

# **Impact of Risk Management on Total Quality** Management for Business Efficiency in Kingdom of Saudi Arabia

Fathimunisa Begam Afsar Hanfy<sup>1</sup>, Divya Rana<sup>2, \*</sup> <sup>1</sup>College of Administration and Finance, Department of Accounting, Saudi Electronic University, Riyadh, Kingdom of Saudi Arabia

<sup>2,\*</sup>College of Administration and Finance, Department of Business Administration, Saudi Electronic University, Riyadh, Kingdom of Saudi Arabia

Date of Submission: 15-12-2020	Revised: 20-12-2020	Date of Acceptance: 30-12-2020

**ABSTRACT:** The need of analyzing the impact of risk management in the business on TQM is considered on a priority so, that the business can be managed, developed and organize all the activities, without any involvement of risks in the business sector. The main aim of the study was to examine the performance of the business. Also, to check whether RM and TOM have effect on the satisfaction of employees and efficient operation in the work of the business.400 respondentswere taken in researchfrom Kingdom of Saudi Arabia. Data based on questionnaire were taken in the study and Likert's Scaleused on the data collected from both primary along with secondary data sources.Also, the regression results describing those three predictor variables were found in elucidation of employees' satisfaction and these three were leadership predictors and managerial practices, organizational structure and communication practices and performance of employees. From the results, it was concluded that under this research the principles of RM & TQM were showing an effect on the satisfaction of employees and efficient operation in the work of the business

Keywords: Implementation of TQM & RM, Business performance, Competitive advantage, Employee's satisfaction.

# I. INTRODUCTION

The attention of the researchers is enhancing the main idea of the organizational culture is relation to the theories of the organization and the persons who are practicing in this organizational culture so that the working efficiency of the organizations can be improved. The performance of the firm is generally predicted by the organizational culture (Chung, 2014), (Sinha and Dhall, 2018), (Pettigrew, 1979). The culture positions are clearly captured (Barney, 1991) by the Resource-based views as a general or basic

predecessor for the outcomes of the particular performances that is only available when some of the basic conditions are fulfilled. (Oluwatoyin and Oluseun, 2014), (Powell, 1995) these authors provide conclusions that the adoption of the TQM (Total Quality Management) will definitely lead to a better performance than the other companies. The association of organizational performance along with the TOM provides a positive combination for the betterment of the organization that is mentioned under the studies of these authors (Bolatan, 2016). The research can state that if TOM is performed under the culture of organization, then TQM will work as a process and will give an outcome in the best performance of the business.

Generally, the time period of the business market is of great competition universally, and the main idea of TQM is become the most important method for the sectors of manufacturing industries and also for the service industries (Vehachart, 2010). The services that are offered by the companies through following the methodology of TQM, this concept must leave an efficient work in the internal environment of the business and effective to the outside environment of the business (Naghshbandi, 2012). The main question arises that TQM is playing an appropriate role in the manufacturing and service industry or not; but the TOM is known as the by which each and every problem can be found and solved on time (Todorut, 2012). The value of the TQM not only measures the performance of the company, but it also examines the quality performance and check that there is a continuous improvement in the quality in the business by a procedure in which a comparison is made in between the organizational and cultural changes (Talib and Rahman, 2010). The TQM is basically connecting or involving the customers in each and every stage of the business procedure and considered as the key factor for both is



manufacturing as well as service industries that are usually customer oriented (Militaru, 2013).

In the field of business, there are limited literatures on the practices of RM and TQM on the performance of business. Therefore, this issue helps to encourage the researcher to investigate further and examine the business performance universally on the impact of principles of risk management and the total quality management.

#### **1.2 Research hypothesis**

Main hypothesis (H01): There is no statistically significant impact( $\alpha \le 0.05$ ) of RM and TQM principles on Business performance.

Sub-hypotheses: H01.1: There is no statistically significant impact ( $\alpha \le 0.05$ ) of RM & TQM principles on operation efficiency.

H01.2: There is no statistically significant impact( $\alpha \le 0.05$ ) of RM & TQM principles on employees' satisfaction.

#### 1.1 Guidance of the proposed study:

- 1. Implementing Risk management (RM) and total quality management (TQM) on business performance.
- 2. The impact of RM & TQM implementation on operation efficiency.
- 3. The impact of RM &TQM implementation on employee satisfaction.
- 4. The impact of RM on TQM implementation for business performance.

#### 1.3 Methodology:

#### 1.3.1 Phases of the study

The research paper is defined under phases for better understanding the work. These phases define the foresightedness for the business performance under risk management on Total quality management.

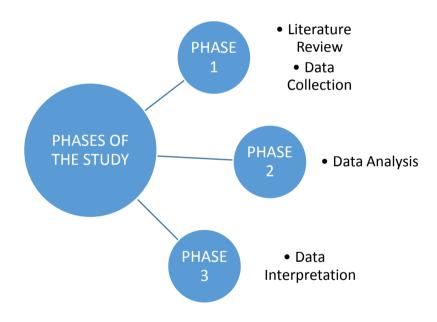


FIGURE 1: Phases of the study.

Phase 1: The phase is involving the literature section and describing the two very significant factors that were used in the paper i.e., RM and TQM. In this phase the data has been collected in a questionnaire form.

Phase 2: In this phase, the data was analyzed with the help of Cronbach's Alpha, ANOVA under analytical statistical methods that is multiple regressions.

Phase3: The final and the third phase display the interpretation of the data of 400 respondents by

which the main hypothesis (H01) and the Subhypotheses, H01.1 and H01.2 were proved for analyzing the performance of the business.

#### 1.3.2 Universe and field of study

The study was conducted in the kingdom of Saudi Arabia. The age factor considered for the fulfillment of the questionnaire was selected from above 25 years of age. The main reason behind the selection of the age factor was that the response that was collected from the respondents must be



collected in a significant form. The data by the 400 respondents were given in relation with the Gender, Age, Experience, Qualification, and Position along with the names of the cities from where the data has been collected.

VARIABLE         FREQUEN CY         PERCENTA GE           Gender	TABLE1: Biographical profile of the respondents.					
Gender         Jac         Jac           Male         273         68.25%           Female         127         31.75%           Age	VARIABLE	FREQUEN	PERCENTA			
Male $273$ $68.25\%$ Female $127$ $31.75\%$ Age $30-40$ $118$ $29.5\%$ $41-50$ $147$ $36.75\%$ $51$ and above $135$ $33.75\%$ <b>Experience</b> $2$ Less than 10 $127$ $31.75\%$ $11-20$ $117$ $29.25\%$ More than 20 $156$ $39\%$ <b>Qualification</b> $28.25\%$ Bachelor $142$ $35.55\%$ Master degree $145$ $36.25\%$ Position $27.5\%$ Head of department $131$ $32.75\%$ Head of division $159$ $39.75\%$ City $27.5\%$ Riyadh $45$ $15.25\%$ Jeddah $57$ $19.32\%$ Al khobar $42$ $14.24\%$ Abha $46$ $15.59\%$ Jazan $37$ $12.54\%$ Damman $52$ $17.63\%$ Dharan $34$ $11.53\%$		CY	GE			
Female127 $31.75\%$ Age	Gender					
Age11829.5% $30-40$ 11829.5% $41-50$ 147 $36.75\%$ $51$ and above135 $33.75\%$ <b>Experience</b> $127$ $31.75\%$ $11-20$ 11729.25%More than 2015639% <b>Qualification</b> $113$ $28.25\%$ Bachelor142 $35.55\%$ Master degree145 $36.25\%$ <b>Position</b> $110$ $27.5\%$ Head of department131 $32.75\%$ Head of division159 $39.75\%$ City $159$ $39.75\%$ Riyadh45 $15.25\%$ Jeddah $57$ 19.32%Al khobar42 $14.24\%$ Abha46 $15.59\%$ Jazan $37$ $12.54\%$ Dammam $52$ $17.63\%$ Dharan $34$ $11.53\%$	Male	273	68.25%			
30-40       118       29.5%         41-50       147       36.75%         51 and above       135       33.75%         Experience	Female	127	31.75%			
41-50       147       36.75%         51 and above       135       33.75%         Experience	Age					
51 and above       135       33.75%         Experience	30-40	118	29.5%			
Experience12731.75%Less than 1012731.75%11-2011729.25%More than 2015639%Qualification11328.25%Bachelor14235.55%Master degree14536.25%Position11027.5%Head of department13132.75%Head of division15939.75%City11Riyadh4515.25%Jeddah5719.32%Al khobar4214.24%Abha4615.59%Jazan3712.54%Dammam5217.63%Taif3913.22%	41-50	147	36.75%			
Less than 10       127       31.75%         11-20       117       29.25%         More than 20       156       39%         Qualification	51 and above	135	33.75%			
Less than 10       127       31.75%         11-20       117       29.25%         More than 20       156       39%         Qualification	Experience					
More than 20         156         39%           Qualification         113         28.25%           Diploma         113         28.25%           Bachelor         142         35.55%           Master degree         145         36.25%           Position             Executive manager         110         27.5%           Head of department         131         32.75%           Head of division         159         39.75%           City             Riyadh         45         15.25%           Jeddah         57         19.32%           Al khobar         42         14.24%           Abha         46         15.59%           Jazan         37         12.54%           Dammam         52         17.63%           Dharan         34         11.53%		127	31.75%			
Qualification11328.25%Diploma114235.55%Bachelor14235.55%Master degree14536.25%PositionExecutive manager11027.5%Head of department13132.75%Head of division15939.75%CityRiyadh4515.25%Jeddah5719.32%Al khobar4214.24%Abha4615.59%Jazan3712.54%Dammam5217.63%Taif3913.22%	11-20	117	29.25%			
Diploma         113         28.25%           Bachelor         142         35.55%           Master degree         145         36.25%           Position         Image: Constraint of the system of the syst	More than 20	156	39%			
Bachelor       142       35.55%         Master degree       145       36.25%         Position	Qualification					
Master degree       145       36.25%         Position	Diploma	113	28.25%			
Position         Image           Executive manager         110         27.5%           Head of department         131         32.75%           Head of division         159         39.75%           City             Riyadh         45         15.25%           Jeddah         57         19.32%           Al khobar         42         14.24%           Abha         46         15.59%           Jazan         37         12.54%           Dammam         52         17.63%           Taif         39         13.22%	Bachelor	142	35.55%			
Position         Image           Executive manager         110         27.5%           Head of department         131         32.75%           Head of division         159         39.75%           City             Riyadh         45         15.25%           Jeddah         57         19.32%           Al khobar         42         14.24%           Abha         46         15.59%           Jazan         37         12.54%           Dammam         52         17.63%           Taif         39         13.22%	Master degree	145	36.25%			
Head of department       131       32.75%         Head of division       159       39.75%         City						
Head of division15939.75%City15.25%Riyadh4515.25%Jeddah5719.32%Al khobar4214.24%Abha4615.59%Jazan3712.54%Dammam5217.63%Dharan3411.53%Taif3913.22%	Executive manager	110	27.5%			
Head of division15939.75%City15.25%Riyadh4515.25%Jeddah5719.32%Al khobar4214.24%Abha4615.59%Jazan3712.54%Dammam5217.63%Dharan3411.53%Taif3913.22%	Head of department	131	32.75%			
Riyadh4515.25%Jeddah5719.32%Al khobar4214.24%Abha4615.59%Jazan3712.54%Dammam5217.63%Dharan3411.53%Taif3913.22%		159	39.75%			
Jeddah5719.32%Al khobar4214.24%Abha4615.59%Jazan3712.54%Dammam5217.63%Dharan3411.53%Taif3913.22%	City					
Al khobar4214.24%Abha4615.59%Jazan3712.54%Dammam5217.63%Dharan3411.53%Taif3913.22%	Riyadh	45	15.25%			
Abha4615.59%Jazan3712.54%Dammam5217.63%Dharan3411.53%Taif3913.22%	Jeddah	57	19.32%			
Jazan     37     12.54%       Dammam     52     17.63%       Dharan     34     11.53%       Taif     39     13.22%	Al khobar	42	14.24%			
Dammam5217.63%Dharan3411.53%Taif3913.22%	Abha	46	15.59%			
Dharan         34         11.53%           Taif         39         13.22%	Jazan	37	12.54%			
Taif 39 13.22%	Dammam	52	17.63%			
	Dharan	34	11.53%			
Yanbu 48 16.27%	Taif	39	13.22%			
	Yanbu	48	16.27%			

# TABLE1: Biographical profile of the respondents.

#### 1.3.3 Questionnaire

The questionnaire was designed after studying various literature reviews on the implementation of risk management on the total quality management. The questionnaire were prepared with 20 questions out of which 4 questions were related with the demographic questionnaires and the other 16 questions were asked on Impact of RM & TQM principles on business performance that are based on a five-point Likert scale to measure the variables in terms of the agreement on the respondents i.e., Strongly Disagree, Disagree, Neutral, Agree and Strongly Agree.

# 1.3.4 Cronbach's Alpha

The meaning of cronbach's alpha states a statistic which is one of the most significant and

extensive for the research that is including the utilization and construction of the test and the method can be utilized to measurements of multiple items that are considered in the route of research. The word alpha describes the common report that is related with the growth or development of the scales that are known for the measurement of the attitudes and the other constructs which are affecting the particular result. Although, the Cronbach's alpha is considered as an indicator of quality instrument (Taber, 2018).

The present study in involving the Cronbach's coefficient  $\alpha$  that is utilized in the calculation of Coefficients of RM and TQM that were involved in the questionnaire. The conclusion can be found from the regression analysis that RM and TQM principles are showing an effect on



operation efficiency and satisfaction of the employees in the performance of the organization.

# **II. LITERATURE REVIEW:**

The main areas that utilized in this paper are firstly discussed to understand the main object of the investigation that was showing the impact on the RM and TQM (risk management and total quality management) on the business performances.

# Risk Management (RM)

A risk management system is the way through which an organization manages players, roles, relations and processes of its business in order to achieve its values and objectives. Public risk management focuses also on the public domain (read society and the natural environment). Unique is the establishment and connection of an open approach of internal or external uncertainty, a value and performance driven attitude and the will to mitigate risks i.e., deviations from target (Aven, 2016).

#### Total Quality Management (TQM)

According to (Mohrman, 1995) Total quality management (TQM) is described as an approach or method by which the organization is managed along with the continuous improvement in the quality and the satisfaction of the customers (Mohammed, 2013). The application of perfect tools and methods are involved in the management of organization and also includes the structured that are established in the organization; (Duran, 2014) and they are focus is maintained by the improved teamsalong with the procedure that is followed for the improvement of the organization (Liao, Chang and Wu, 2010).

(Lau and Tang, 2009), According to this author, the ideology of TQM is described as philosophy of management and the practices of the company that are basically focusing on the handling the material and human resources of the organization so that these can be achieved effectively and efficiently the goals and objectives of the organization (Kahreh,2014). The activities involving continuous improvement along with the employees' involvement, (Ahmad, 2014) and also consider the satisfaction and needs of the customer in mind for both internal and external environment of business is described in TQM(Srima, 2015). The abbreviated letters of TQM are individually that is mentioned below:

• The T-component of TQM: The T component of the TQM is stating a total commitment to

the quality supplier to the customer that is responsible for the improvement in the quality and efforts made for the up gradation oforganizational work.

- The O-component of TOM: The explanation of O component of TOM states that the quality management must be achieved for the customers' expectations and it should also over chief executive the needs of the customers. Both internal and the external customers are important for the organization under the method of TQM. All the procedure must be followed under continuous improvement and programme of effective training must be performed to teach and enhance the skills and knowledge of the employees in the organization so that the quality management can be achieved.
- The M-component of TQM: The M component of the TQM defines the procedure of management that is performed by the top management. Here, the top management is fully responsible for the preparation of the strategic plans for the business along with the achievement of those plans with the involvement of the employees of lower level and the conclusion comes out that the organizational culture should be re shaped for the management of the organization.

# MAJOR PRINCIPLES OF TQM

Some principles must be enhanced in the culture of the organization, before the organization achieves all the benefits after the application of TQM(Suwandej, 2015). The important principles of TQM must be kept in mind while running in the organization and they are mentioned below with detailed explanations:

# TOP MANAGEMENT COMMITMENT AND LEADERSHIP

The involvement or commitment along with open communication in the organization with the employees and cooperation within the organization by the management or the managers in the strategies of organization leads to a continuous improvement in the organization and these changes are occurred because of the use of TQM (Larina, 2015). The application of TQM leads to increase in the performance of the organization through controlling other dimensions of TQM (Kaynak, 2003). The leadership is generally performed by a supervisor or the manager who is working under the top management level and deciding the objectives and goals for the company and also created strategies or plans for the achievement of



these goals (Alimohammadlou, 2016). The quality troths and the enhancement in the efforts are generally related with the management of time in the company and investment in the cost production (Abbas, 2019). (Nasir and Morgan, 2004), the authors have found about the leadership that the leadership is a very precarious point in the field of the organization that is effecting at the time of change in the business and the areas that are involved for creating a positive relationship with the suppliers along with other are included in the procedure of the value of delivery. The performance of the leadership as the strategy or procedure of TOM, (Bari, 2016) the daily working by the employees will be going to be positively motivated so that the quality services can be delivered which will enhance the expectations of

the customers and that will increase the goodwill of the company also. (Andrle, 1994), the examination of this author noticed that the application of TQM in the company will lead to a long period of commitment about the leadership. The asset of the organization according to this author is a long time period of relationship along with the satisfaction of the customers, according to which the management should follow and commit to this (Erdil, 2019). The management importance that is known as the "customer focused support system" that involves rewards, (Panuwatwanich, 2017) measurements and the recognitions that will satisfy the needs of the customer and the main aim behind this is that a positive and healthy relationship can be created with the customers (Stefancova, 2017).

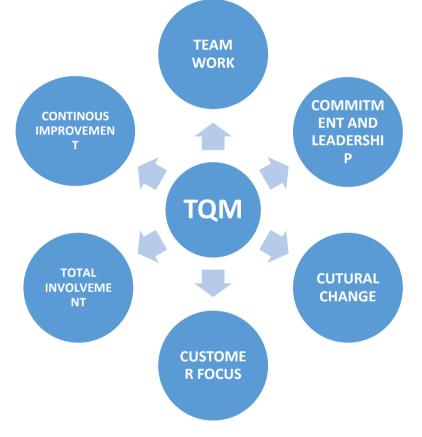


FIGURE 2: Principles of TQM.

# CULTURAL CHANGE

The procedure of managing the entire business in the both internal and external environment so that the complete satisfaction of the customers is achieved is intended under TQM (Topalovic, 2015). According to (Lorente, Dewhurst and Dale, 1999) cultural change refers to an approach in which a cooperate culture is changed into customer centric. The changes in the culture of the organization are depending on the working life of the organization (Singh, 2018). According to (Dale and Lascelles, 1997) the culture change in the organization is very important so that the traditional Approaches can be converted with the new approaches and the techniques for the procedure of production can be improved, (Sahoo,



2018) and the working process can also be improved and easily compete with the market competition (Eniola, 2019). According to (Dale and Lascelles, 1997) the procedure of change because most of the organizations are finding it very difficult to change the in traditional approaches in the organization. The changes in the nature of the employees also takes place and their attitude and ability of work is also changed (Sadikoglu and Olcay, 2013).

#### **CUSTOMER FOCUS**

The ideology of TQM is purely focusing on the need of the customer so that the customer can be satisfied from the services that are provided by the organization. Therefore, mostly all the organization are trying to satisfy the customer's need in the performance of daily activities in the organization also involve in the long-term plans of the production (Andrle, 1994). TQM is focusing in the organization on the strategies of the production so that an operational procedure can be followed and at the similar time period, the resources must be utilized so that the expectations of the asset can focused for the betterment be of the organization.(Forza and Filippini, 1998) this author describe that a close link must be created with the customers so that the need and requirements of the customers can easily be understand and also check that the production of the company is are prepared with the series of a supplier to the customers and the fact that is found on the customers' states that the customers need the supply of quality products only. According to this author, the quality chain supply of the company is created by the customers and this is determining that the customer and the supplier are inter connected with the due course of production. The demands and the market trends of the customers are signified by the Customer focus by the organizational efforts. The customer focus is also focusing on the maintenance and development of the better relations with the customers by safeguarding or guaranteeing the satisfactions of the customers (Abbas, 2019). The needs and the expectations are involved in each and every procedure of the production structure that should be achieved by the other persons in a whole production system (Mahmoud, 2019). The achievement of these needs leads to the achievement in the production of the quality product goods and services.

#### TOTAL INVOLVEMENT

The involvement of employee is considered as the feeling among the members of organization as the psychological ownership in which the employee is positively motivated that he is considered as an important person of the organization (Velasco, 2014). The ideology of TOM says that the involvement of the employee in the traditional time is considered as narrow minded: that can be intended as job centered process. The involvement of TQM in the organization includes the interest, contribution and the participation of the employees in the procedure of quality management (Lorente, Dewhurst and Dale, 1999). The job of the employees is affected because the employee is feeling free to take the decisions in the matters of the organization. Hence, the employees are motivated to execute some of the functions namely, processing the information to the departments, resolving the complicated problems and taking some of the important decisions in the management (Dimitriades, 2000). An author noticed that the essential motivation is connected to the heart of the TQM, where the decision making is involved and authorized for obtaining persistent results. The internal and the external satisfaction of the employees are boosted because of the whole involvement of the employee by creating an environment of flexible nature that will lead to innovation in future production (Sutanto, 2018).

#### CONTINUOUS IMPROVEMENT

The meaning of the continuous improvement states that an assurance of continuous investigation of the administrative as well as the technical procedures so that proper and better methods can be found. A continuous improvement can be considered as the unrelenting recreation for the improvement to the delivery of valuable goods to the customers (Ibrahim, 2013). The TQM is including a procedure of production of the design as a structure or system of the continuous improvement in the organization. A regular cycle of planning, execution along with evaluation is involved under continuous improvement (Muffatto and Panizzolo, 1995). The continuous improvement will show the generation of strenuous team and the membership of that team are explained by the work performed by them in a detailed process of knowledge, and the actions of the abilities are also enhanced. The process of production is fully related with the continuous improvement in the methodology of TQM that is working from the level of planning along with the decision making towards execution of the work in the organization (Iqbal, 2018). The important ideology behind the continuous improvement of organization states that the defects can be prevented easily and the mistakes can be voided too. Improvement of products along with the stable refinement and the



system performance of the organization will increase the customer's value (Shafiq, 2017). The procedure of continuous improvement determines that the focus to examine and eradicate the causes of mistake so that the Reoccurrence of the mistake can be prevented. (Fuentes, Sáez and Montes, 2004) This author determined about the operation of the organization in a vigorous environment for the operation, a view is given about this environment that there are fastest changes in the competition in the external environment and then a conclusion is made that customers need, along with competitors' activities along with the innovation of services/product (Sabet, 2014).

#### TRAINING

The Ideology of TQM is managed with the training by which an employee is prepared for the procedure in the production under the job. With the help of training, an individual is prepared with all kinds of the required skills and the techniques that are used in the job in the improvement of quality of the employee (Stephen, 2015). The training helps the employee to identify the improved opportunities inside them and they can also build these new skills and further can help the management to achieve the goal effectively and efficiently in the procedure of production. The training and the development programme are a lifelong procedure according to the author (Powell, 1995).

# **TEAM WORK**

In the procedure of production, the integrated activities are included for the effective production of goods and services and all of this is only possible because of a well-structured team by a leader. (Lorente, Dewhurst and Dale, 1999) this author found that the team work is intended as key feature for the organization to enhance the

# **III. RESULTS AND FINDINGS**

# Hypothesis Testing

Result outcomes in reference to Hypothesis (H01)

production of the company. And according to him, the well-structured team work will help to achieve the organizational goals on time (Bernal, 2015). The quality management can only be achieved if the team is made of right individuals and the working of group is performed coordinately and cooperatively (Jabnoun and Sedrani, 2005). With the help of team work, a positive interaction and bond is generated in between the employees and a loyal and healthy working environment is created in the organization and the goals are easily achieved. (Oluwatoyin and Oluseun, 2014) this author noted that the teamwork that is proposed by the employees of the organization is intending the creation of improvement in the quality of the employees. The attitude of the employees is changed because of the application of the team work. Some of the basic advantages of the team work are given below:

- The suggestions that are provided by the teams are generally opted and applied where the team is highly arduous and the suggestions from the individuals are representing just a specific opinion of the individual.
- A numerous variety of difficult problems can be handled which means the problems that are unable to solve by an individual or a particular department that can be handled more proficiently by combining the resources collectively.
- A problem is exposed while working in the teams to a great variety of acquaintance and the problems can be easily solved beyond the functional departments.
- The morale of the workers is boosted when working with a team work and the ownership is solving the problem along with the participating in the decision-making procedures.

#### Sub-hypotheses:

**H01.1:** There is no statistically significant impact ( $\alpha \le 0.05$ ) of RM & TQM principles on operation efficiency.

Model	R	R Square	Adjusted R Square	Std. Error of the
				Estimate
1	.467 <sup>a</sup>	.218	.208	.57215

Where, Predictors: (Constant), production costs, facilitating faster services and delivery of goods, operations of organization, and innovative ways of disposing waste and promote attractive product design, organization operational efficiency The F-statistic in the ANOVA table was about (22.02) and the level of the significance is about (0.000). In the result, the value of p is decrease to 0.05, and the overall conclusion states that the significance obtained from the statistical regression model can be easily predicted that the



outcome of the variable is good and that is fit for the data. Hence, there is a rejection in the null hypothesis and alternative hypothesis is considered or accepted, by which it can be proved that the RM &TQM principles are creating an effective on operation efficiency in the performance of the organization.

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	36.043	5	7.209	22.020	.000 <sup>b</sup>
	Residual	128.980	394	.327		
	Total	165.023	399			

TABLE 3: ANOVA of dependent variables of the TQM and RM principles

Where, b Predictors: (Constant), production costs, facilitating faster services and delivery of goods, operations of organization, and innovative ways of disposing waste and promote attractive product design, organization operational efficiency

There are two variable predictors found in the model of multiple regressions that can be significantly describing the performance of the organization. These two variables are the distribution of fast delivery of goods and services which is computed as ( $\beta$ 1=.101), and new ways of waste disposal along with the attractive product design is promoted which is computed as ( $\beta$ 1=.077). The meaning of R-squared which is about (0.218) states that the variation of about 21.8% was describe by the two variables in the operation efficiency.

Model		Unstandardiz Coefficients	zed	Standardized Coefficients	t	Sig.
		В	Std. Error	Beta		
1	(Constant)	2.403	.210		11.421	.000
	Operations of organisation	010	.023	019	429	.668
	Organisation operational efficiency	.038	.022	.077	1.725	.085
	Innovative ways of disposing waste and promote attractive product design	.056	.025	.101	2.265	.024
	Facilitating faster services and delivery of goods	.258	.026	.450	10.094	.000
	Production costs	.002	.022	.003	.075	.940

 TABLE 4: Coefficients of dependent variable (mean).

# Result outcomes in reference to Hypothesis H01.2

The results can be found from the table of the multiple linear regression that the first sub hypotheses (H1.1) is showing the with F value with about (78.238) and a significance in the statistics of about (0.000). Hence, there is a rejection in the null hypothesis and alternative hypothesis is considered or accepted, by which it can be proved that the RM & TQM principles are creating an effective on satisfaction of the employees in the performance of the organization.

TABLE5: Model Summary

TABLES. Would Summary								
Model         R         R Square         Adjusted R Square	Std. Error of the Estimate							

DOI: 10.35629/5252-02125770

| Impact Factor value 7.429 | ISO 9001: 2008 Certified Journal Page 64



# International Journal of Advances in Engineering and Management (IJAEM)

Volume 2, Issue 12, pp: 57-70www.ijaem.net

ISSN: 2395-5252

1	70.43	100	/92	45044
	.706 <sup>a</sup>	498		45844
1	./00	.170	. 172	.15011

Where, a Predictors: (Constant), performance of employees at all level, leadership and managerial practices, organizational structure and communication practices, quality of life of all employees, positive corporate culture at workplace

#### TABLE6: ANOVA of dependent variables of the TQM and RM principles

Model		Sum	of	df	Mean Square	F	Sig.
		Squares					
1	Regressio	82.216		5	16.443	78.238	.000 <sup>b</sup>
	n						
	Residual	82.807		394	.210		
	Total	165.023		399			

Where, b Predictors: (Constant), performance of employees at all level, leadership and managerial practices, organizational structure and communication practices, quality of life of all employees, positive corporate culture at workplace

Model		Unstandardized Coefficients B Std.		Standardi t zed Coefficie nts Beta		Sig.	
		D	Error	Deta			
1	(Constant)	1.996	.102		19.614	.000	
	Operations of organisation	061	.028	110	-2.167	.031	
	Organisation operational efficiency	.205	.041	.360	4.996	.000	
	Innovative ways of disposing waste and promote attractive product design	.083	.029	.145	2.893	.004	
	Facilitating faster services and delivery of goods	063	.044	110	-1.441	.150	
	Production costs	.303	.023	.578	13.264	.000	

TABLE7: Coefficients of dependent variable (mean).

There are three variable predictors found in the regression results that can be significantly describe the satisfaction of the employees. These three variables are managerial and leadership practices which is computed as ( $\beta$ 1=.36), structure of the organization and communicative practices that are computed as ( $\beta$ 1=.145), and performance of the employees in all the levels of the organization which is computed as ( $\beta$ 1=.578). The meaning of R-squared which is about (0.498) states that the variation of about 49.8% was describe by the three variables in the satisfaction of the employees.

#### **Research model**

The aim of this study was to examined the impact of the RM and TQM on the business performance on operation efficiency and employee's satisfaction. The diagram below shows that there is an impact of RM and TQM on the business performance because of the efficient operations taking place in the business as well as the performance of the employee's also matters in the performance of the enterprise.



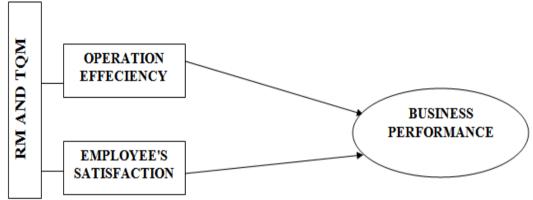


FIGURE3: Research Model

#### **IV. CONCLUSION**

The paperis investigating the impact of Risk Management on Total Quality Management for Business Efficiency. The study has utilized the methods in the interpretation of data with the help of hypothesis testing. Here, two sub hypotheses were created for analyzing the performance of the business. The results concluded that the null hypothesis is rejected and the alternative hypothesis is accepted in both the sub hypothesis. The outcomes depict that there was penetration of impact on the principles of RM & TQM with respect to the efficiency of the operation along with the satisfaction point among the employees. Also, the regression results also describing those three predictor variables were found in elucidation of employees' satisfaction and these three predictors leadership and managerial are practices. organizational structure and communication practices and performance of employees. The results bought from. The regression analysis states that the performance of the organization is involving some of the variable predictors. They are facilitating faster services and delivery of goods, and innovative ways of disposing waste and promote attractive product design. Therefore, it can be concluded that there is a major impact of the RM on TQM in the analysis of Business Performance.

# V. MANAGERIAL IMPLICATIONS ANDRECOMMENDATIONS

The conclusions bought from the research explains that there was an inter connected link in between the top level and lower level of the organization. And this plays a very vital role in the principles of Risk management and Total Quality Management. The HR of the company is considering the factors that are productivity by the business, satisfaction of the customers and the performance by the business. Managers are focusing on the work of the employees and also enhancing the communication level with the employees so that there must be a healthy and wealthy environment in the organization.

Future Recommendations can be provided for further researches that Training and development of the skills of the employees must be definitely done so that the efficiency of working of the employees will increase and this will help to enhance the performance of the organization. And the Quality management should be applied in the organization where two ideas is originated for the management, first says that the mangers must keep an eye on the employees and other says that the work performance of the business must be checked regularly or continuously.

# **VI. RESEARCH LIMITATIONS**

Several limitations are related with the study. The first limitation found that the study was only conducted in the kingdom of the Saudi Arabia only which was little bit difficult for studying under the research for this impact on the business performances. Secondly, the data was collected on the basis of cross-sectional survey for the current study, but for the appropriate information collection, some more information must be collected for this research. Moreover, the data was collected in a questionnaire technique, and hence, the information can be biased.

#### Suggestions for future research

The Findings found very valuable results for the future research. The effect of the performance by business can be easily studied by



the principles of RM and TQM and these also can be considered under various countries. The further study can be conducted on the basis of several factors. Further researches can be performed on the Total Quality Management only when the Risk Management was analyzed. Therefore, the risk management is also a very important factor that must be intended in any of the future researches so that there is no problem in the computation of the business performance.

# VII. ACKNOWLEDGEMENTS

The authors special thanks the Deanship of Scientific Research (DSR) at Saudi Electronic University, Riyadh in Kingdom of Saudi Arabia for the financial grant no.(7642-HS-2019-1-1-S) received in conducting this research.

# **REFERENCES:**

- [1]. Abbas, J. (2019). Impact of total quality management on corporate green performance through the mediating role of corporate social responsibility. Journal of Cleaner Production, 242, 118458. https://doi.org/10.1016/j.jclepro.2019.11845 8
- [2]. Ahmad, M. F., Zakuan, N., Jusoh, A., Yusof, S. M., & Takala, J. (2014). Moderating Effect of Asean Free Trade Agreement between Total Quality Management and Business Performance. Procedia - Social and Behavioral Sciences, 129, 244–249. https://doi.org/10.1016/j.sbspro.2014.03.673
- [3]. Alimohammadlou, M., & Eslamloo, F. (2016). Relationship between Total Quality Management, Knowledge Transfer and Knowledge Diffusion in the Academic Settings. Procedia - Social and Behavioral Sciences, 230(May), 104–111. https://doi.org/10.1016/j.sbspro.2016.09.013
- [4]. Aven, T. (2016). Risk assessment and risk management: Review of recent advances on their foundation. European Journal of Operational Research, 253(1), 1–13. https://doi.org/10.1016/j.ejor.2015.12.023
- [5]. Bari, M. W., Fanchen, M., & Baloch, M. A. (2016). TQM Soft Practices and Job Satisfaction; Mediating Role of Relational Psychological Contract. Procedia - Social and Behavioral Sciences, 235(October), 453–462.

https://doi.org/10.1016/j.sbspro.2016.11.056

- [6]. Barney, J. (1991). Firm Resource and sustained competitive advantage. Journal of Managment, 17, 99–120.
- [7]. Benavides-Velasco, C. A., Quintana-García,

C., & Marchante-Lara, M. (2014). Total quality management, corporate social responsibility and performance in the hotel industry. International Journal of Hospitality Management, 41, 77–87. https://doi.org/10.1016/j.ijhm.2014.05.003

- [8]. Boikanyo, D. H., & Heyns, M. M. (2019). The effect of work engagement on total quality management practices in a petrochemical organisation. South African Journal of Economic and Management Sciences,22(1),1– 13.https://doi.org/10.4102/sajems.v22i1.233 4
- [9]. Bolatan, G. I. S., Gozlu, S., Alpkan, L., & Zaim, S. (2016). The Impact of Technology Transfer Performance on Total Quality Management and Quality Performance. Procedia - Social and Behavioral Sciences, 235(October), 746–755. https://doi.org/10.1016/j.sbspro.2016.11.076
- [10]. Cartwright, R. (2010). Book Reviews: Book Reviews. Perspectives in Public Health, 130(5), 239–239. https://doi.org/10.1177/1757913910379198
- [11]. Cetindere, A., Duran, C., & Yetisen, M. S. (2015). The effects of total quality management on the business performance: An application in the province of Kütahya. Procedia Economics and Finance, 23(October 2014), 1376–1382. https://doi.org/10.1016/s2212-5671(15)00366-4
- [12]. Chung, K. H., Academy, T., & Apr, N. (2014). Theory Z: How American Business Can Meet the Japanese Challenge, by William Ouchi. Reading, Mass.: Addison-Wesley, 7(2), 317–319.
- [13]. Colakoglu, M., Tanbay, T., Durmayaz, A., & Sogut, O. S. (2016). Effect of heat leakage on the performance of a twin-spool turbofan engine. International Journal of Exergy, 19(2), 173–198. https://doi.org/10.1504/IJEX.2016.075604
- [14]. Dale, B. G., & Lascelles, D. M. (1997). Total quality management adoption: Revisiting the levels. TQM Magazine, 9(6), 418–428.

https://doi.org/10.1108/09544789710186957

[15]. Dimitriades, Z. S. (2000). Total involvement in quality management. Team Performance Management: An International Journal, 6, 117–122.

https://doi.org/10.1108/13527590010379530

[16]. Duran, C., Çetindere, A., & Şahan, Ö.(2014). An Analysis on the Relationship

| Impact Factor value 7.429 | ISO 9001: 2008 Certified Journal Page 67



Between Total Quality Management Practices and Knowledge Management: The Case of Eskişehir. Procedia - Social and Behavioral Sciences, 109, 65–77. https://doi.org/10.1016/j.sbspro.2013.12.422

- [17]. Eniola, A. A., Olorunleke, G. K., Akintimehin, O. O., Ojeka, J. D., & Oyetunji, B. (2019). The impact of organizational culture on total quality management in SMEs in Nigeria. Heliyon, 5(8), e02293. https://doi.org/10.1016/j.heliyon.2019.e0229 3
- [18]. Erdil, A., Erbıyık, H., Erdil, A., & Erbıyık, H. (2019). ScienceDirect ScienceDirect ScienceDirect The Importance of Benchmarking for the Management of the Firm : The Importance of Benchmarking for the Management of the Firm : Evaluating the Relation between Total Quality Management and Evaluating the Relation . Procedia Computer Science, 158, 705-714. https://doi.org/10.1016/j.procs.2019.09.106
- [19]. Forza, C., & Filippini, R. (1998). TQM impact on quality conformance and customer satisfaction: A causal model. International Journal of Production Economics, 55(1), 1–20. https://doi.org/10.1016/S0925-5273(98)00007-3
- [20]. García-Bernal, J., & García-Casarejos, N. (2014). Economic analysis of TQM adoption in the construction sector. Total Quality Management and Business Excellence, 25(3–4), 209–221. https://doi.org/10.1080/14783363.2012.7288 48
- [21]. Gómez-López, R., Serrano-Bedia, A. M., & López-Fernández, M. C. (2016). Motivations for implementing TQM through the EFQM model in Spain: an empirical investigation. Total Quality Management and Business Excellence, 27(11–12), 1224–1245. https://doi.org/10.1080/14783363.2015.1068 688
- [22]. Ibrahim, O. (2013). Total Quality management (TQM) and Continuous Improvement as Addressed by Researchers. International Journal of Scientific and Research Publications, 3(10), 2250–3153. Retrieved from www.ijsrp.org
- [23]. Iqbal, A., & Asrar-ul-Haq, M. (2018). Establishing relationship between TQM practices and employee performance: The mediating role of change readiness. International Journal of Production

Economics, 203(June), 62–68. https://doi.org/10.1016/j.ijpe.2018.05.034

- [24]. Jabnoun, N., & Sedrani, K. (2005). TQM, Culture, and Performance in UAE Manufacturing Firms. Quality Management Journal, 12(4), 8–20. https://doi.org/10.1080/10686967.2005.1191 9267
- [25]. Kahreh, Z. S., Shirmohammadi, A., & Kahreh, M. S. (2014). Explanatory Study Towards Analysis the Relationship between Total Quality Management and Knowledge Management. Procedia - Social and Behavioral Sciences, 109, 600–604. https://doi.org/10.1016/j.sbspro.2013.12.513
- [26]. Larina, L. N. (2015). Practical Application of Total Quality Management System to Education of International Students. Procedia - Social and Behavioral Sciences, 215(June), 9–13. https://doi.org/10.1016/j.sbspro.2015.11.566
- [27]. Lau, A. W. T., & Tang, S. L. (2009). A survey on the advancement of QA (quality assurance) to TQM (total quality management) for construction contractors in Hong Kong. International Journal of Quality & Reliability Management, 26(5), 410–425. https://doi.org/10.1108/02656710910956166
- [28]. Liao, S. H., Chang, W. J., & Wu, C. C. (2010). Exploring TQM-innovation relationship in continuing education: A system architecture and propositions. Total Quality Management and Business Excellence, 21(11), 1121–1139. https://doi.org/10.1080/14783363.2010.5293 30
- [29]. Mahmoud, A. B., Alatrash, M., Fuxman, L., Meero, A. A., & Yafi, E. (2019). Total Quality Management Boosters and Blockers in a Humanitarian Setting: An Exploratory Investigation. SAGE Open, 9(2). https://doi.org/10.1177/2158244019841919
- [30]. Mar Fuentes-Fuentes, M., Albacete-Sáez, C. A., & Lloréns-Montes, F. J. (2004). The impact of environmental characteristics on TQM principles and organizational performance. Omega, 32(6), 425–442. https://doi.org/10.1016/j.omega.2004.02.005
- [31]. Martínez Lorente, A. R., Dewhurst, F., & Dale, B. G. (1999). TQM and business innovation. European Journal of Innovation Management, 2(1), 12–19. https://doi.org/10.1108/14601069910248847
- [32]. Militaru, M., Ungureanu, G., & (Creţu), A. Ş. C. (2013). The Prospects of Implementing the Principles of Total Quality Management



(TQM) in Education. Procedia - Social and Behavioral Sciences, 93, 1138–1141. https://doi.org/10.1016/j.sbspro.2013.10.003

[33]. Mohammed, A. S. A., Tibek, S. R. H., & Endot, I. (2013). The Principles of Total Quality Management System in World Islamic Call Society. Procedia - Social and Behavioral Sciences, 102(Ifee 2012), 325– 334.

https://doi.org/10.1016/j.sbspro.2013.10.747

[34]. Mohrman, S. A., Tenkasi, R. V., Lawler, E. E., & Ledford, G. E. (1995). Total quality management: Practice and outcomes in the largest US firms. Employee Relations, 17(3), 26–41.

https://doi.org/10.1108/01425459510086866

- [35]. Muffatto, M., & Panizzolo, R. (1995). A process-based view for customer satisfaction. International Journal of Quality & Reliability Management, 12(9), 154–169. https://doi.org/10.1108/02656719510101259
- [36]. Naghshbandi, S., Yousefi, B., Zardoshtian, S., & Moharramzade, M. (2012). Assessment of Military Force Staff's Readiness for Total Quality Management (TQM) Approval in Tehran Province. Procedia - Social and Behavioral Sciences, 46, 5345–5349. https://doi.org/10.1016/j.sbspro.2012.06.436
- [37]. Nasir, M. A., & Morgan, J. (2004). Article information : International Journal of Logistics Management, 4(2).
- [38]. Ng, S. C. H., Rungtusanatham, J. M., Zhao, X., & Ivanova, A. (2015). TQM and environmental uncertainty levels: Profiles, fit, and firm performance. International Journal of Production Research, 53(14), 4266–4286. https://doi.org/10.1080/00207543.2014.9940 76
- [39]. Oluwatoyin, A., & Oluseun, A. (2014). Total Quality Management: A Test of the Effect of TQM on Performance and Stakeholder Satisfaction. Journal of Clinical Nursing, 5(1), 2007–2012.
- [40]. Panuwatwanich, K., & Nguyen, T. T. (2017). Influence of Total Quality Management on Performance of Vietnamese Construction Firms. Procedia Engineering, 182, 548–555. https://doi.org/10.1016/j.proeng.2017.03.151
- [41]. Pettigrew, A. M. (1979). On Studymg Organiza- tional Cultures. Administrative Science Quarterly, 24(December), 570–581.
- [42]. Porter, M. E. (1990). New global strategies for competitive advantage. Planning Review,

18(3),

4–14.

- https://doi.org/10.1108/eb054287 [43]. Powell, T. C. (1995). Total quality management as competitive advantage: A review and empirical study. Strategic Management Journal, 16(1), 15–37. https://doi.org/10.1002/smj.4250160105
- [44]. Reddy, M. (2014). Total Quality Management (TQM): A Catalyst for Service Delivery in the South African Police Service. Africa's Public Service Delivery and Performance Review, 2(4), 5. https://doi.org/10.4102/apsdpr.v2i4.65
- [45]. Ruiz, E., Sanchez De Pablo, J. D., Muñoz, R. M., & Peña, I. (2018). The influence of Total Quality Management on firms' intellectual capital. South African Journal of Business Management, 49(1), 1–9. https://doi.org/10.4102/sajbm.v49i1.396
- [46]. Sabet, E., Adams, E., & Yazdani, B. (2016). Quality management in heavy duty manufacturing industry: TQM vs. Six Sigma. Total Quality Management and Business Excellence, 27(1–2), 215–225. https://doi.org/10.1080/14783363.2014.9726 26
- [47]. Sadikoglu, E., & Olcay, H. (2014). The Effects of Total Quality Management Practices on Performance. Laboratory Management Information Systems: Current Requirements and Future Perspectives, 2014, 996–1027. https://doi.org/10.1155/2014/537605
- [48]. Sahoo, S., & Yadav, S. (2018). Total Quality Management in Indian Manufacturing SMEs. Procedia Manufacturing, 21, 541– 548.

https://doi.org/10.1016/j.promfg.2018.02.15

- [49]. Shafiq, M., Lasrado, F., & Hafeez, K. (2019). The effect of TQM on organisational performance: empirical evidence from the textile sector of a developing country using SEM. Total Quality Management and Business Excellence, 30(1–2), 31–52. https://doi.org/10.1080/14783363.2017.1283 211
- [50]. Singh, V., Kumar, A., & Singh, T. (2018). Impact of TQM on organisational performance: The case of Indian industry. manufacturing and service Operations Research Perspectives, 5(July), 199-217.

https://doi.org/10.1016/j.orp.2018.07.004

[51]. Sinha, N., & Dhall, N. (2018). Mediating effect of TQM on relationship between



organisational culture and performance: evidence from Indian SMEs. Total Quality Management & Business Excellence, 0(0), 1–25.

https://doi.org/10.1080/14783363.2018.1511 372

[52]. Srima, S., Wannapiroon, P., & Nilsook, P. (2015). Design of Total Quality Management Information System (TQMIS) for Model School on Best Practice. Procedia - Social and Behavioral Sciences, 174, 2160–2165.

https://doi.org/10.1016/j.sbspro.2015.02.016

[53]. Štefancová, V., Nedeliaková, E., & López-Escolano, C. (2017). Connection of Dynamic Quality Modeling and Total Service Management in Railway Transport Operation. Procedia Engineering, 192, 834– 839.

https://doi.org/10.1016/j.proeng.2017.06.144

- [54]. Stephen J. Andrle. (1994). Total Quality Management in Public Transportation. TCRP, (3), 39.
- [55]. Sutanto, A., W., & Bidayati, U. (2018). Total Quality Management Planning Model to Increase Higher Education Performance and Competitiveness. International Journal of Engineering & Technology, 7(3.25), 49. https://doi.org/10.14419/ijet.v7i3.25.17469
- [56]. Suwandej, N. (2015). Factors Influencing Total Quality Management. Procedia -Social and Behavioral Sciences, 197(February), 2215–2222. https://doi.org/10.1016/j.sbspro.2015.07.361

- [57]. Taber, K. S. (2018). The Use of Cronbach's Alpha When Developing and Reporting Research Instruments in Science Education. Research in Science Education, 48(6), 1273– 1296. https://doi.org/10.1007/s11165-016-9602-2
- [58]. Talha, M. (2004). Total quality management (TQM): An overview. The Bottom Line, 17(1), 15–19. https://doi.org/10.1108/08880450410519656
- [59]. Talib, F., & Rahman, Z. (2010). Studying the impact of total quality management in service industries. International Journal of Productivity and Quality Management, 6(2), 249–268. https://doi.org/10.1504/IJPQM.2010.034408
- [60]. Todorut, A. V. (2012). Sustainable Development of Organizations through Total
- Quality Management. Procedia Social and Behavioral Sciences, 62, 927–931. https://doi.org/10.1016/j.sbspro.2012.09.157
- [61]. Topalović, S. (2015). The Implementation of Total Quality Management in Order to Improve Production Performance and Enhancing the Level of Customer Satisfaction. Procedia Technology, 19, 1016–1022.

https://doi.org/10.1016/j.protcy.2015.02.145

[62]. Vehachart, R. (2010). The development of supervision for total quality management in basic education institutions in the three southern border provinces. Procedia - Social and Behavioral Sciences, 9, 954–957. https://doi.org/10.1016/j.sbspro.2010.12.266