

## The Impact of Leadership to Apply the Principles of Total Quality Management: Algerian Company

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**Abstract:** In today's environment, the competition between companies requires the adaptation of new concepts in management like Total Quality Management, Just In Time....So to apply these concepts it is useful to have a good leader with a high skills. The aim of this research is to study the role of the leadership to achieve the objective of the total quality management in Algerian companies. To investigate the relationship between the leadership and the principles of TQM, we choose a field research using an Algerian company (Dairy Arib), with 60 respondent in administrative level choosing randomly. The results show that the behavioural characteristics have a great impact on the employees more than the method used to take decisions to implement the five principles of total quality management.

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**Key words:** leadership – total quality management – field research – Algerian company

### Introduction:

The leadership and management skills required today at the top of large and complex organizations require extraordinary leader commitment, innovation, and new ways of working to meet the resource challenge of doing more with less. For leaders to survive the future, they must understand what skills and tools are needed to lead and get the job done. (Harry D. Gatanas, 1992).

The implementation of TQM differ from the companies, but there is a global agreement about the importance of leadership to achieve the objectives of the enterprises like the continue improvement, the product quality.....Form this we can say that the achievement of these objectives led the necessity of a good leadership. Only the leadership of top management is in position to create a necessary organizational culture that is capable to lead and support TQM actions among employees from the lower levels of the organization. (M.Sc. Serafimovska H.& M.Sc. Ristova E).

### 1. Definition of leadership:

The definition of leadership is a process whereby an individual influences a group of individuals to achieve a common goal.

Leadership: Is a process, it Involves influence, Occurs in a group context (you need to have at least one constituent) and Involves goal attainment. (G. Ricketts, 2009).

“The leadership is the behaviour of an individual ... directing the activities of a group toward a shared goal” “the influential increment over and above

mechanical compliance with the routine directives of the organization.

Also the leadership is defined as “a process of giving purpose (meaningful direction) to collective effort, and causing willing effort to be expended to achieve purpose”. And the ability to step outside the culture ... to start evolutionary change processes that are more adaptive” (Jacobs & Jaques, 1990).Also Northouse (2004) identified four common themes in the way leadership now tends to be conceived: (1) leadership is a process; (2) leadership involves influence; (3) leadership occurs in a group context; and (4) leadership involves goal attainment. He thus defines leadership as “a process whereby an individual influences a group of individuals to achieve a common goal.

House et al., 1999: define the leadership as the ability of an individual to influence, motivate, and enable others to contribute toward the effectiveness and success of the organization...”

So the term leadership is a word taken from the common vocabulary and incorporated into the technical vocabulary of a scientific discipline without being precisely redefined”(available on the site [http://www.diss.fuberlin.de/diss/servlets/MCRFileNodeServlet/FUDISS\\_derivate\\_00000001975/02\\_Kap2.pdf?hosts](http://www.diss.fuberlin.de/diss/servlets/MCRFileNodeServlet/FUDISS_derivate_00000001975/02_Kap2.pdf?hosts)) Richard Bolden (2004) shows that leadership is a complex phenomenon that touches on many other important organisational, social and personal processes. It depends on a process of influence, whereby people are inspired to work towards group goals not through coercion, but through personal motivation (what is leadership)?

**1.1 Leadership Characteristics:** Kristina G. Ricketts (2009) mentions the characteristics of the leader as follows: Efficient coaching skills ☑ Confidence ☑ Consistency between word and action – “walking the talk” ☑ Creativity ☑ Empathic listening skills ☑ Being visionary ☑ Inspiring ☑ Long-term focus ☑ Maintaining a balance between individual needs and team needs ☑ Awareness of realistic conditions ☑ Strong self-esteem ☑ Sense of priorities ☑ Service mentality ☑ Sincerity ☑ Technical or contextual expertise ☑ Trust ☑ Willingness to share responsibility ☑ Willingness to share credit or recognition.

### 1.2 Leadership Competencies:

1. Know yourself and seek self-improvement - In order to know yourself, you have to understand your be, know, and do, attributes. Seeking self-improvement means continually strengthening your attributes. This can be accomplished through self-study, formal classes, reflection, and interacting with others.

2. Be technically proficient - As a leader, you must know your job and have a solid familiarity with your employees' tasks.

3. Seek responsibility and take responsibility for your actions - Search for ways to guide your organization to new heights. And when things go wrong, as they often tend to do sooner or later — do not blame others. Analyze the situation, take corrective action, and move on to the next challenge.

4. Make sound and timely decisions - Use good problem solving, decision making, and planning tools.

5. Set the example - Be a good role model for your employees. They must not only hear what they are expected to do, but also see. We must become the change we want to see - Mahatma Gandhi 6. Know your people and look out for their well-being - Know human nature and the importance of sincerely caring for your workers.

7. Keep your workers informed - Know how to communicate with not only them, but also seniors and other key people.

8. Develop a sense of responsibility in your workers - Help to develop good character traits that will help them carry out their professional responsibilities.

9. Ensure that tasks are understood, supervised, and accomplished - Communication is the key to this responsibility. (Manoj Kumar Sharma and Miss. Shilpa Jain, 2013).

## 2. The total quality management:

### 2.1 Definition:

Total Quality Management (TQM) is a means for improving personal effectiveness and performance and for aligning and focusing all individual efforts throughout an organization. It provides a framework

within which you may continuously improve everything you do and affect. It is a way of leveraging your individual effort and extending its effect and its importance throughout an organization and beyond.

TQM is a means through which an organization creates and sustains a culture committed to continuous improvement.

Total Quality Management addresses the quality of management as well as the management of quality. It involves everyone in an organization in a systematic long-term endeavor to develop processes that are customer oriented, flexible and responsive, and constantly weapon improving in quality. Quality includes any factor of product or service of value to a customer. Ultimately, TQM is a means through which an organization creates and sustains a culture committed to continuous improvement (Brian B. Mansir & Nicholas R. Schacht, 1989).

### 2.2 Total quality management tools:

There are different tools like The Plan Do Check Act cycle or shewhart cycle it is a tool to test and provide a continuous improvement of quality, Brainstorming: the concept is to invite participants to suggest solutions to a problem without any evaluation of the correctness of their ideas, Fishbone Diagram Ishakawa Diagram: Cause effect diagram it examine the factors that influence given outcome and group the causes into categories. Tree diagram: this tools is used to systematically map out, it grouped the tasks that need to be accomplished to achieve the goals.....Statistical tools: these tools used to analyse the defects and make the correct decisions regarding the cause of a problem.....(Melsa J.L).

### 2.3 The principles of Total Quality Management:

The seven quality management principles are: 1 – Customer focus 2 – Leadership 3 – Engagement of people 4 – Process approach 5 – Improvement 6 – Evidence-based decision making 7 – Relationship management. (International Organization for Standardization, Quality management principles, available on: <http://www.iso.org/iso/pub100080.pdf>).

**Customer focus:** is to meet customer requirements and to strive to exceed customer expectations.

**Leadership:** Leaders at all levels establish unity of purpose and direction and create conditions in which people are engaged in achieving the organization's quality objectives.

**Engagement of people:** Competent, empowered and engaged people at all levels throughout the organization are essential to enhance its capability to create and deliver value.

**Process approach:** Consistent and predictable results are achieved more effectively and efficiently when activities are understood and managed as interrelated processes that function as a coherent system.

**Improvement:** Successful organizations have an ongoing focus on improvement.

**Evidence-based decision making:** Decisions based on the analysis and evaluation of data and information are more likely to produce desired results.

**Relationship management:** For sustained success, an organization manages its relationships with interested parties, such as suppliers.

### 3. Literature reviews:

Harry D. Gatanas, LTC, Leadership and Total Quality Management: This study focuses on the skills required of senior level leaders (leaders at the top one or two echelons of an organization), the application of those skills to TQM, and the role of leadership when implementing TQM. Also two examples of successful TQM implementation in government and industry will be reviewed with a focus on leader actions which contributed to organizational improvements. Finally, the paper will suggest actions and techniques which may prove helpful to leaders when implementing TQM.

Study of M.Sc. Serafimovska H. and M.Sc. Ristova E. which analyze the success of the organization to achieve quality control depends on the ability and attitude of the top management. They propose the PDCA model of leadership which contains four steps: Plan, do, check and act.

Esam M. A. Mustafa and Abdul Talib Bon, 2012 which examine the Role of top management leadership and commitment in total quality management in service organization in Malaysia: A review and conceptual framework: Purpose of this paper is to review the role and impact of top management commitment and leadership on total quality management (TQM) in service organizations in Malaysia, and to come out with a conceptual framework model. A total of 15 related studies selected from well known electronic academic resources and databases (e.g. Emeraldinsight, Elsevier Sciencedirect and Scopus) and deeply reviewed.

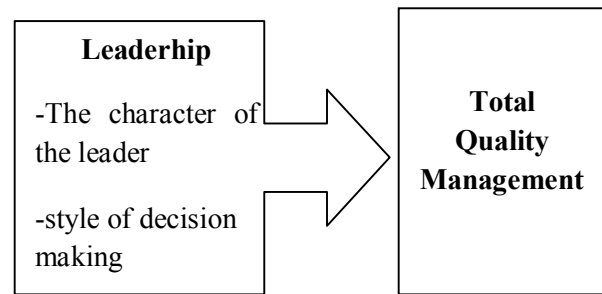
### 4. Methodology research:

The model used in this study divided leadership into two indices: the characters of the leader and the method to make the decisions, and the dependent variable according to the figure below:

**4-1 Study hypothesis:** The study is intended to open few windows towards leadership and TQM. The study is aimed at measuring the extent to which the leadership enhances the implementation of TQM and the hypotheses for the study are described as follows:

**Hypothesis 1: An organisation's level of leadership is positively related to the implementation of TQM.**

**Hypothesis 2: the implementation of TQM is positively influenced by the leadership**



**Figure (1): Conceptual model**  
Source: from the literature reviews

### 4-2 Data collection

The respondents were all employees in the company. The questionnaire contained 23 statements to which respondents indicated the extent of their agreement on a 5-point Likert scale (1 = strongly disagree and 5 = strongly agree).

Our sample of this research was employees working in the company of Arib. Most of the respondents are situated in the medium level of the companies mentioned in the table follows. The response rate was 67.3 per cent.

Respondents were encouraged to ask questions about the purpose of the survey and to make sure that the meanings of the questions were clear. All such questions were answered during the administration of the survey.

Data collected through quantitative survey approach. The questionnaires is distributed to 60 employees that work in different level in the company.

In this study, the responses and information collected from the various statistical methods will be used to analyze the data that we will collect from the 60 respondents. The Statistical Package for the Social Sciences (SPSS, version 27.0) package.

### 4-3 Respondents Profile:

The data for the study was collected from 60 respondents choosing randomly. The data set covers various aspects of leadership and TQM. As per the table-2 demographic profiles of the respondents. Female participants in the study was one third where as male participants consisted of two third of the total population. Age wise distribution depicts 31-40 age group dominates in the study consisting with 50% of the total sample, The almost of the respondent have the post graduate, it consists 51,67%. The respondents having less than 5 years of experience at current organisation is very well present in the study consisting of 53,3%

**Table 2: Respondents Profile**

Parameter	Group	#	%
<b>Sex</b>	Female	27	45
	Male	33	55
<b>Age</b>	20-30	3	5
	31-40	30	50
	41-50	10	16.66
	>50	17	28.33
<b>Education</b>	Medium	4	6.67
	Secondary	10	16.66
	License	15	25
	Post Graduation	31	51.67
<b>Total Experience</b>	>5years	32	53.3
	< 5 years	28	46.7
<b>Total</b>		60	100

**4-5-1 The test of the reliability:**

In order to test for the reliability Cronbach's alpha was used to test the reliability of the measures. All variable and sub-variable items were confirmed valid since their factor loading values were more than 0.6. This result mirrors previous studies conducted by Bontis (1998); as shown in the table 3.

**4-5-2 The Kolmogorov-Smirnov test:**

The Kolmogorov-Smirnov test for normality was used to see whether the responses had a normal curve about the mean. All dependent and independent variables were tested for normality. If the significance level was more than 5 percent, normality was assumed.

Table (3) shows that all the independent and dependent variables are normally distributed.

Items	Cronbach's alpha	(K-S)Z	Sig
<i>The character of the leader</i>	0.777	0.121	0.237
<i>Style of making decision</i>	0.726	0.177	0.250
<i>Leadership</i>	0.888	0.187	0.107
<i>TQM</i>	0.832	0.132	0.104

Table 4 depicts the mean scores of each variable and its corresponding construct. Generally speaking, all items scored in the affirmative (1 strongly disagree, 5 strongly agree, with 3 the mid-point) with mean values greater than 3.0.

**Hypothesis 1: An organisation's level of leadership is positively related to the implementation of TQM.**

**The sub hypothesis are:**

**Hypothesis 1a:** An organisation's level of character of the leader is positively related to the implementation of TQM.

**Hypothesis 1b:** An organisation's level of the style of making decision is positively related to the implementation of TQM.

**Table- 4: Statistical results of summary variables** Source: from SPSS

Items	Mean	Std.Dev	t-value
<b>Leadership</b>	3.55	0.420	51.003
Character of the leader	3.62	0.424	11.394
Style of decision making	3.45	0.631	5.578
<b>Total quality management</b>	4.03	0.295	27.071

**4-6 Testing hypothesis:**

Since the population for the study is heterogeneous, a stratified random technique has been adopted to select the respondents for the study, 60 respondents were selected randomly from different levels of Algerian organisation. A linear regression model was drawn to explain the relationship between TQM and Leadership.

**Table 5: Leadership management Vs TQM Summary**

	Leadership	Multiple R	R <sup>2</sup>	Adjusted R <sup>2</sup>
<b>TQM</b>	<i>Character of the leader</i>	0.686	0.471	0.022
	<i>Style of making decision</i>	0.483	0.233	0.055
	<i>Leadership</i>	0.658	0.433	0.042

Source:from SPSS

As defined in table-5, the regression equation of the implementation of TQM with the character of leader and the style of making decision.

The regression equation of leadership component with character of leader and the style of making decision clearly depict the model are good fit with R more than 0.3. The style of making decision is weak in explaining the relationship with R value 0.483.

The relationship between character of leader, the style of making decision and the implementation of TQM with R value 0.686 and 0.483 in this

arrangement and Leadership as a whole has an influence on TQM with R value 0.658.(Table 6).

So, we can say that there is a positive relationship between the leader and the implementation of the principles of TQM.

**Hypothesis 2: The implementation of TQM is positively influenced by the leadership.**

The sub hypothesis are:

**Hypothesis 2a:** The implementation of TQM is positively influenced by the character of the leader.

**Table 6 Correlation matrix**

	The character of the leader	The style of making decision	Leadership	TQM
The character of the leader				
The style of making decision	0.345			
Leadership	0.546	0.526		
The principles of TQM	0.686	0.483	0.658	

Note: All correlation values are significant at the 0.05 level (two-tailed)

**Hypothesis 2b:** The implementation of TQM is positively influenced by the style of making decision.

TQM was regressed again two variables of leadership namely (the character of the leader and the style of making decision

The equation for TQM was expressed in the following equation:

$$Y_s = \beta_0 + B_1X_1 + B_2X_2, \text{ Where,}$$

$$Y_s = \text{TQM}$$

$$\beta_0 = \text{constant (coefficient of intercept)}$$

$$X_1 = \text{the character of the leader}$$

$$X_2 = \text{the style of making decision}$$

$B_1$  and  $B_2$  = regression coefficient of two variables

The relationship between the dependent and independent variables derived by this model can thus be expressed as:

$$Y_s = 1.005 + 0.455 X_1 + 0.242 X_2$$

Table (7) showed the results of the regression analysis and the impact of the leadership to increase the level of applying the principles of TQM. To predict the goodness-of fit of the regression model, the multiple correlation coefficient (R)

, coefficient of determination ( $R^2$ ), and F ratio were examined. First, the R of independent variables (two factors,  $X_1$  and  $X_2$ ) on the dependent variable (TQM, or  $Y_s$ ) is 0.658, which showed that the business performance had positive and high overall association with the two attributes, suggesting that more than 60% of the variation of TQM was explained by the tow attributes. Last, the F ratio, which explained whether the results of the regression model could have occurred by chance, had a value of 44,210

( $p = 0.000$ ) and was considered significant. The regression model achieved a satisfactory level of goodness-of-fit in predicting the variance of the apply of TQM in relation to the two attributes, as measured by the below – mentioned R, and F ratio. In other words, at least one of the two attributes was important in contributing to apply the principles of TQM. In the regression analysis, the beta coefficients could be used to explain the relative importance of the two attributes (independent variables) in contributing to the variance in the implementation of TQM (dependent variable). As far as the relative importance of the two leadership attributes is concerned, the character of leader, ( $B_1=0.445$ ,  $p=0.000$ ) carried the heaviest weight for applying TQM, followed by the style of making decision, ( $B_2=0.242$ ,  $p=0.000$ ).

The results showed that a one-unit increase in the character of the leader would lead to a 0,445 unit increase in the implementation of TQM and one-unit increase in the style of making decision would lead to a 0.242 unit increase in the implementation of TQM.

In conclusion, the results of multiple regression analysis agree hypothesis 2, that there is the effect of the leadership to the overall TQM. So, there is a relationship and an impact of leadership on the implementation of the principles of TQM.

In other words, the table also shows the results of the statistical analysis that mentions there is an influence of the leadership dimensions on TQM in the enterprise, with F calculated equal 44.210 at the level of significance ( $\alpha \leq 0.05$ ) that means the reject of the null hypothesis and accept the alternative hypothesis.

**Table 7: Regression results p> 0.05 Source:SPSS**

Sig	t	B <sub>1</sub>		<sup>2</sup> R	R	SIG	F
0,000	8,188	2,403	Constant	0,471	0,686	0,000	51,697
0,000	7,190	0,455	Caracter of the leader				
Sig	t	B <sub>2</sub>		<sup>2</sup> R	R	SIG	F
0,000	15,14	3,536	Constant	0,233	0,483	0,000	17,628
0,000	4,199	0,242	Style of making desicion				
Sig	t	B		<sup>2</sup> R	R	SIG	F
0,000	9,349	2,638	Constant	0,433	0,658	0,000	44,210
0,000	6,649	0,431	Leadership				

### 5. Discussion:

The present study found that each of the two components of leadership to be associated with increased to apply the principles of TQM. The character of the leader exhibited positive and high relationship with the implementation of the TQM more than the style of making decision, this means that the respondents show that the character of the leader especially the behavioral and skills character of the leader are more important for them than the style of making decision. Also this research found that the style of making decision had an important impact to apply the principles of TQM, whenever it depend on the team work, it will facilitate the implementation of the principles of TQM.

### 6. Conclusion:

This study shows that this company as whole has interested to apply the principles of TQM using a good leader which have a high skills and behavioral character.

The model proposed in the field research tries to link the role of leader to other common TQM practices such as employee empowerment and communication in order to achieve a sustainable and continuous quality

The Algerian companies must take into consideration the important to the concept of TQM to have an increased loyalty of customers

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