheses will be formulated:

Main Hypothesis 1:
Algeria Telecom adopts the Six Sigma method from the perspective of its employees.

Main Hypothesis 2:
There is a statistically significant relationship at a significance level (≤0.05α) between Six Sigma and the positioning of Algeria Telecom.

Sub-Hypotheses:
- There is a statistically significant relationship at a significance level (≤0.05α) between top management support and the positioning of Algeria Telecom.
- There is a statistically significant relationship at a significance level (≤0.05α) between customer focus and the positioning of Algeria Telecom.
- There is a statistically significant relationship at a significance level (≤0.05α) between service design and the positioning of Algeria Telecom.
- There is a statistically significant relationship at a significance level (≤0.05α) between infrastructure and the positioning of Algeria Telecom.
- There is a statistically significant relationship at a significance level (≤0.05α) between training and qualification and the positioning of Algeria Telecom.
- There is a statistically significant relationship at a significance level (≤0.05α) between continuous improvement and the positioning of Algeria Telecom.

Study Methodology:

To address the topic of the study and answer its problem, the descriptive-analytical methodology will be followed. This approach describes the phenomenon by collecting facts and data about it, then interpreting and analyzing them to reach results that allow for the formulation of recommendations related to the studied phenomenon.

Data Collection Tool:

The primary tool used to gather necessary information is the questionnaire. The questionnaire included 37 sequential questions, designed to align with the characteristics of the target sample. It was divided into three sections as follows:

- **Section 1:** Includes personal variables of the target group, such as gender, age, educational qualification, and professional experience.

- **Section 2:** Adoption of the Six Sigma method. This section assesses the extent to which Algeria Telecom has adopted the Six Sigma method with its various requirements.
- **Section 3:** Achieving the positioning of Algeria Telecom. This section helps to understand how the company positions itself in the market and in the minds of consumers.

Study Population and Sample:

The study population consists of employees of Algeria Telecom (Guelma Province branch). A sample of 40 employees was selected, with 100 questionnaires distributed. A total of 40 valid questionnaires were retrieved for analysis.

Statistical Methods Used:

To process the data obtained from the questionnaire, necessary statistical tools were used, with the support of the SPSS statistical software. These tools were in line with the study hypotheses and included frequency distribution tables, percentages, mean, standard deviation, coefficient of variation, and the (T) test.

Previous Studies:

Study (Sleimani, 2009), titled: "Positioning as a Key to the Success of the Marketing Strategy of the Organization":

This study aimed to explore the ability of a product to meet market sector needs compared to competitors. The study reached several conclusions, the most important of which is that the success of an organization in forming a clear mental image of its products or achieving positioning in the minds of consumers will inevitably lead to the success of its marketing strategy. Thus, positioning is considered the key to the success of the marketing strategy of an economic organization.

Study (KHATIM, 2016), titled: "The Six Sigma Method as a Total Quality Management Tool to Improve the Production of Algerian Companies":

This study aimed to examine the role of using the Six Sigma method in organizations as a tool for Total Quality Management to improve the production of Algerian companies. It focuses on achieving complete customer satisfaction and ensuring the best performance and profitability to face competition and ensure sustainability. The study concluded that Six Sigma provides Algerian organizations with measurable and effective procedures to reduce losses and costs related to poor quality, with the efficiency being reflected in meeting the needs and requirements of the customer.

Study (Sharifi, 2019), titled: "Six Sigma as an Approach to Delivering Exceptional Value to the Final Customer":

This study aimed to explore the impact of applying Six Sigma in achieving exceptional value for the customer in production organizations, through an

exploratory study of the opinions of a sample of department and section managers at the Kufa Cement Plant. The study sought to answer several questions, such as the extent to which Six Sigma dimensions are applied at the plant and how this contributes to providing high-quality products for customers. The study concluded that the plant management encourages and supports the achievement of quality in all its departments and that there is a relationship and impact between applying Six Sigma methodology and delivering exceptional value to the customer.

Study (Mohamed Abdel Moneim, 2019), titled: "Using the Six Sigma Methodology as an Approach to Competitive Advantage for National Industries in Saudi Arabia – An Applied Study":

The study aimed to highlight the importance of using the Six Sigma methodology to improve the productivity of national industries in Saudi Arabia by reducing defect rates and maximizing profits, which would enable national industries to compete locally and internationally. The study concluded that there is a statistically significant relationship between the application of Six Sigma methodology and achieving competitive advantage for national industries in Saudi Arabia. Additionally, it found that there is a statistically significant relationship between Six Sigma application and product quality, continuous improvement policies, quality of production processes, customer focus, and the availability of trained human resources.

Study (Rabouh, Mayouf, and Bakhouch, 2021), titled: "Six Sigma Applications in a Sample of Organizations in Tebessa Province":

This study aimed to examine the reality of applying Six Sigma in business organizations in Tebessa province. To achieve the objectives, a questionnaire was used as the primary data collection tool, and the data were analyzed using both exploratory and confirmatory factor analysis. The study concluded that for Six Sigma to succeed in the organizations under study, several factors must be present, including support from top management, human resources, measurement, and continuous improvement.

Comparison with Previous Studies:

The topic of this research shares similarities with the previous studies in attempting to determine the extent to which the organization under study has adopted Six Sigma and identifying the key factors that enable the organization to meet customer desires and distinguish itself from competitors in the market. However, the difference lies in linking the Six Sigma method to the organization's positioning strategy, which is one of the most important strategies the organization seeks to achieve. The study also focused on investigating whether the application of Six Sigma has an impact on the organization’s positioning strategy. The previous studies were beneficial in providing information on the theoretical framework and helping to identify the research variables.

1.Theoretical Framework of the Study

1.1. What is Six Sigma Method?

Six Sigma is a methodology adopted by an organization to solve its problems and reduce defects in its processes in order to improve the quality of its products or services, aligning with customer requirements and achieving its desired goals.

1.1.1. Concept of Six Sigma

Pande defines Six Sigma as a comprehensive and flexible system for achieving the maximum success of a business, through understanding customer needs by utilizing facts and data, with a focus on improvement and redesigning work processes. (Pande, Neuman, & Cavanagh, 2002)

It is also defined as a process that allows organizations to radically improve their activities through design, monitoring, and daily control of their processes. These procedures emphasize reducing waste or resource loss by minimizing human errors, quality defects, or any discrepancies between the target and process outcomes. (Bounazef, 2012)

Additionally, Six Sigma can be described as a structured approach to improving strategic processes, which heavily relies on statistical tools and scientific methods to reduce defect rates as determined by the customer. (Brady & Theodore, 2006)

Six Sigma is an intelligent business management method that prioritizes customer attention, focusing on facts and data to provide the best solutions. Its improvement efforts target three key areas: improving customer satisfaction, reducing work time, and minimizing waste. (Pande & Holpp, 2002)

Six Sigma is a structured method that uses technical and statistical tools to improve processes. These tools are based on project management principles aimed at enhancing customer satisfaction and achieving organizational goals. (Benziane, Khatim, & Mahmoudi, 2022)

Six Sigma is a structured method that uses technical and statistical tools to improve processes. These tools rely on project management principles to improve customer satisfaction and achieve organizational goals. (KHATIM, 2016)

From the above, it can be concluded that Six Sigma is a methodology that utilizes a set of statistical tools and techniques that allow for early detection of errors and defects identified by the customer and works on solving them. The goal is to achieve a level of customer satisfaction, leading to organizational revenue growth and ensuring its survival and continuity.

1.1.2. Importance of Applying Six Sigma

The application of Six Sigma is considered the optimal tool for business management within an organization. It places customers first and relies on the use of data and facts to reach better solutions for quality problems and improve

the value of the organization. The importance of applying Six Sigma within an organization can be summarized as follows: (Rabah, Maïouf, & Bakhouche, 2021)

- Encouraging employees to work collaboratively and supporting them both materially and morally.
- Understanding the customer's needs and requirements and the changes that occur in them.
- Improving performance levels significantly, which is reflected in cost and profitability figures.
- Training employees on how to conduct brainstorming sessions and creative thinking.
- Enhancing service alignment through organized production and reducing deviations.
- Reducing costs, improving productivity, growing market share, and changing the organization's culture.

1.1.3. Steps for Applying Six Sigma

Six Sigma is considered the most successful method for quality management in organizations, whether production-based or service-based. This is achieved by solving quality issues based on the DMAIC concept, which is a process roadmap applied through five specific stages as follows: (Duret & Pillet, 2005)

- **Define**: This stage involves clearly describing the problem (or diagnosing the process that needs improvement) and its impact on customer satisfaction. It then identifies the key characteristics from the customer's perspective that are related to the processes.
- **Measure**: In this phase, the team measures the current performance level of the process, the defects associated with that process, and studies the core components of the system, including outputs, processes, and inputs.
- **Analyze**: The goal of this phase is to use all the information and data collected from the measurement phase to identify the root causes of the problem or defects using scientific tools and techniques.
- **Improve**: This step involves activities that contribute to performance improvement by making changes to the process to eliminate errors and defects.
- **Control**: This stage ensures that improvements are sustained by setting standardized measures and procedures to maintain performance levels, as well as developing scientific tools to help control and monitor the process. Additionally, compensation systems, incentive programs, budgets, and operational policies are adjusted. (Mohammed Abdel Monem, 2019).

1.1.4. Requirements for Applying Six Sigma

The success of applying Six Sigma in an organization, whether it is production-based or service-oriented, requires a set of key factors. The most important of these factors are highlighted as follows:

- **Support from Top Management**: The application of Six Sigma requires support from the top management of the organization. Through its implementation, the organization needs to adopt new rules, procedures, and tools to ensure the smooth flow of the Six Sigma methodology

throughout the organization. This support stems from the organization's belief in the necessity of comprehensive improvement and development, making it fully prepared to support the changes that will take place (Ben Aïchaoui, 2014; Al-Sharifi, 2019).

- **Customer Focus**: Six Sigma prioritizes focusing on customers, starting and ending with an emphasis on customer needs. Its steps begin with a deep examination to understand customer needs and requirements, and conclude with analyzing customer feedback and their level of satisfaction with the product or service (Warad, Ben Douma, & Boudisa, 2021).
- **Product or Service Design**: Quality in the product or service is one of the essential factors when applying Six Sigma.
- **Infrastructure**: This refers to the various support systems within the organization, such as computers, software, financial allocations for quality programs, and other technologies that assist in the implementation of Six Sigma to ensure product or service quality (Al-Sharifi, 2019).
- **Training and Qualification**: This involves developing and continuously training the organization's human resources, ensuring that they are capable of consistently producing quality outputs (Ben Aïchaoui, 2014).
- **Continuous Improvement**: This refers to the processes within the organization that aim to enhance all activities in order to keep pace with developments in the environment (Al-Sharifi, 2019).

1.2. Theoretical Framework for Positioning

1.2.1. Concept of Positioning

Yves Chirouze defines positioning as a strategic tool that can be used as a guarantee to face market congestion in terms of products and advertising. It gives a product an image that distinguishes it from competing products in the minds of customers based on their expectations (Yves, 1995).

Kotler defines it as the process of designing the company's offering and image in such a way that it occupies a competitive, purposeful, and distinctive place in the minds of the target customers (Hooley, Piercy, Nicoulaud, & Rudd, 2008). Whalley defines positioning as the way a company distinguishes itself in the market and how the entire market views its products and services. It involves all parties related to the organization (Andrew, 2010).

Positioning is also described as a proactive policy where the organization selects the position it takes in the market against competitors and clearly presents its value to customers. In other words, positioning involves the company's selection of key distinguishing features that allow the public to place the offering in the world of products and distinguish it from others (Aissat, 2018).

It is also defined as a strategic choice aimed at offering a credible, attractive, and distinct offering (product, brand, or information) to the market and in the minds of customers (Lendrevie, Lévy, & Lindon, 2009). From the above, positioning can be defined as the place a product occupies in the customer's mind, allowing it to stand out from competing products in the market.

1.2.2. Objectives of Positioning

Positioning defines the key characteristics of the product that distinguish it from competitors' products, creating a consumer perception. The positioning process aims to achieve the following objectives (Bessouh & Benhabib, 2007):

- Recognizing the image of the product and brand in the customer's mind compared to the competition;
- Finding the right place for the product or service in the market;
- Gaining market share benefits;
- Rebuilding the portfolio of old products;
- Seeking a strategic competitive advantage.

1.2.3. Stages of Positioning

The positioning process goes through several steps, which can be summarized as follows (Sleimani, 2009):

- **Gathering necessary information**: Understanding how customers view the company's product, how they might perceive it, or how they expect it.
- **Collecting information on competitors' products or services**: Identifying and analyzing the market positions of competing products or services.
- **Studying and analyzing the various positions**: Including the company's own product/service and comparing it to those of competitors.
- **Studying the market and surrounding market conditions**: This includes studying the competition's needs and how they impact the product's positioning.
- **Evaluating the current position**: Assessing the product's current position in the market and its appropriateness compared to competitors' offerings.
- **Proposing possible alternatives for positions**: Identifying alternative positioning strategies.
- **Evaluating alternatives**: Selecting the best and most suitable alternative position for the company's product or service, ensuring it stands out, competes effectively, and is well accepted.

1.2.4. Levels of Positioning

Also known as aspects of positioning, these are numerous and varied. They can be categorized into product/service positioning, brand positioning, and market positioning, as follows (Mohaream, 2006):

- **Corporate Image Positioning**: Also known as brand positioning, where the company positions itself based on the quality of its products or services, rather than positioning individual products.
- **Product (Service) Positioning**: The company aims to achieve prominence through price, advanced technology, and high-quality offerings. Here, the company works to distinguish its products and services based on technological features, price, quality, distribution channels, and presentation.

- **Market Positioning**: Also known as market positioning, where the market perceives the product or service as more valuable than others.

1.3. The Relationship Between the Application of Six Sigma and Achieving Positioning:

Six Sigma is considered one of the best methodologies for improving processes and achieving high-quality outputs, including goods and services, as well as customer satisfaction. Its strength lies in its ability to identify issues and reach near-zero defects. Implementing Six Sigma in organizations is essential for process improvement by reducing error rates, adjusting workflows to meet predefined standards and goals, which leads to an enhanced company image among its customers and in the broader market. This, in turn, results in achieving a competitive advantage and consequently improving market positioning. This can be achieved through the following elements, as outlined by (Jad Hussein, 2015):

1.3.1. Focus on Beneficiaries (Customers):

The needs of customers regarding the company's products or services are a major influence on the company's policy. The ability to meet these needs and deliver high-quality offerings that satisfy their requirements enables the company to maintain a competitive advantage, build a strong reputation, and establish trust with its customers. This leads to the development of a positive image and the achievement of market positioning, which is measured by customer satisfaction and effective communication between the company and its customers through various communication channels.

1.3.2. Continuous Performance and Process Improvement:

Achieving high-quality products and services on a continuous basis primarily depends on continuous improvement in processes. This is accomplished by encouraging teamwork, fostering creative initiatives, and enhancing the knowledge, skills, and competencies of all team members. Continuous improvement also relies on measuring customer satisfaction regularly, conducting research and studies for development and enhancement, and aligning marketing strategies with customer needs. This ensures efficiency, effectiveness, and the retention of competitive advantages, ultimately reaching the desired positioning.

1.3.3. Ensuring High-Quality Human Resources:

The success of Six Sigma requires the availability of competent human resources capable of working in teams, making decisions, and executing tasks with precision. Highly qualified personnel allow the company to maintain its market position. In contrast, unqualified or ineffective staff hinder Six Sigma efforts and negatively affect the company's ability to adapt, compete, and maintain its positioning in the market.

1.3.4. Data-Driven Management:

A data-driven management approach is fundamental in Six Sigma, which relies on facts and data to solve problems and identify root causes. Decisions are based on actual numbers and facts rather than intuition or guesswork. This approach enables the company to accurately understand customer needs and desires and to fulfill them in ways that differ from competitors. As a result, it helps the company establish a strong position in the market and enhance its image among customers.

1.3.5. Unlimited Cooperation:

Encouraging and expanding cooperation among employees within the company, fostering partnerships with external entities, breaking down barriers between different management levels, and involving employees in decision-making are crucial for building trust within the organization. This promotes a collaborative and team-oriented culture, which positively impacts achieving the organization's goals, especially satisfying customer needs, maintaining a competitive advantage, and ultimately achieving the desired market positioning.

2. The Application of Six Sigma and its Impact on Organizational Positioning

2.1. Measuring the Reliability and Validity of the Questionnaire

Reliability refers to the consistency of the measurement tool, meaning that it provides similar or the same results when applied multiple times under similar conditions. This can be measured using Cronbach's Alpha coefficient. On the other hand, the validity of the tool refers to how well each item or statement in the questionnaire relates to the overall topic of the study, reflecting the degree to which the items measure what they are intended to measure. Validity can be calculated by taking the square root of Cronbach's Alpha coefficient. The results were as follows:

Table 01: Results of the Reliability and Validity Test

Questionnaire Section	Number of Items	Reliability Coefficient	Validity Coefficient
Six Sigma Methodology	25	0.963	0.981
Positioning	12	0.884	0.940
All Sections	37	0.961	0.980

Source: Prepared by the researchers based on the results of the SPSS statistical analysis program

It is evident from the table above that the value of Cronbach's alpha coefficient is greater than the acceptable threshold of 0.6 for reliability across the entire questionnaire. Additionally, the degree of consistency between the items in each section is high, with a value of 97%. This indicates credibility in the responses and suggests a strong correlation between the items, confirming the reliability and validity of the questionnaire and its suitability for analysis, ensuring trust in the results that will be obtained.

2.2. Presentation of Results Related to the Personal Characteristics of the Study Sample

The study sample consisted of 40 individuals from the employees of the Algerian Telecommunications Company. The following table presents their personal characteristics:

Table 02: Distribution of Study Sample Based on Personal Characteristics

Variable	Category	Frequency	Percentage (%)
Gender	Male	26	65
	Female	14	35
Age	Less than 20 years	/	/
	20 to 40 years	25	62.5
	41 to 60 years	15	37.5
	Older than 60 years	/	/
Education Level	Secondary	4	10
	University	36	90
	Other	/	/
Years of Experience	Less than 5 years	5	12.5
	5 to 10 years	8	20
	11 to 15 years	18	45
	More than 15 years	9	22.5
Total		40	100

Source: Prepared by the researchers based on SPSS analysis results.

According to the results shown in the table above, it is clear that the percentage of males is 65%, while the percentage of females is 35%. As for age, 62.5% of the study sample are between 20 and 40 years old, which is the largest age group. This is followed by 37.5% of individuals aged between 41 and 60 years. In terms of educational qualifications, 90% of the sample hold a university degree, while those with a secondary school level make up 10% of the sample. Regarding years of work experience, 12.5% of the sample have less than 5 years of experience, which is the lowest percentage. Meanwhile, 20% have 5 to 10 years of experience, followed by 22.5% with more than 15 years of experience, and 45% have 11 to 15 years of experience, which is the largest group in terms of work experience.

2.3. Analysis of Study Variables

2.3.1. Analysis of Respondents' Answers Regarding Six Sigma Method and Positioning Variable

The following table shows the results of the descriptive analysis of the respondents' answers regarding the Six Sigma method and the positioning variable, by calculating the mean and standard deviation as follows:

Table (03): Statistical Indicators of Study Variables

Statements	Mean	Standard Deviation	Verification Degree
The management of the organization adopts various quality programs such as the Six Sigma method in its operations	3.975	0.800	High
The management of the organization is concerned with applying the Six Sigma method to achieve high quality in its services	4.025	0.767	High
The management of the organization identifies quality and service-related problems and works on solving them using the Six Sigma method	3.800	0.911	High
The organization has a department dedicated to quality control with the authority to apply the Six Sigma method	3.400	0.928	High
Senior management support	**3.800**	**0.753**	**High**
The management of the organization works on determining and analyzing customer demands using the Six Sigma method	3.725	0.816	High
The management of the organization strives to meet customer needs with high quality through the application of the Six Sigma method	3.825	0.873	High
The management of the organization and its employees interact with customer complaints and take their suggestions into account	3.975	0.733	High
The management of the organization seeks to achieve customer satisfaction by applying the Six Sigma method	3.925	0.729	High
Focus on the customer	**3.862**	**0.620**	**High**
The organization provides high-quality services compared to its competitors	3.850	0.892	High
The organization works on providing after-sales services to achieve differentiation from its competitors	4.025	0.800	High
The organization works on reducing defects in its services through the application of the Six Sigma method	3.825	0.873	High
The organization measures the costs of its services to control their quality	3.875	0.911	High
Service design	**3.893**	**0.667**	**High**
The organization has computers, equipment, and software to facilitate the application of the Six Sigma method and provide high-quality services	4.050	0.875	High

Statements	Mean	Standard Deviation	Verification Degree
The management of the organization uses measurement techniques that enable it to give accurate results about its operations in providing high-quality services	4.050	0.714	High
The management of the organization allocates a special budget to provide modern quality programs	4.250	0.588	High
The management of the organization works on maintaining its equipment to ensure the delivery of services with the required quality	4.225	0.800	High
Infrastructure	**4.143**	**0.622**	**High**
The organization has employees with high skills, efficiency, and experience in applying various quality programs such as the Six Sigma method	4.200	0.723	High
The employees of the organization are trained to use modern techniques for applying the Six Sigma method to provide high-quality services	3.975	0.973	High
The organization encourages its employees to take specialized training courses on quality programs	4.150	0.699	High
The management of the organization organizes meetings and workshops to train its employees on using quality programs	4.175	0.747	High
The management of the organization allocates financial resources to train its employees on learning quality programs	4.125	0.722	High
Training and qualification	**4.125**	**0.666**	**High**
The organization is keen on improving the functions of its various departments, enabling it to apply the Six Sigma method	3.825	0.984	High
The organization continuously evaluates customer satisfaction with its services	4.100	0.671	High
The organization works on improving the quality of its services to achieve customer satisfaction and loyalty	4.225	0.659	High
The organization continuously updates its methods for measuring the quality of its services	4.025	0.800	High
Continuous improvement	**4.043**	**0.647**	**High**
Results of the Six Sigma method	**3.984**	**0.585**	**High**
The organization enjoys a reputation that encourages customers to deal with it	4.200	0.516	High
The organization has a good image compared to its competitors, which makes	4.100	0.590	High

Statements	Mean	Standard Deviation	Verification Degree
customers trust its services			
The services of the organization are distinguished from other services in the market	4.000	0.554	High
The organization provides sufficient information about its services to its customers	4.275	0.554	High
The organization provides highly reliable information about its services to its customers	4.200	0.563	High
The services of the organization are considered high-performing when used	4.075	0.572	High
The services of the organization are distinguished by safety and comfort when used	4.050	0.552	High
The organization provides high-quality services at reasonable prices	4.100	0.671	High
The organization provides services with quality matching their prices	4.075	0.655	High
The organization provides services at prices better than its competitors	4.050	0.677	High
The organization offers discounts to its loyal customers	3.375	0.978	High
The same customers repeat dealings with the organization's services due to the quality of its services	3.900	0.810	High
Results of the Positioning Axis	**4.033**	**0.433**	**High**

Source: Prepared by the researchers based on the results from SPSS statistical analysis software.

It is evident from the table above that the responses of the study sample regarding the Six Sigma method in Algeria Telecom were in line with a high verification degree, with a mean of 3.984 and a standard deviation of 0.585. This indicates a weak dispersion of the values from the mean. The results were as follows:

- **Senior Management Support**: The results show that the responses of the study sample regarding senior management support were high, with a mean of 3.800. The sample agreed that Algeria Telecom's management adopts various quality programs, such as the Six Sigma method, which enables the identification of problems related to the quality of its services and the resolution of these problems by the quality control department, which has the authority to apply this method.
- **Customer Focus**: The results in the table above show that the responses of the study sample regarding customer focus were high, with a mean of 3.862. The sample agreed that Algeria Telecom works on determining customer demands and fulfilling their needs with high quality through the application of the Six Sigma method. Additionally, the management and

employees interact with customer complaints and take their suggestions into account to achieve customer satisfaction.

- **Service Design**: The results show that the responses of the study sample regarding service design were high, with a mean of 3.893. The sample agreed that Algeria Telecom provides high-quality and distinctive services compared to its competitors. This is achieved by offering after-sales services, reducing defects, and measuring the costs of its services to control their quality, all through the use of the Six Sigma method.
- **Infrastructure**: The results show that the responses of the study sample regarding infrastructure were high, with a mean of 4.143. The sample agreed that the organization has computers, equipment, and statistical methods that facilitate the application of the Six Sigma method to provide high-quality services. The organization allocates a budget for providing modern quality programs and regularly maintains its equipment to ensure the delivery of services with the required quality.
- **Training and Qualification**: The results in the table above show that the responses of the study sample regarding training and qualification were high, with a mean of 4.125. The sample agreed that Algeria Telecom has employees with high skills, efficiency, and experience in applying various quality programs such as Six Sigma. In order to apply Six Sigma, the organization trains its employees to use modern techniques for providing high-quality services. The organization also encourages its employees to take specialized training courses on quality programs and organizes meetings and workshops to train its employees on using these programs, with financial allocations for this purpose.
- **Continuous Improvement**: The results show that the responses of the study sample regarding continuous improvement were high, with a mean of 4.043. The sample agreed that Algeria Telecom is keen to improve the functions of its departments, enabling it to apply the Six Sigma method. Additionally, the organization continuously measures the quality of its services and evaluates customer satisfaction to achieve their loyalty and satisfaction.
- **Positioning**: It is evident from the responses of the sample in the table above that the overall average for the positioning axis was 4.033, with a standard deviation of 0.433, indicating a weak dispersion of values from the mean. This falls under a high acceptance degree. The study sample confirmed that Algeria Telecom enjoys a good reputation and image, and its services are distinctive compared to its competitors. This builds customer trust in the information the organization provides about its services, which is seen as sufficient and highly reliable. This makes customers feel safe and comfortable when using the services. Furthermore, the organization provides high-quality services at reasonable prices, better than its competitors, and offers discounts to loyal customers, encouraging them to repeat their dealings with the organization.

2.4. Testing the Hypotheses of the Study

In order to test the study's hypotheses, it is necessary to verify the normality of the data distribution, ensuring that it follows a normal distribution. For this purpose, the Kolmogorov-Smirnov Z test was used. The results were as follows:

Table (04): Results of the Normal Distribution Test

Statement	**Z-Test Value**	**Significance Value (sig)**
Entire Questionnaire	0.096	0.200

Source: Prepared by the researchers based on the results from the SPSS statistical analysis program

The table shows the results of the normal distribution test, where the Z-test value for the entire questionnaire was 0.096 with a significance level of 0.200. Since the significance level was greater than 0.05, the data follows a normal distribution, allowing for parametric tests to be performed on it.

2.4.1. Testing the First Main Hypothesis

To test the first main hypothesis, a one-sample t-test was used, as explained below:

Table (05): Results of One-Sample t-test to Test the First Main Hypothesis

Statement	**Mean**	**Degrees of Freedom**	**Calculated t-value**	**Significance Level (sig)**	**Decision**
Algeria Telecom adopts Six Sigma	3.984	39	389.100	0.000	Accepted

Source: Prepared by the researchers based on the SPSS statistical analysis results

The table above shows the results of the first main hypothesis test. The calculated t-value was 389.100 with a significance level of 0.000 (sig), which is less than the significance level of 0.05 ($\alpha \geq 0.05$). Therefore, the alternative hypothesis is accepted, which states: "Algeria Telecom adopts Six Sigma." Based on the mean value of 3.984, it can be concluded that Algeria Telecom's adoption of Six Sigma is at an acceptable level according to the opinions of the study sample, as it falls in the high approval range.

2.4.2. Testing the Second Main Hypothesis

Simple linear regression was used to determine the relationship between the independent variables and the dependent variable, *positioning strategy*, and the results were as follows:

Table (06): Results of Testing the Second Main Hypothesis

Hypothesis	Independent Variable	Regression Coefficient	Regression Constant	Correlation Coefficient (R)	Determination Coefficient (R^2)	Calculated T Value	Calculated F Value	Significance Level (Sig)
Sub-hypotheses	Top Management Support	0.207	3.248	0.359	0.129	2.371	5.623	0.023
	Customer Focus	0.394	2.510	0.563	0.317	4.204	17.673	0.000
	Service Design	0.331	2.745	0.509	0.259	3.644	13.277	0.001
	Infrastructure	0.325	2.686	0.466	0.217	3.249	10.559	0.002
	Training and Qualification	0.418	2.308	0.643	0.413	5.169	26.720	0.000
	Continuous Improvement	0.389	2.462	0.580	0.336	4.389	19.268	0.000
Main Hypothesis	Six Sigma Methodology	0.438	2.289	0.591	0.349	4.511	20.352	0.000

Source: Prepared by the researchers based on SPSS statistical analysis results.

The table above shows the results of the simple linear regression analysis for the sub-hypotheses. The findings confirm the existence of a statistically significant relationship at a significance level of ($\alpha \leq 0.05$) between the independent variables (Top Management Support, Customer Focus, Service Design, Infrastructure, Training and Qualification, and Continuous Improvement) and the dependent variable. The correlation coefficients for these variables are as follows: 0.359, 0.563, 0.509, 0.466, 0.643, and 0.580, respectively, indicating a positive and moderate correlation between each independent variable and the dependent variable.

The determination coefficient (R^2) further proves the relationship between each independent variable and the dependent variable. The explanatory power of the regression model is as follows:

- 12.9% of the variation in positioning is attributed to Top Management Support.
- 31.7% of the variation in positioning is attributed to Customer Focus.
- 25.9% of the variation in positioning is attributed to Service Design.
- 21.7% of the variation in positioning is attributed to Infrastructure.
- 41.3% of the variation in positioning is attributed to Training and Qualification.
- 33.6% of the variation in positioning is attributed to Continuous Improvement.

The F-test indicates that the overall model is statistically significant, with a significance level of Sig=0.000, which is less than ($\alpha \leq 0.05$). Accordingly, the null hypotheses are rejected, and the following alternative hypotheses are accepted:

- There is a statistically significant relationship at a significance level of (α ≤ 0.05) between Top Management Support and the positioning of Algeria Telecom.
- There is a statistically significant relationship at a significance level of (α ≤ 0.05) between Customer Focus and the positioning of Algeria Telecom.
- There is a statistically significant relationship at a significance level of (α ≤ 0.05) between Service Design and the positioning of Algeria Telecom.
- There is a statistically significant relationship at a significance level of (α ≤ 0.05) between Infrastructure and the positioning of Algeria Telecom.
- There is a statistically significant relationship at a significance level of (α ≤ 0.05) between Training and Qualification and the positioning of Algeria Telecom.
- There is a statistically significant relationship at a significance level of (α ≤ 0.05) between Continuous Improvement and the positioning of Algeria Telecom.

As for the main hypothesis, the results confirmed a statistically significant relationship at a significance level of (α ≤ 0.05) between the Six Sigma approach and the positioning of Algeria Telecom. The correlation coefficient was 0.591, indicating a moderate correlation between the two variables. The determination coefficient was 0.349, meaning that approximately 35% of the variation in the positioning of Algeria Telecom is explained by the Six Sigma approach, while the remaining portion is due to other factors. The F-test showed that the overall model is statistically significant, with a significance level of Sig=0.000, which is less than (α ≤ 0.05).
Accordingly, the null hypothesis is rejected, and the following alternative hypothesis is accepted:

- There is a statistically significant relationship at a significance level of (α ≤ 0.05) between the Six Sigma approach and the positioning of Algeria Telecom.

The relationship between the Six Sigma approach and the positioning of Algeria Telecom can be expressed mathematically through the linear regression equation as follows:

$$\mathbf{Y=0.438x+2.289Y}$$

Where:

- x: Six Sigma approach.
- Y: Positioning of Algeria Telecom.

Conclusion

The Six Sigma approach is considered one of the most important quality programs that organizations focus on implementing, as it aims to reduce errors and correct defects in their processes and products. This is to offer products or services that stand out in quality, price, and even presentation compared to competitors. This enables the organization to attract a larger number of customers by meeting their needs in line with their expectations, thereby

achieving their satisfaction and loyalty to the organization. As a result, the organization gains a strong reputation, position, and a unique market position compared to its competitors. The study reached the following results:

- The results showed that the management of Algeria Telecom aims to implement various quality programs, especially the Six Sigma approach, to identify problems related to the quality of its services and work on resolving them to offer high-quality services.
- Algeria Telecom is keen to apply the Six Sigma approach to identify, analyze, and meet the needs of its customers, as well as respond to their complaints and suggestions to achieve their satisfaction and loyalty.
- Algeria Telecom seeks to offer services with better quality and prices than its competitors by reducing defects using the Six Sigma approach.
- The results revealed that Algeria Telecom allocates financial resources to provide equipment, computers, and software to facilitate the implementation of the Six Sigma approach, allowing it to obtain accurate results about its operations in providing high-quality services.
- The study confirmed that Algeria Telecom has skilled and experienced employees in applying the Six Sigma approach, as it organizes meetings and workshops where they are trained on using various quality programs.
- The study results showed that Algeria Telecom focuses on achieving customer satisfaction and motivating them to repeat their dealings with the company by striving to meet their needs and desires, using the Six Sigma approach to minimize defects in its services and provide them with high quality, thus enhancing its position in the market compared to its competitors.
- The study results confirmed that Algeria Telecom adopts the Six Sigma approach in its various dimensions at an acceptable level.
- The results demonstrated a moderate and statistically significant correlation between Six Sigma in its various dimensions (top management support, customer focus, service design, infrastructure, training and development, and continuous improvement) and the positioning of Algeria Telecom, indicating that the organization tries to leverage all Six Sigma dimensions to achieve positioning.

Finally, the study provided a set of recommendations:

- The need to apply the Six Sigma approach in all fields and areas, due to its ability to solve problems and focus on the quality of operations.
- Greater emphasis should be placed on the support of top management in applying Six Sigma, enabling the organization to achieve high-quality services compared to competitors.
- Focus on providing various equipment and software and maintaining them to facilitate the application of Six Sigma in reducing service quality problems and defects, ensuring that services are acceptable and distinguished by customers in a competitive market, and ultimately creating a positive image and reputation for the organization.
- More attention should be given to how services are presented to customers to ensure their needs and desires are met with a high level of satisfaction.
- Further attention should be given to communication with customers, which can be achieved by listening to their complaints, suggestions, and

preferences, and measuring them using various quality programs to achieve their satisfaction and loyalty to the organization and its services.

- Attention should be given to improving the functions of the organization's departments and updating their statistical methods using Six Sigma to achieve positioning for the organization and its services in the market.
- Employees should be trained on using various quality programs by encouraging them and increasing training sessions to improve their skills and expertise, enabling them to offer services that meet or exceed customer expectations.
- Efforts should be made to encourage creativity, innovation, and constructive plans by all employees of the organization.
- Experts and specialists should be attracted to benefit from their experience in applying Six Sigma.
- Coordination with organizations that have experience in implementing Six Sigma should be sought to learn from them.
- The obstacles preventing the implementation of Six Sigma to achieve organizational positioning should be identified and removed.

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