

Customer Driven Project Management in the service sector in UAE:

Integrating quality in to project management processes

إدارة المشاريع المتعلقة بالمتعاملين في قطاع الخدمات في دولة الإمارات العربية المتحدة:

دمج الجودة في عمليات إدارة المشاريع

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Declaration

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1 Abstract

Many literatures investigate and study the project success and fail, most of them pointed out that most project fails because of not understanding the customers (end users) requirements and expectation, Moreover there are few research that looks at integrating the customer requirements throughout the project life cycle. This research focus on the relationship between quality management and quality tools and project management processes and performance, in addition to that it elaborate about how quality tools can be used to improve project management within UAE Organizations.

To research to the problem, a survey-based approach was used by collecting data from customers for seven Organizations from four different sectors. A total of 2000 completed questionnaire were analyzed. To test the developed hypotheses the data analysis focused on calculating the customer satisfaction score for each project management process group for organization that implements different quality tools, to see how quality tools could link and affect project management. Moreover, independent t-test was done on the survey variables and on the collected data, and the results shows that there is positive significant relationship between quality management and tools and project management processes and performance. These findings are a new contribution to the quality and project management literatures and it is very helpful to the practitioners to implement the suitable tool for their organization and to understand their customer needs and expectations.

This study concludes that implementing quality tools (TQM, QFD, EFQM, ISO 9000 and SURVQUAL) is very critical for Organizations to improve their projects performance and project processes. Moreover, quality management and tools have significant positive effect on customers satisfaction and on project performance. The overall satisfaction score for all sector and organization was 68%, which shows that organization, need to improve the way they delivered the service or the products. Nevertheless, further research is recommended to explore about the relation between quality and project management in different countries and different sectors, to benchmark the results with UAE's Organizations and to compare the customer's requirements in different cultures.

المخلص

العديد من الباحثين حققوا ودرسوا نجاح وفشل المشروع، حيث أشار معظمهم إلى أن فشل معظم المشاريع بسبب عدم فهم العملاء (المستخدمين النهائيين) المتطلبات والتوقعات، وعلاوة على ذلك هناك عدد قليل من البحوث التي تنظر في دمج متطلبات العملاء خلال دورة حياة المشروع. هذا البحث يركز على العلاقة بين إدارة الجودة وأدوات الجودة وعمليات إدارة المشاريع والأداء، بالإضافة إلى أن هذا البحث يتوسع بالشرح عن كيفية استخدام أدوات الجودة لتحسين إدارة المشروع ضمن المنظمات في دولة الإمارات العربية المتحدة.

للبحث عن المشكلة، تم استخدام النهج القائم على المسح من خلال جمع البيانات من العملاء لسبع منظمات من أربعة قطاعات مختلفة. وقد تم تحليل 2000 استبيان. لاختبار الفرضيات المطورة ركزت عملية تحليل البيانات على احتساب درجة رضا العملاء عن كل مجموعة عملية إدارة المشروع للمنظمات التي تطبق أدوات نوعية مختلفة، لنرى الرابط لأدوات الجودة مع إدارة المشاريع، إضافة إلى ذلك تم عمل اختبار "independed t-test" على متغيرات الاستبيان وعلى البيانات التي تم جمعها، حيث تظهر النتائج أن هناك علاقة ذات دلالة إحصائية إيجابية بين إدارة الجودة وأدوات وعمليات إدارة المشاريع والأداء. هذه النتائج هي مساهمة جديدة لأبحاث الجودة وإدارة المشاريع وأنه من المفيد جدا للممارسين لتطبيق الأداة المناسبة لمنظمتهم وفهم احتياجات وتوقعات العملاء.

نستنتج من هذه الدراسة أن تنفيذ أدوات الجودة (TQM, QFD, EFQM, ISO 9000 and SURVQUAL) مهمة جدا للمنظمات لتحسين أداء مشاريعهم وعمليات المشروع. وعلاوة على ذلك، وإدارة أدوات الجودة يكون لها تأثير إيجابي كبير على رضا العملاء وعلى أداء المشروع. كانت النتيجة الرضا العام عن كل قطاع وتنظيم 68٪، مما يدل على أن منظمة، بحاجة إلى تحسين الطريقة التي تسلم الخدمة أو المنتجات. ومع ذلك، فمن المستحسن إجراء مزيد من البحوث لاستكشاف العلاقة بين الجودة وإدارة المشاريع في مختلف البلدان ومختلف القطاعات، لقياس النتائج مع منظمات دولة الإمارات العربية المتحدة ومقارنة متطلبات العملاء في مختلف الثقافات.

Keywords: Project Management Performance, Project Management Process Groups, Quality Management, Quality tools, Customer Satisfaction, Customer Driven Project Management, UAE organizations

Acknowledgment

In the name of Allah the most gracious, the most beneficent.

First of all, I thank my Allah, who gave me the opportunity and strength to complete every important task in my life.

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Finally, I would like to extend my profound thanks to my supervisor, Doctor Paul Gardiner, for his kind support, guidance and encouragement. His valuable advice was instrumental for the successful completion of this dissertation.

Abbreviations

European Foundation of Quality Management (**EFQM**)

Performance Measurement Matrix (**PMM**)

Project Management (**PM**)

Project Management Body of Knowledge (**PMBok**)

Project Management Institute (**PMI**)

Total Quality Management (**TQM**)

Quality Function Deployment (**QFD**)

United Arab Emirates (**UAE**)

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2 Chapter 1: Introduction

2.1 Research overview

Many researchers tried to identify the key elements of project successes or project failure, and many of these studies highlighted that the main reason of failure is not understanding the stakeholders needs and expectation and not considering the environment of the customer or the end users of the product or the service (Lawrence and Ishii, 2004), (Pinto and Kharbanda, 1996) and (Barkley and Saylor, 2001), and according to Zwikael and Globerson (2006) that Most of the project managers list the reasons of project success and project failure. Despite this, the percentage of the failed projects is high, and one possible reason for this could be that the project managers don't look at very specific reasons of project succession and filing (Ahonen and Savolainen, 2010), (Cerpa and Verner, 2009), (Avots, 1969) and (Globerson and Zwikael, 2002).

Zwikael and Globerson (2006) did a research on 282 project manager and the results confirms that the common critical success factor is the customer satisfaction and insuring that the customer requirements are translated in the right way in the planning stage. And this affirm that "Quality is now universally accepted as a major concern for every organization" (Barad and Raz, 2000, p.1), moreover L. Munro-Faure and M. Munro-Faure, 1992 assert that the main objective of quality is to deliver a product or service as per the customer expectation and needs and to satisfy customers. Moreover many affirm that project performance are measured based on time, cost and quality (Barkley and Saylor, 2001), (Kerzner, 1992), and (Chang, 1998), in addition to that a surveys were done with project managers which explore that quality is one of the main measures to assess the project performance and this describes that the quality is a n important element in project management (Bryde and Robinson, 2007), but Some Organizations underestimate the how customers identify the service quality, customers do not evaluate the end product or the received service only, there satisfaction is also affected by service deliver or product delivery processes, and this justify the strong link between the quality and the project management processes (Orwig and Brennan, 2000)

Customer is the recipient of a service, product or project deliverables which are done by a vendor, supplier or any organization, customers are known as buyers, clients and shoppers (Forrest, 1987) and to satisfy customers Organizations should understand, define and manage the customer expectation to insure that their requirements are met, and insuring that the project phases and project management processes are working towards producing products or service as per the customer specifications (PMI, 2008). Customer driven project management is how quality should be integrated with project management processes, and how the customer requirements is transferred to product or service specification, and according to Jiang, Klein, and Chen (2006) that failed project cost the companies millions every year and that makes it difficult for companies to meet their targets and objectives, therefore this research aim to come up with recommendations and ways to help organization in satisfying their customers by integrating quality with their projects to insure that the end results or products meet the customer needs and expectations and meets the Organizations strategic objectives. According to Abdelgalil and Husasain (2007) that the service sector represent 71% of the business sector in UAE, but most of the research about quality management and it is relation with project management focuses on the manufacturing sectors and few of them focus on the service sector (Orwig and Brennan, 2000), therefore the focus of this study is the service sector.

2.2 Research Problem

As pointed out in the overview section that it is very critical for organization to understand their customer needs and expectations and to measure the project deliverables based on the customer satisfaction, but as highlighted in the previous section that many researchers confirmed that some project managers underestimate how customers identify the service quality or the product quality and that customers is affected by the service or the product delivery processes or the project execution processes, in addition to that there is a lack in liking quality in to project management processes and integrating the implemented quality tools into the project management practices and processes.

This paper will discuss two main issues: how Organizations and project managers could satisfy customers by fully understand their needs and expectation to product or service specification and how the quality tools could be integrated or help the project managers to execute the project management processes with high performance to achieve the organization goal.

2.3 Scope

The scope of this study is to understand and to come up with recommendation on integrating quality into project management processes with linking the quality and excellence tools to the project management processes.

The context of this study is the service sector Organizations in UAE.

2.4 Research Aim and Objectives

The aim of this paper is to study how project managers uses the needs and requirements of the customer as the focal point of the mission to achieving successful outcomes in the service sector and to help in improving the customer satisfaction and the project performance through integrating quality into project management processes and linking the quality tools with the project performance to achieve the highest level of customer satisfaction.

The objectives of the research are:

- i. To develop an understanding of the concept “Customer Driven Project Management”
- ii. To investigate in the integrating the quality into the project management processes
- iii. To study the role of the quality tools in customer driven project management and how that reflect into the customer satisfaction
- iv. To investigate the integration between quality management and quality tools with the projects in UAE service sector Organizations through a quantitative research
- v. To come up with recommendation for project managers and Organizations on how to deliver projects and having a satisfied customers through the project life cycle

2.5 Research Questions

- i. Does quality management or quality tools help in increasing the project performance and the customer satisfaction if it is integrated with project management processes?
- i. What is the best way to integrate quality tools into project management processes?
- ii. What are the main success factors for implementing quality tools for organization and the effect on the customer driven project management processes
- iii. What are the main requirements and expectations for the service sector customers in UAE?

2.6 Research Propositions and Hypotheses

From the literature review, there are two identified Hypotheses which will be tested in the data analysis of the conducted surveys.

Hypothesis 1 (H₁): There is positive impact for the quality tool (QFD, TQM, EFQM, ISO 9000 and SURVQUAL) on the project performance

Hypothesis 2 (H₂): Implementing quality tools (QFD, TQM, EFQM, ISO 9000 and SURVQUAL) in Organizations improves the project management processes

Hypothesis 3 (H₃): There is positive impact for the quality management on the project performance

Hypothesis 4 (H₄): There is statistically significant positive relationship between implementing of the quality tools (QFD, TQM, EFQM, ISO 9000 and SURVQUAL) and the customer satisfaction about the services and products in the service sector.

Hypothesis 5 (H₅): The implementation of the quality management improves the project management process

2.7 Structure of the dissertation

The dissertation consists of six chapters as listed below:

- **Chapter 1 – Introduction:** This chapter presents the research overview, research problem, scope, research aims and objectives, research questions and hypotheses, the significance, research strategy and design limitations of this research. Also, it briefly highlights details the structure of this dissertation.
- **Chapter 2 – Literature Review:** This chapter presents the literature review focusing on the integration of the quality and the quality tools into the project management processes.
- **Chapter 3 – Research Design and Methodology:** This chapter presents the research philosophy, approach, strategy and design, conceptual framework and methods used to

address the research questions and to test the research hypotheses. The ethical considerations of this study are also discussed in this chapter.

- **Chapter 4 –*Questionnaire Results*:** This chapter details the analysis, results, and findings of the questionnaire designed to assess and analyze the relationship between PM Performance and Project Success.
- **Chapter 5 - *Discussion*:** In this chapter the findings of the questionnaire are discussed, interpretation of results is presented including researcher's views as well as issues from the literature review. The limitation of the data collection and analysis are also discussed in this chapter.
- **Chapter 6 - *Conclusions and Recommendations*:** In this chapter the conclusions of the study are presented along with their implications and associated recommendations to academics and practitioners. Also the contributions of this study and recommendations for future research are presented.

3 Chapter 2: Literature Review

3.1 Definition of Customer Driven Project management

According to Barkley and Saylor (2001) that Customer driven project management is how the customer needs, expectations and requirements are used to deliver the project that involves building a win-win strategy with customers to ensure that both the project delivery team and the customers are satisfied and in the same page (Gracia, 2010). Moreover, Barkley and Saylor (2001) argue that project should be driven by customer requirements and translating these requirements to methodologies and specification, and that could done by integrating quality in to the project management processes.

As illustrated in Figure 2, PMI (2008) divided the project to 5 phases' which are initiating, planning, executing, controlling and then closing phase and each phase might consist of these five stages and quality is implemented through these phases. PMI (2008, p.189) identify the

project quality management as “the processes and activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken” Therefore, project quality management consist of three main processes which are planning for the quality by identifying the requirements of the product or the service, then auditing the quality requirements to insure the standards and the policies are followed and finally performing the quality control by monitoring the results and compare it with the collected requirement at the beginning of the project to insure customer satisfaction (PMI, 2008).

From the above we can see that project quality management is satisfying customers’ requirements through the project life cycle and as Denove and Power IV(2006) stated that Customer service is the organization ability to supply their customers’ needs and expectations. And that is very important to Organizations because Customers love companies that treat them the way they want to be treated, which is confirmed in a research shared by Leland and Biley (2006) that customers will spend up 10% for the same product but with better service, customers will inform from 9 to 12 people when they get good service and they will tell 20 people when they are not treated in the way they want to be treated.

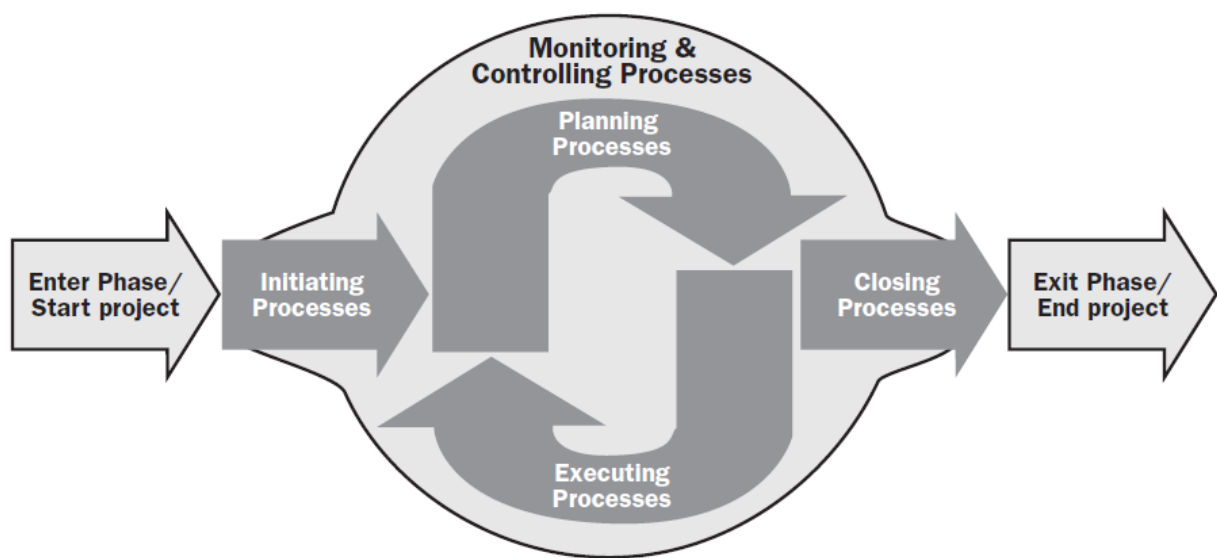


Figure 1: Project management processes group (PMI, 2008, p.40)

3.2 Customer driven project management process

Chinta, R. and Kloppenborg, T. (2010) argue that many managers across different sectors implemented tools such as TQM, Six Sigma and benchmarking to improve quality with looking at the possesses of their projects and products and that is why many Organizations had many obstacles to have a sustainable growth, but looking at the projects processes for improvements and integrating the quality tools will enable firms to create value. Zwikaël and Globerson (2006) also confirm that involving the customer in the planning stage is a very important step to success the project.

As shown in Table 3.1 that PMI identify 42 processes for project management, 20 processes exist in the planning processes group which is the largest one, and that represent almost 47% of the all the processes and that shows the importance of amount of work should be done at the beginning of the project, from these processes there is a direct involvement of the customer who will receive the outcome or the deliverable of the project. From the identification of each process in the PMBOOK (PMI, 2008) we will find that customers have direct involvement in the following processes: (22 processes out of 42 process, 52.4%)

- Initiating processes group:
 - Develop Project Charter
 - Identify stakeholders
- Planning processes group:
 - develop project management plan
 - collect requirements
 - define scope
 - define activities
 - develop schedule
 - plan quality
 - plan communications

- plan risk management
- identify risks
- Executing processes group:
 - perform quality assurance
 - distribute information
 - manage stakeholder expectations
- Monitoring and Controlling:
 - perform change management
 - verify scope
 - control scope
 - perform quality control
 - report performance
 - monitor and control risks
- Closing processes group:
 - close project or phase
 - close procurements

Table 3.1: PMP Project Management Processes (PMI 2008)

	Initiating	Planning	Executing	Monitoring and Controlling	Closing	References
Integration	Develop Project Charter	Develop Project mgmt plan	Direct and Manage Project Execution	Monitor and control project work Perform integrated change control	Close project or phase	(Sypsomos, 1997)
Scope		Collect Requirements		Verify scope Control scope		

		Define Scope Create WBS				
Time		Define Activities Sequence Activities Estimate Activity Resources Estimate Activity Durations Develop Schedule		Control schedule		
Cost		Estimate cost Determine Budget		Control costs		
Quality		Plan Quality	Perform Quality Assurance	Perform quality control		(Sypsomos, 1997)
Human Resource		Develop Human Resource Plan	Acquire Project Team Develop Project team Manage project team			
Communication	Identify Stakeholders	Plan Communication	Distribute Info Manage stakeholder expectations	Report performance		
Risk		Plan Risk Mgmt Identify risks Perform		Monitor and control risks		

		qualitative Risk Analysis Perform Quantitative Risk Analysis Plan Risk Reponses				
Procurement		Plan Procurement	conduct procurements	Administer procurements	Close procurements	

As illustrated in Figure 1 that the customer driven project management processes involves the total quality management environment, project management system and customer driven management team structure. These three elements are integrated to form the customer driven project management processes. The total quality management objective is to create total customer satisfaction throughout the project, while the second element is the processes and the project life cycle and then the team structure which provides the framework for the customer to drive the project and it will highlight the relation between the customer and the project team (Bakley and Saylor, 2001)



Figure 2: Elements of the customer driven project management processes (Bakley and Saylor, 2001)

3.3 Project quality management

As illustrated in Figure 2, PMI (2008) divided the project to 5 phases' which are initiating, planning, executing, controlling and then closing phase. Moreover, Quality is implemented through these phases and project quality management definition is "the processes and activities of the performing organization that determine quality policies, objectives, and responsibilities so that the project will satisfy the needs for which it was undertaken" (PMI, 2008, p.189).

Moreover, project quality management consist of three main processes which are planning for the quality by identifying the requirements of the product or the service, then auditing the quality requirements to insure the standards and the policies are followed and finally performing the quality control by monitoring the results and compare it with the collected requirement at the beginning of the project to insure customer satisfaction (PMI, 2008) and (Orwig and Brennan, 2000).

Mauch (2010) confirms that the role of the quality department or implementing quality is to identify and then analyze the efficiency of the organization or the project by meeting the customer requirements, Walker and Keniger (2002) also highlights that quality can be implemented in project through different tools such as ISO, TQM and benchmarking with other projects, as they listed four possible ways to develop and do the benchmarking as followed:

- Benchmarking with the historical performance for other project within the organization by looking at the lessons learned and key success and failure factors for previous projects.
- Benchmarking with other projects during the project life cycle for continuous improvements purposes.
- Benchmarking with other phase in the same projects
- Benchmarking widely with the same industry projects

3.3.1 Linking quality with project management

According to Orwig and Brennan (2000), quality is an important deliverable of a project. Moreover many affirm that project performance are measured based on time, cost and quality (Barkley and Saylor, 2001), (Kerzner, 1992), and (Chang, 1998), and according to Bryde and Robinson (2007) that a surveys were done with project managers which explore that quality is one of the main measures to assess the project performance and this describes that the quality is a n important element in project management.

Some Organizations underestimate the how customers identify the service quality, customers do not evaluate the end product or the received service only, there satisfaction is also affected by service deliver or product delivery processes, and this justify the strong link between the quality and the project management processes (Orwig and Brennan, 2000)

3.3.2 Plan the quality standards and requirements

Quality planning process includes identifying the quality requirements for the project in a check list and to produce the quality management plan which highlights how the end product quality will be insured and managed through the project lifecycle (PMI, 2008), moreover planning quality for projects allow project managers to resolve problems when it occurs and have the needed correction action to keep the product or the service as per the customer expectation (Sypsomos, 1997)

Figure 2 illustratres how plan for project quality is directly related to cusomer requirements. There are 6 processes considered as an input for the quality planning processes and the ones that are directly related to customers are the work break down structure, scope baseline, stake holders details and requirements (customer requirements), and then these requirements will be a base of developing the quality management plna which highlights how the quality assurance and the quality control will be carried out during project life cycle (PMI, 2008) and (Greene and Stellman, 2009).

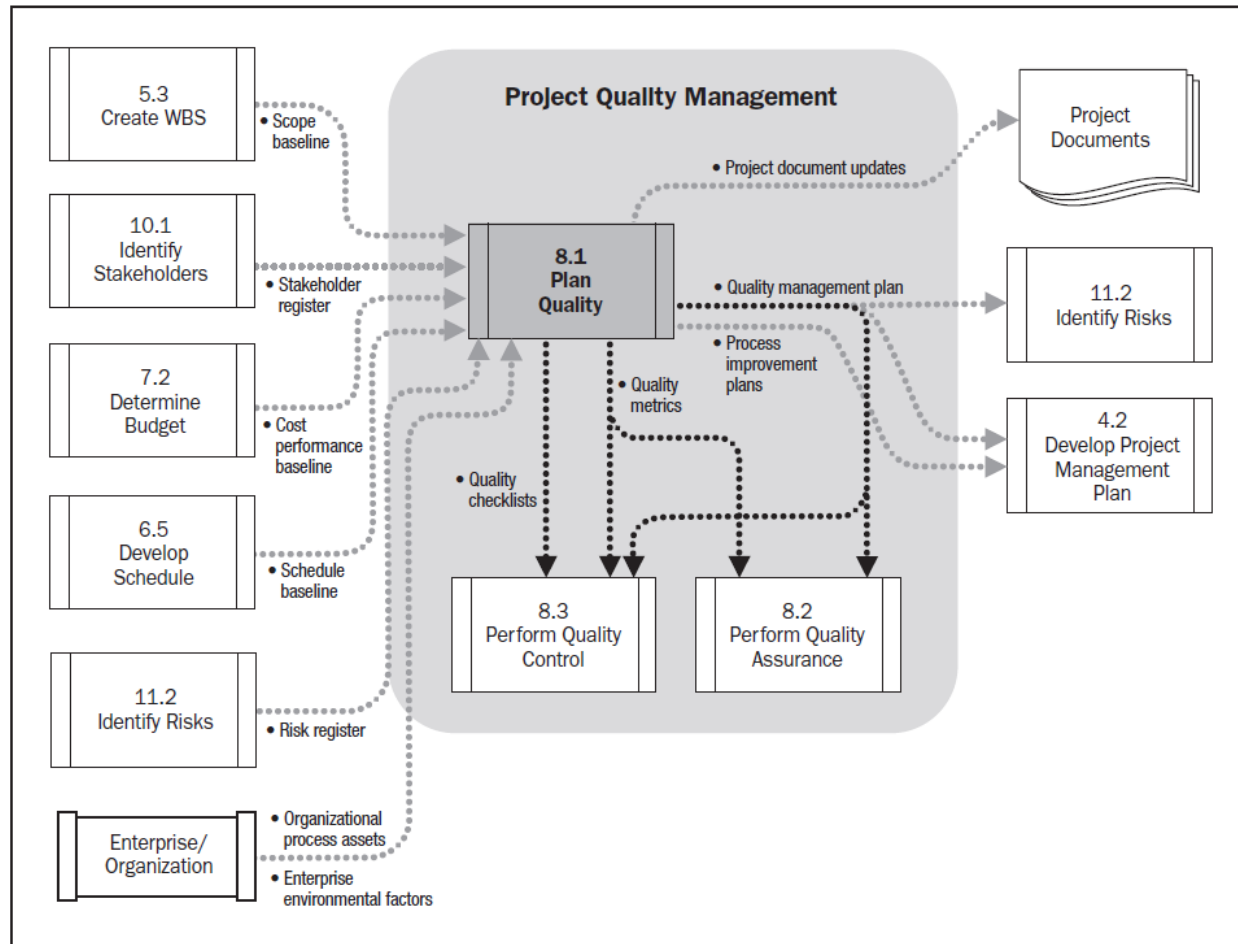


Figure 3: Quality Planning Processes (PMI, 2008)

3.3.3 Monitoring and controlling the delivery processes

According to PMI (2008) that quality control is monitoring the results of assessing the performance and the alignment of the production with the customer requirements and then recommend the necessary changes, but Sypsomos (1997) argue that doing this process and Keeping a balance between meeting the projects requirements and satisfying the customer expectation is a difficult and important task where each customer has different expectation, especially in the service sector.

The quality control is about inspecting the product or the service for any bugs and corrects it (Greene and Stellman, 2009) and as illustrated in Figure 3 PMI (2008) that the quality control processes consist of several inputs like the scope, budget, and project tasks schedule and then approved changes requests with the work performance measures. All of these inputs used to

perform the quality control to validate the required changes and to validate the final deliverables. And to perform these action the project team should have good knowledge about using the quality control tool with good background about statistical of these tools, specially the sampling and the probability, to help in evaluating the outputs of this process.

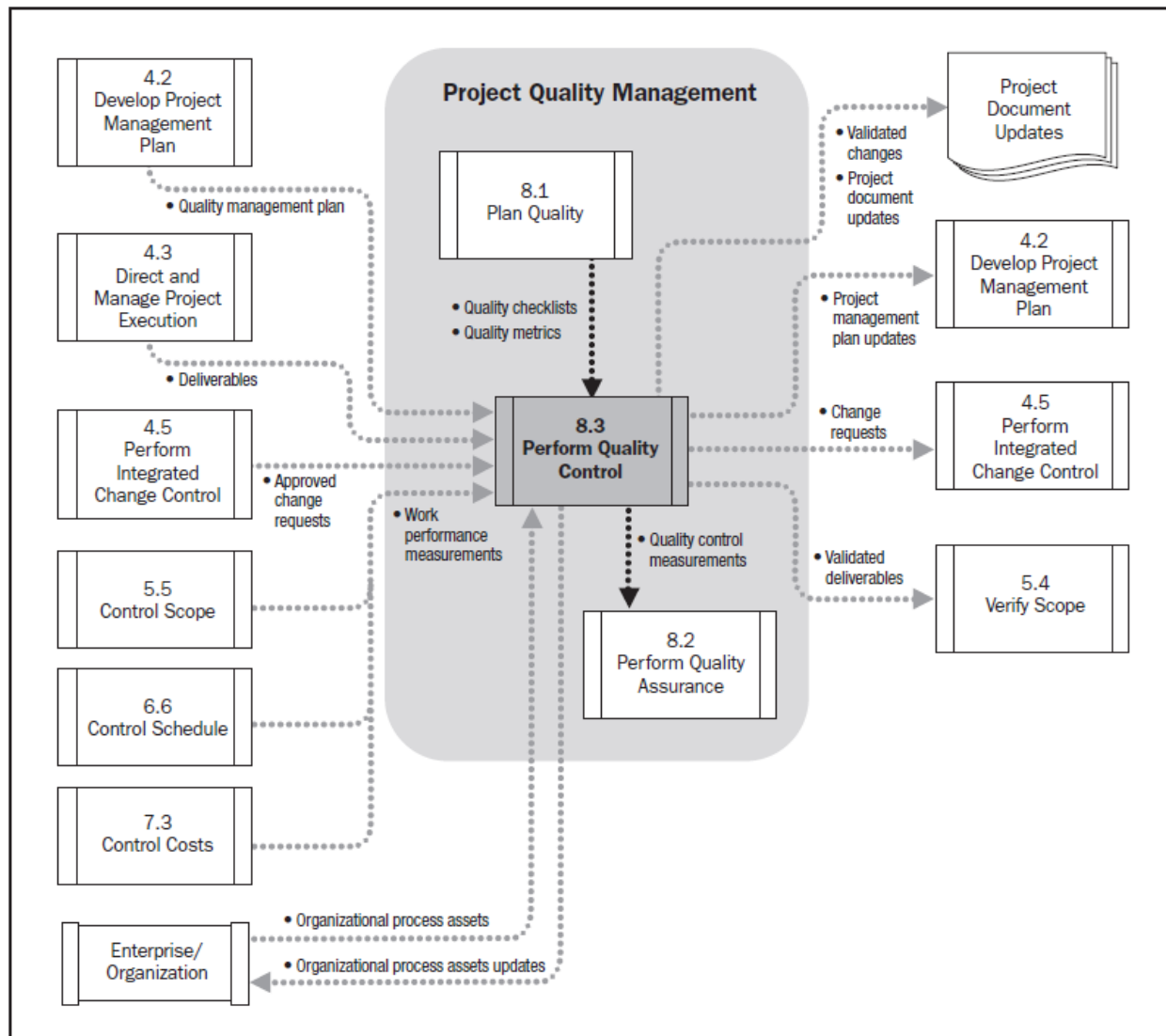


Figure 4: Quality Control Process (PMI, 2008)

3.3.4 Quality assurance and alignment with the project strategy and objective

There are different tools are common in quality control to insure quality in projects such as ISO and quality measurement system technique which include assessment group, techniques, framework documents, benchmark against similar type of projects and then quality records (Walker and Keniger, 2002), and the tools used in quality control could be used in assuring the quality in the project by examining the process rather than the project (Greene and Stellman, 2009)

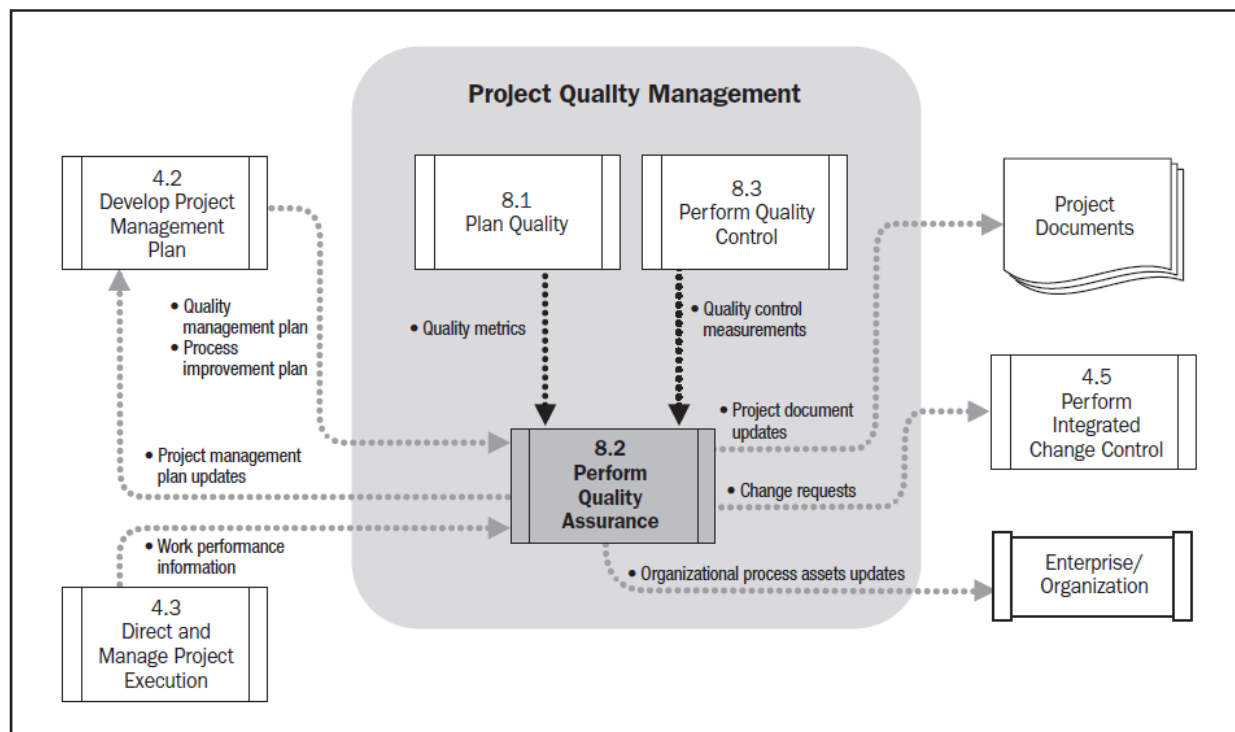


Figure 5: Quality Assurance Process (PMI, 2008)

3.4 The relation between the seven basic quality control tools and the customer driven project management

There are many tools and charts used to apply quality control on projects, but there are very common one called "the seven basic tools of quality" (ACM, 1993), (Greene and Stellman, 2009) and (Dahlgaard and Kanji, 1990). These seven tools are:

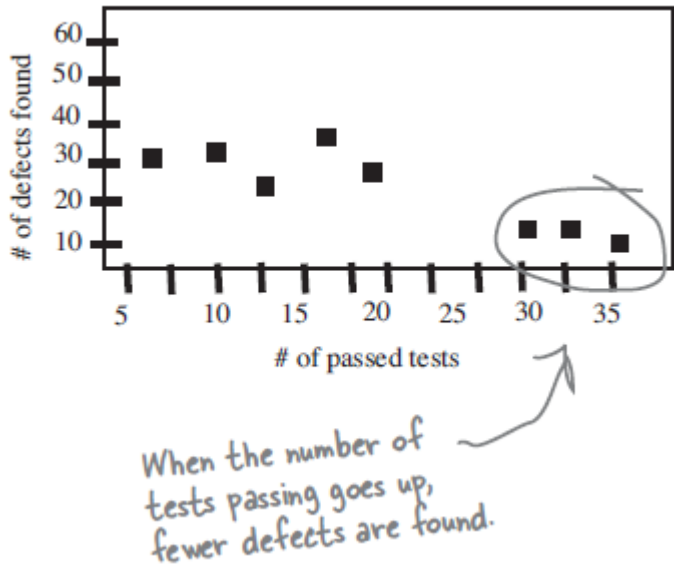
- 1- Control charts
- 2- Cause and effect diagrams (Fishbone and Ishikawa)

- 3- Flowcharts
- 4- Pareto charts
- 5- Histograms
- 6- Run charts
- 7- Scatter diagrams

According to Dahlgaard and Kanji (1990) that the most used ones are the cause and effect diagram and the Pareto charts, and that because it does not require any special theoretical education in statistics and it is easy and simple to use.

Table 3.2 shows a comparison between these tools and the link between using the tool and the impact on customers or the relationship between using the tool and the customer driven project management

Table 3.2: seven basic quality control tools and the customer driven project management

Tool Name	Description and relation with customer driven projects	Reference
Scatter diagrams	Scatter diagram is used to show how two different types of data relates to each other and to examine theories about cause and effect relationship and to find the problems and identifying the root causes  Figure 6: Scatter diagram (Greene and Stellman, 2009)	(Greene and Stellman, 2009), (PMI, 2008), (Read, Rhines, and White, 1986)

	The scatter diagram help in finding if the designed service or the end product has defects or far from the customer requirements and that control the end product quality and insure the alignment of the service or the product with the collected requirements from customer at the initiation stage of the project in the collecting requirements processes	
Cause and effect diagrams (Fishbone and Ishikawa)	This tool is used to figure out what cases the defect, where it a list of the categories of the identified defects and then analyzing the possible causes in order to prevent theses defects in future. Such tools usually analyze the people involved in the processes of delivering the service, the policies and the procedures, the recourses used to produce the end product or the service, the used row material and the premises that deliver the service or the end-product This tool help in analyzing all of the related data that affect customer satisfaction and that are related to the customer requirements to make sure that all the aspects are covered to manage customer needs and expectation and to have a plan for avoiding future bugs or defects in the service or the product	(Greene and Stellman, 2009), (PMI, 2008), (Levesque and Walker, 2007) and (Dahlgaard and Kanji, 1990)
Flowcharts	This tool help is visualizing the process and see how it works, to check how the tasks in the project interrelates and are they depend on to help on making decision when problems occur. Some time the way the project is handled or the service delivery stages.	(Greene and Stellman, 2009), (PMI, 2008), (Levesque and Walker, 2007)

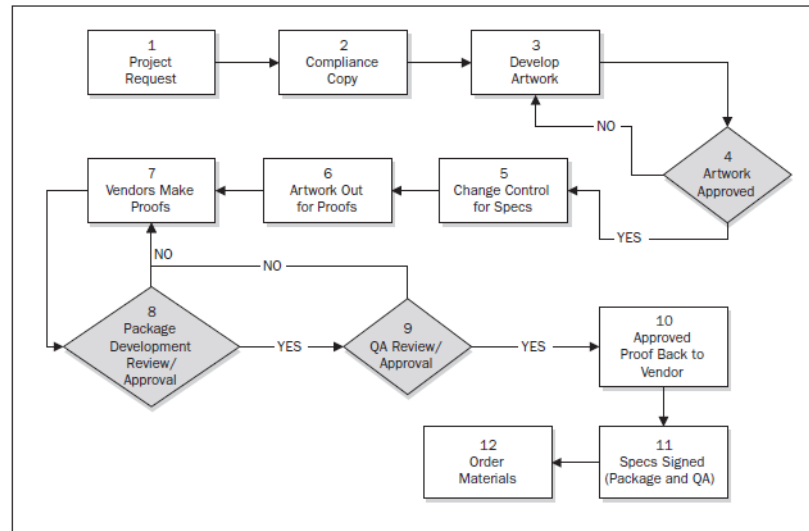


Figure 7:Flowchart (PMI, 2008)

Such tool will help in finding problem from a high level prospective and gives support for the project manager to take the right decision once any problem occur, Moreover flow chart of the customer journey will identify the value moments or the important processes steps to them, so Organizations and project managers will focus on these processes more and give it high priority.

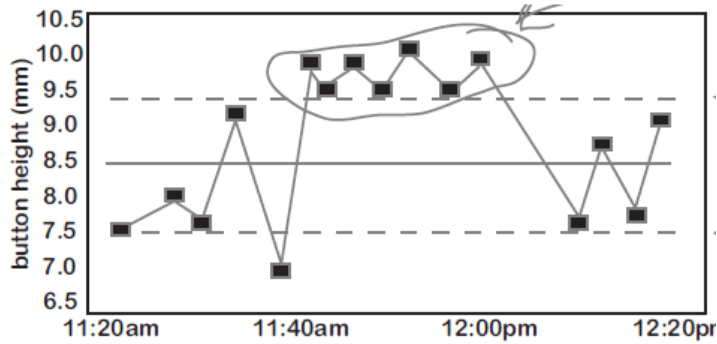
Pareto charts

This tool helps project managers in focusing on the highest priority problems or the problems that required more attention. It is based on the idea that large number of problems and issues are caused by a small number of causes, where 80% of the defects are caused by 20% of the causes.

The Pareto Diagram can help in categorizing customers complains and concerns, and ranking their concerns by frequency of occurrence. So project managers will know what are the main problems that are causing the complaints and dissatisfaction about the project and this tool.

(Greene and Stellman, 2009), (PMI, 2008), (Birnbaum, 2004), (Fine, 1996), (Duffy, 1995) and (Dahlgard and Kanji, 1990)

	The Pareto chart can be used in the following customer driven project processes: • Executing processes group: ○ perform quality assurance ○ manage stakeholder expectations • Monitoring and Controlling: ○ perform change management ○ verify scope ○ control scope ○ perform quality control ○ monitor and control risks Figure 1: SALES BY CUSTOMER. This is a Pareto chart where the vertical axis represents sales and the horizontal axis represents customers. The bars are arranged in descending order of sales. The first two bars are significantly taller than the rest, with arrows pointing to them and the label 'Top Two Accounts'. A vertical line is drawn after the second bar. Below the horizontal axis, a bracket spans from the third bar to the end of the chart, labeled 'Customers 3 thru 10'. Figure 8: Pareto chart 80/20 (Birnbaum, 2004)	
Control Charts	This tool is visualizing how process is working during the project life cycle or during the service delivery, as illustrated in Figure 8 that the chart highlights the mean or the average of the	(Greene and Stellman, 2009), (PMI, 2008),

	processes level, the lower control limit and the upper control limit, so when the processes goes above the limit that means the entire process is out of control.  Figure 9: Control chart (Greene and Stellman, 2009) This tool helps in the monitoring and controlling the execution phase in the customer driven project, where each customer requirement could be monitored separately and verified against the original customer's needs and expectation and it helps in the process of performing the quality control and monitoring the risks.	(Levesque and Walker, 2007), (Latzko, 2003)
Histograms	Histogram charts is a tool that shows the distribution of the data or the cases of errors with categorize them, so it will highlight the critical defects, routine defects and complex defects which help the project managers in having a bigger picture about the issues and the defects in the execution phase. This tool help the project manager to manage the customer expectation and to highlight the issues that related to the important customers and then solve it with more attention and speed of time to make sure that customers are satisfied about the end product or the service	(Greene and Stellman, 2009) , (PMI, 2008), (Levesque and Walker, 2007)
Run charts	It is a run of sequence plots that shows the trend of certain	(Greene and

	activities in the projects, this tool is used to control the quality of the products and the services and it shows the customer satisfaction across the year or any other specific period of time, project manager could also use this tool to compare between the initiation phase when the stakeholders and the customer's requirements are identified with the end results, if it meets their expectations and needs.	Stellman, 2009) , (PMI, 2008) and (Pyzdek, 2003).
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3.5 Link between the quality tools and the project management

The project management effectiveness can be improved by having a better quality assurance and quality control with management of cost to meet the customer requirements (Chakrabarty, Whitten and Green, 2007) and this indicates that the quality tools could support the projects strategic objectives. Moreover, if we consider that projects in same organization consists of group of activities, even though the objectives, deadlines and end deliverables are different, but projects follow the life cycle. Predominantly, organization provides project team with project template as a start point. Thereby project management methodology could be looked at as operational processes (Orwig and Brennan, 2000). Orwig and Brennan (2000) also confirms that quality management practice is aimed to improve the operational management which linked directly to the processes management where the project processes will be executed in an operational way

And since the quality tools are used usually to improve the overall processes of the organization (Nyeck et al., 2002), this point out how the quality and excellence tools such as EFQM, TQM and QFD have a strong affect on the projects performance and quality.

Moreover, to improve quality there are many tools could be used such as TQM "Total Quality Management" to improve the quality and the performance of the Organizations , QFD "Quality Function Deployment" which was found by Yoji Akao in 1966 and it aims to translate customer requirements in to company requirement to design or produce services or products (Antony and

Preece, 2002) in addition to that there are many of the quality management methodologies or tools such as Six Sigma, Lean Six Sigma, CMMI, etc.(PMI, 2008)

In addition to the quality implementation tools there are different ways and framework to measure the service quality all the aspects that related to customer expectation and experience. SERVQUAL was created as an efficient tool to measure the scale of the quality in the service sector and it was widely implemented in many countries (Nyeck et al., 2002)

Barad and Raz (2000) did a research on organization that implements quality management practice and they confirmed that good quality management implementation in Organizations will lead to good project management performance

Barad and Raz (2000) did a research on ten quality management components which are

1. leadership
2. Information and analysis
3. Training
4. Teamwork
5. Morale
6. Benchmarking
7. Supplier management
8. Operational results
9. Customer satisfaction

The main results of the research on the relation between the quality management practice and project performance were as followed:

- there is no strong affect of QM “leadership” practice on the projects operation performance results, but there was an effect from the leadership on developing the project team skills and performance and there were indirect effect on the project process management
- supplier management practice, training and the way that organization implement the quality management practice for information have direct affect on project operational results and performance

- Organisations that implements the quality management aspects has direct affect on customer satisfaction, so the organization that has good data analysis, strong leadership, team development and benchmarking with other Organisations will have good customer satisfaction on projects deliverables

According to Orwig and Brennan (2000) that quality management tools are linked directly to the project management processes, where the quality tools linked total quality management (TQM) includes continuous improvement, employee and team development and training, benchmarking and customer satisfaction and these criteria's affect the project performance, specially the customer satisfaction

3.5.1 Quality function deployment

According to Cooper, (2000) that 46% of the companies recourses are allocated to design services or products, which highlights how important is to design a product passed on customer requirements, moreover Lawrence and Ishii (2004) argue that most of the product development and project management experts agree that determining the product specification based on customer requirements is an essential part to satisfy all stakeholders and provide added value to the project and to the product, therefore QFD is a disciplined approach to transform customer needs and expectations into product and service requirements, and it helps in making plans and determining the impact of the plans on the company and on the projects performance and it is a quality tool that helps the project managers to plan very well for their end products, moreover QFD consist of four planning phases (Barkley and Saylor, 2001):

- 1- Product planning: translating the customer requirement to a design requirement
- 2- Parts deployment: the design requirements are converted to parts
- 3- Processes planning: examining the processes and selecting the right one
- 4- Production planning : looking at the actual production processes

As shown in Figure 9 (Lawrence and Ishii, 2004) that there is alignment with implementing the QFD on project with the project management processes (PMi, 2008) where QFD starts identifying the user's needs, compliance issues and competitor analysis and that is aligned with the initiation and planning phase in the project management life cycle, then QFD looks at how

the project will be managed and what are the core competencies and the strategic dependencies and the required recourses to do the actual project, the definition of these steps in the planning phase and then it get executed in the execution and controlling phase.

Implementing QFD helps in understanding the needs and the requirement and the relation between the involved parties in the project (Lawrence and Ishii, 2004) and this will improve the doing and implementing the stakeholders register processes (PMI, 2008) and supports the Planning processes group such as develop project management plan, collect requirements, define scope, define activities, develop schedule, plan quality, plan communications, plan risk management and identify risks (Greene and Stellman, 2009)..

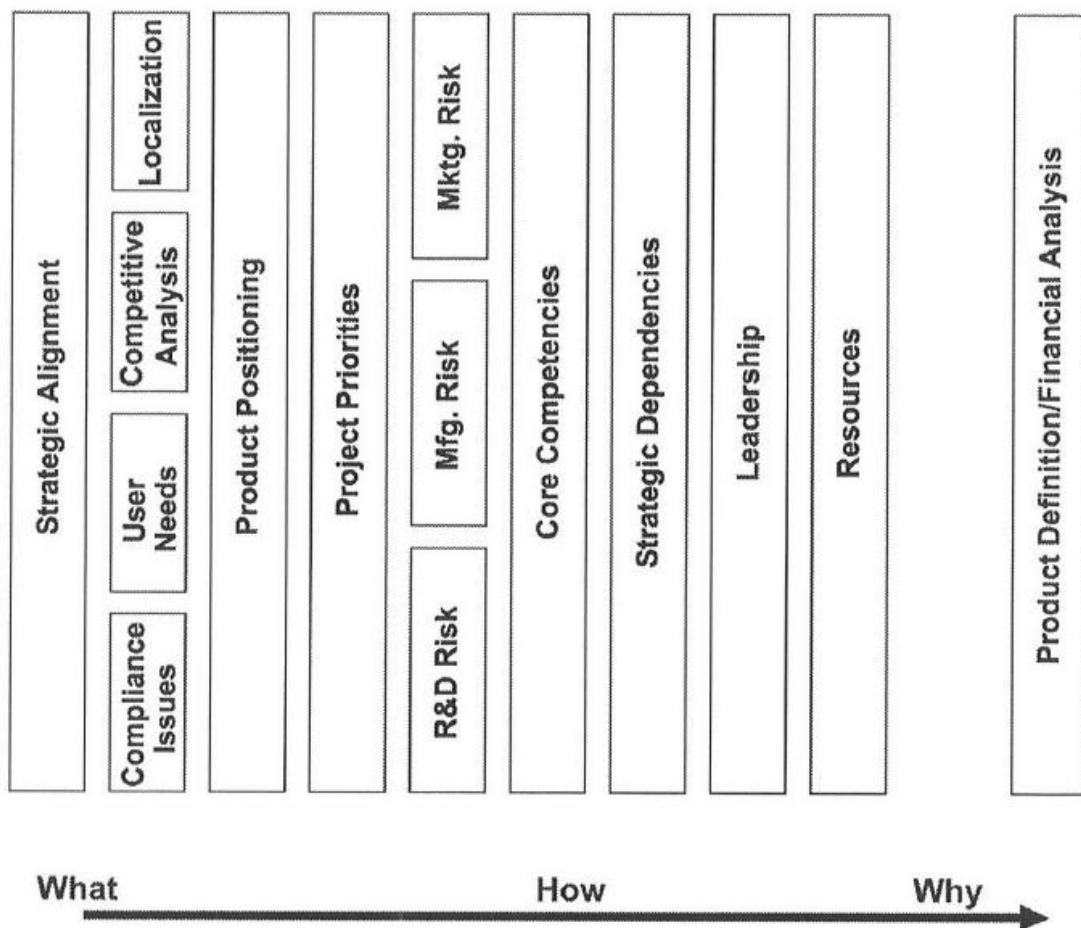


Figure 10: Product definition steps (Lawrence and Ishii, 2004)

Implementing QFD on projects will help in achieving the projects goal and alignment with the organization overall strategy. And it is aid to manage the project risk to prevent the product from the defects in the early design stages (Yong-Zhong and Jun-Wen, 2010).

3.5.1.1 QFD “House of Quality”

Gupta and Wilemon (1990) did a research on large number of IT companies and they found out that poor product definition or customer requirement collection is the most reason causes the delay in projects and failures in some cases, shown in Figure 10. This research highlights the importance of identifying the product features in a systematic way with the consideration of the customer or the end user opinion.

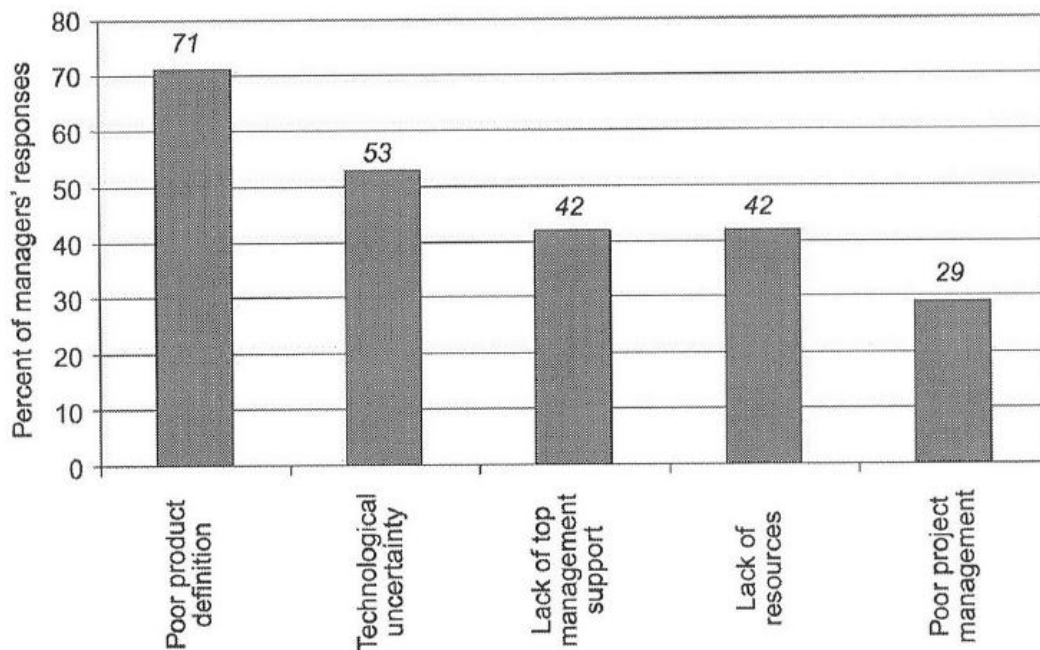


Figure 11: reasons of product development delays (Gupta and Wilemon, 1990)

The outcome of the quality function deployment planning is included in a chart called house of quality which is used to move the customer requirements to a specific production processes (Barkley and Saylor, 2001) and this tool address the problem of poor identification for product specification. HOQ is shown in figure 11 It the heart of the entire QFD process and it consist of

some matrixes: What's matrix which illustrate what is demanded and how's matrix which is about how to do with the demands (Yong-Zhong and Jun-Wen, 2010)

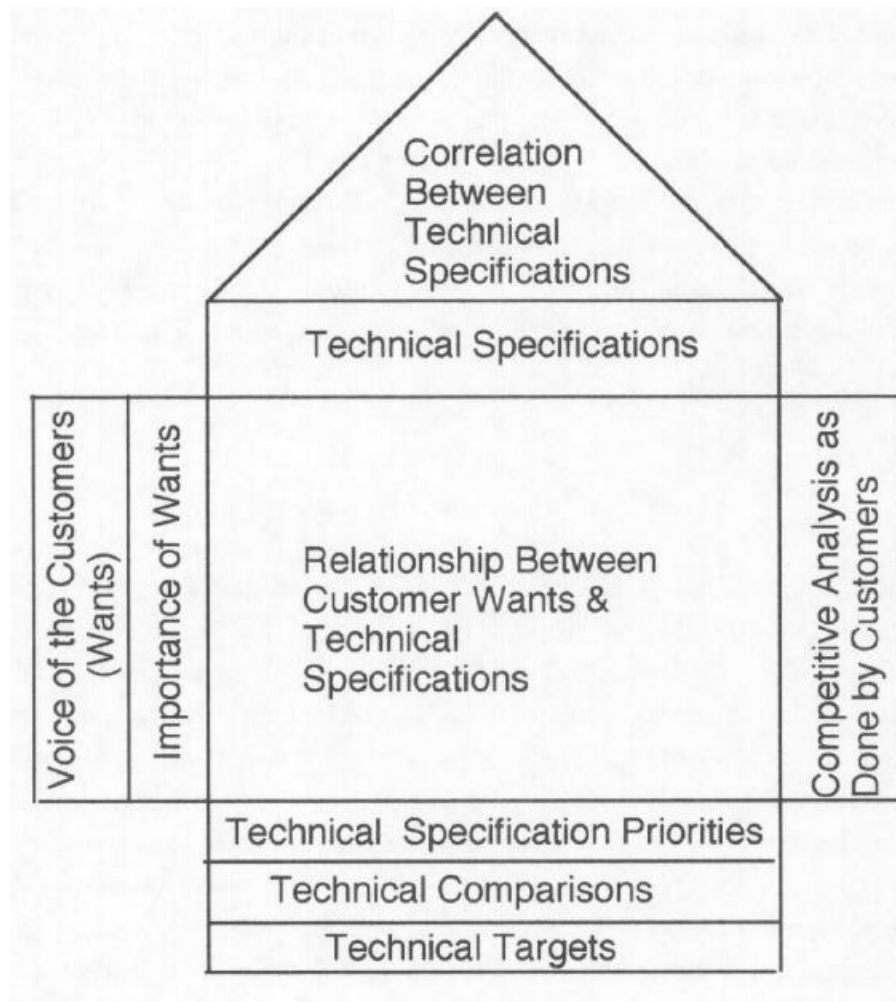


Figure 12: House of Quality (Partovi, 1999)

3.5.2 Total Quality Management

According to Dahlgaard and Kanji (1990) that “Total quality management is defined as the culture of an organization committed to customer satisfaction through continuous improvement”. And the objectives from implementing a total quality management during product design or project life cycle are to have better operation of integrating the customer and the quality requirement in to the product or the service and to evaluate the product against the requirements to insure customer satisfaction (Masters and Frazier, 2007) and . Moreover TQM is popular and used in many companies and different sector for achieving excellence (Tsung-Hsien and Yen-

Lin, 2010) and it improves the company and the projects performance (Curkovic, Vickery and Droge, 2000)

TQM is aimed to look at level of customer focus through the organization and that will have an impact on the project management methodologies that are used in the same organization to be more customer focused, Moreover, TQM will have a direct effect to project planning processes (Bryde and Robinson, 2007) and it will have positive impact on customer satisfaction, productivity and projects final outcomes (Terziovski and Samson, 1999). And according to Sypsomos (1997) that a study was conducted for more than 30 leading construction companies that implement TQM to improve their processes. Some of the lessons learned form that study highlights the importance of having easy processes for implementing quality on all over the organization and avoiding the step-by-step processes and one of the major projects success indicators is the cost as well as customer satisfaction.

There are several tools used by TQM which help in improving the projects performance such as bar charts, flowcharts histogram which are used to analyze the project data, brainstorming, list reduction to encourage team work while interviews, surveys and check sheet could be used to gather data from stakeholders (Sypsomos, 1997) from the above we can see that the TQM helps in improving the project performance and quality. Moreover, Bryde and Robinson (2007) did a research on many organization that implements the TQM to see the relationship with the project management practice and processes and they results were that most of the companies implements TQM are time, quality and cots focus with good technical practice of project management and more customer satisfaction about the projects deliverables

Salaheldin (2009) listed ten success factor for implementing total quality management on companies, which are: Managing customers, Managing employees, partnership with suppliers, customers satisfaction, methods and ways of communication, managing quality on strategic level, teams and leadership improvements, external interface management, planning for operational quality and the adopted quality improvement systems. That highlights how implementing TQM will directly affect the project management process specially the ones that are driven by customers.

3.5.3 EFQM

EFQM model is a framework that can help organization to have a tangible and measurable vision and strategic objectives, clear systematic ways to deliver service or products or to operate in an efficient way with less cost and better quality (Dutt et al, 2012), despite the implementation of EFQM on many firms but many of quality programs or tool failed because there were no direct integration with the actual projects or operation in the Organizations , and that highlights the importance of aligning EFQM with the projects delivered in the organization or with the day to day activities and making sure that the implementation of the quality tools is not isolated from the project and the operation processes (Davies, 2008)

According to Dubai Quality Award (2010) that EFQM excellence model is a framework that enables organization to:

- Asses where they are on the path to excellence by understanding the key strength and improvement points in relation to their strategic intent (vision, mission and strategic values)
- Provide common vocabulary and way of thinking about the organization that facilitates the effective communication of ideas, both within and outside the organization
- Integrate existing and planned initiatives, removing duplication and identifying gaps
- Provide a basic structure for organization's management system

EFQM excellence model consist of three integrated components:

- **The fundamental concepts of excellence:** This is about the principles which are essential to achieve sustainable excellence for any organization (shown in Figure 12)
- **The EFQM Excellence Model:** The actual framework to help Organizations convert the fundamental concepts and Radar logic into practice (shown in Figure 13)
- **RADAR logic:** a dynamic assessment framework and powerful management tool that support the organization to see where it is stands in the excellence path. (shown in Figure 14)

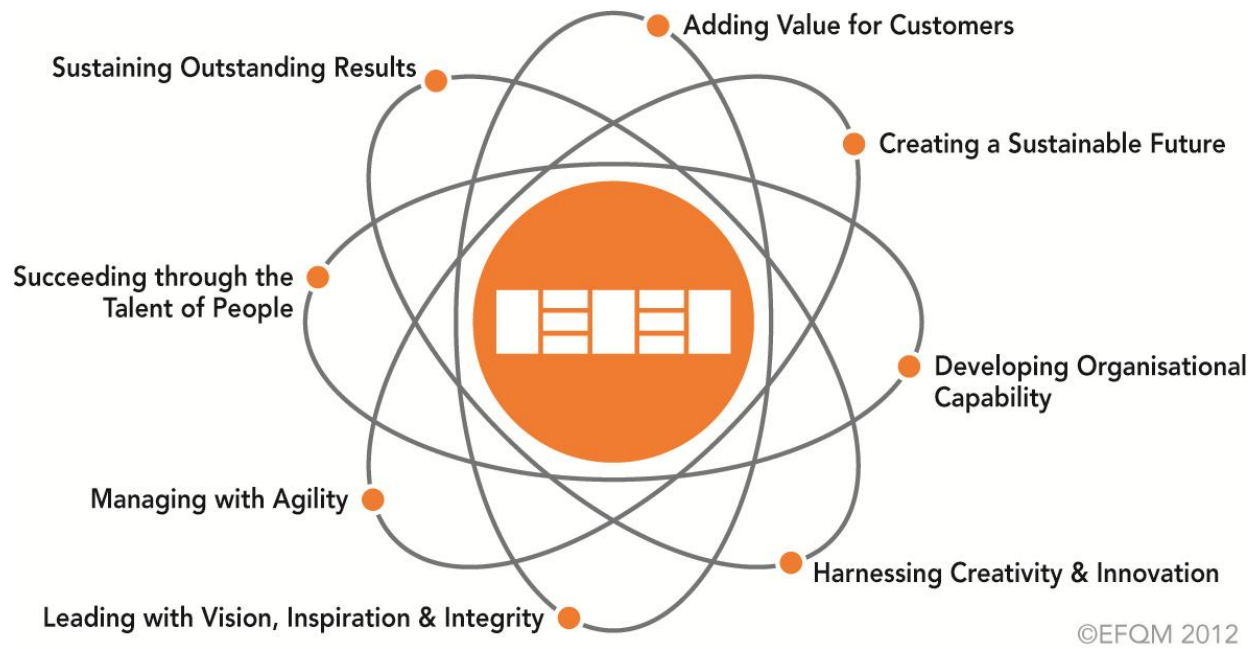


Figure 13: The fundamental concepts of excellence (EFQM, 2010)

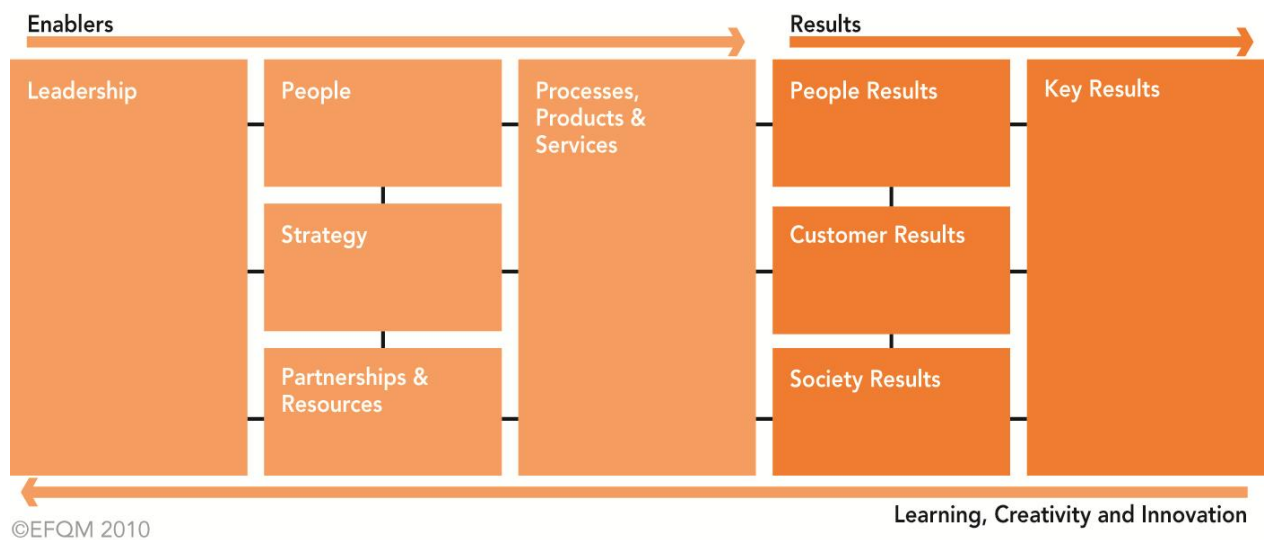


Figure 14: The EFQM Excellence Model (EFQM, 2010)

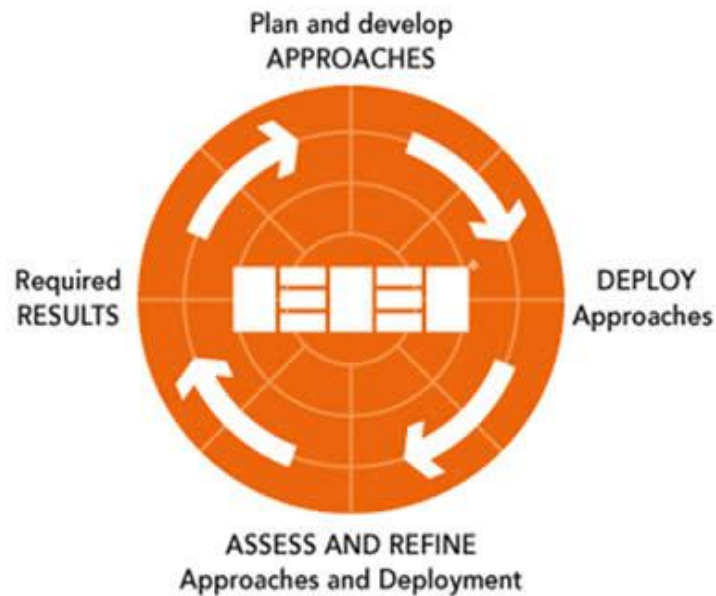


Figure 15: EFQM RADAR (EFQM, 2010)

The EFQM excellence model consist of five “Enablers” and four “Results”, the enablers criteria cover what the organization does and how it does it, while the results criteria are caused by the enablers or it is the results of what the organization is doing (Nabitz, Quaglia, and Wangen, 1999). The Model Criteria and how they linked or affect the project management processes is as per the following:

Enablers

- Leadership
 - This criterion is about how is the leadership and management shapes the future and the successes of the organization like the culture of organization, the flexibility of the managers and the strategic intent (EFQM, 2010) and implementing this criterion in effective way, allows the project managers and organization top management to increase the positive impact of their decision-making and enables them to focus on the initiatives that will increase the customer service (Wongrassamee, Gardiner and Simmons, 2003)
- People

- Excellent organization should have the right culture and environment for their employees to allow innovation and creativity to achieve the strategic goal with having employee's development plans, developing the knowledge and the capabilities for staff and implementing reward and recognition programs (EFQM, 2010). Moreover, Tutuncu and Kucukusta (2010) did a study on the influence of employees and customer satisfaction from implementing the EFQM excellence model and to determine the relation between the excellence model and the job satisfaction, and the result confirmed that the relation between the job satisfaction and implementing the EFQM excellence model insignificant and the project teams is more satisfied which lead to better projects performance. Results are shown in Appendix 1.
- Strategy
 - This criterion is about implementing strategic intent with stakeholder focus and based on the needs and expectation of the stakeholders and the organization internal capabilities, with insuring that the vision and mission is communicated to employees (EFQM, 2010). Moreover this will help in drawing path for the projects in the organization to achieve the present and future needs and expectation of the organization (Juan, 2002).
- Partnerships and Recourses
 - Managing partners and internal and external resources in a way that support achieving the mission and vision of the organization with using the resources and the technology in an efficient and effective way to support achieving the strategic objectives (EFQM, 2010), and it helps project managers in allocating the required recourses and managing partners with exchanging experiences to insure successes of project deliverables with good quality (Juan, 2002)
- Processes, Products and Services
 - Managing and improving all of the processes that are related to stakeholders, customers value, products and services and the customer relationship management (Dubai Quality Award , 2010), if an organization implemented the excellence model in an effective way that will lead to having a clear systematic approach of

doing thing and have a sustainable way for executing the project management processes

Results

- People Results
 - This criterion is about having measures and performance indicator to measure the employees satisfaction and their perception about the leadership and management, internal communication and working conditions (EFQM, 2010)
- Customer Results
 - Excellent organization sets key performance indicators and targets to measure the success of implementing their strategy and to measure the customer perception about the reputation, product and services and customer loyalty (Dubai Quality Award, 2010). Implementing the enablers of the excellence model in an effective way will help in increasing the customer satisfaction by meeting their needs and expectation, and that helps in setting (Juan, 2002) and meeting the customer requirements in the initiating and planning project management processes group (PMI, 2008).
- Society Results
 - Excellent organization sets clear key performance indicators and targets based on the understanding for the needs and expectation of the society with measuring the perception of the society in regards of the environmental impact, reputation, workplace and social impact (EFQM, 2010).
- Key Results
 - Excellent organization sets key strategic outcomes and key performance indicators about the financial and non financial targets and outcomes with measuring the project costs and the supplier performance (EFQM, 2010).

3.5.4 ISO 9000

ISO 9000:2000 is a set of standards were created to help organization in implementing quality management system, and ISO 9001 specify the requirements for quality management system while the ISO 9004 explains the guidelines about the quality management system Russell (2000), but ISO 9000 focus on evaluating the processes of the projects and the Organizations and not on

the quality of the end product or the service (Walker and Keniger, 2002). And according to Sampaio, Saraiva and Rodrigues (2011) that ISO 9001 is the most effective tool could be used for managing the quality systems and the great growth for implementing this standard lately confirms the string effect of implementing it for different sectors and according to (ISO, 2007) that more than 90000 organization is certified with ISO 9001 across the world, moreover, Jain and Inderpreet (2012) looked at evaluating the manufacturing performance and how ISO 9001 contributes in improving the products and the overall performance of the factories and the results confirms that there is significant contribution of implementing ISO 9000 on the leadership and management contribution and continues improvement, in addition to that most of the factories that implemented ISO 9001 had a growth in the overall performance to meet the organization vision and mission.

Dearing (2007) listed three main benefits of implementing ISO 9001 as per following:

- It provides discipline: the certification should be done through third party auditors, so if there any weakness point in the organization it will be identified and will be listed in the improvement points and that insure the clear systematic way during the projects life cycle.
- It contains the basics of good quality systems: the standard include many requirements for good quality system like understanding and meeting customers' needs and requirements, having the capable resources to deliver the products or services with the required quality level, identifying risks, issues and problems and having the corrective action to resolve them. The ISO 9001 requirements are shown in Figure 15.
- It provides better opportunity for Organizations in the world market and possibilities to increase the profit, and that because companies will prefer a certified ISO supplier to provide them with the required material to finish their projects, and customers will aim for the products that are ISO 9001 certified.

Requirements that help control or improve quality	Requirements that do not help control or improve quality
These actions help ensure a product or service meets a customer requirement.	These actions do not directly affect the quality of a product or service in positive way.
"The organization shall determine requirements specified by the customer" (section 7.2.1)	"These processes shall be managed. . .in accordance with the requirements of [ISO 9001]." (section 4.1)
"Product requirements are defined" (section 7.2.2.a)	"The quality management system. . .shall include a quality manual." (section 4.2.1)
". . .documentation shall include . . . documents needed . . . to ensure the effective planning, operation and control of its processes. . ." (section 4.2.1.d)	". . .documentation shall include. . .records required by this International standard. . ." (section 4.2.1.e)
". . . analysis of data shall provide information relating to . . . customer satisfaction . . . conformity to product requirements. . ." (section 8.4)	"The input to management reviews shall include information on. . .[seven subjects]." (section 5.6.2)
"When product requirements are changed, the organization shall ensure that relevant documents are amended and that relevant personnel are made aware" (section 7.2.2)	"Top management shall ensure that appropriate communication processes are established. . . regarding the effectiveness of the quality management system. . ." (section 5.5.3)
". . .establish and implement the inspection or other activities necessary for ensuring that purchased product meets specified requirements." (section 7.4.3)	"Records from management reviews shall be maintained." (section 5.6.1)
". . .shall determine the monitoring and measurement to be undertaken. . .to provide evidence of conformity of product to determined requirements." (section 7.6)	"Planning of product realization shall be consistent with the requirements. . .of the quality management system. . ." (section 7.1)

Figure 16: Two Categories of requirements of ISO 9001 (Dearing, 2007)

3.5.5 SURVQUAL

Parasuraman, Zeithaml and Berry (1988) created an assessment tool for the customer perception which contains 22 items, this tool called SERVQUAL. Summary of the steps on how is SERVQUAL was developed is shown in Appendix 2.

Rajani (2010) identified SSERVQUAL as a tool to understand the difference between the level of the customer's needs and expectations and the actual delivered service to them, and it stand for SERVICE QUALity, More over he listed seven gaps identified in the service quality assessment model (shown in Figure 16), Moreover there are five dimension for the tool as per the following:

- 1- Tangible: this is about the premises of delivering the service like the appearance, tidiness and recourses.
- 2- Reliability: delivering and performing as per the promises to the customers with high level of accuracy.

- 3- Responsiveness: going the extra mile and providing all the support and help to customers with offering available channels to listen to customers.
- 4- Assurance: the capabilities of the employees and the way they deal with customers
- 5- Empathy: caring for customer's feelings and concerns and providing high attention to their requirements.

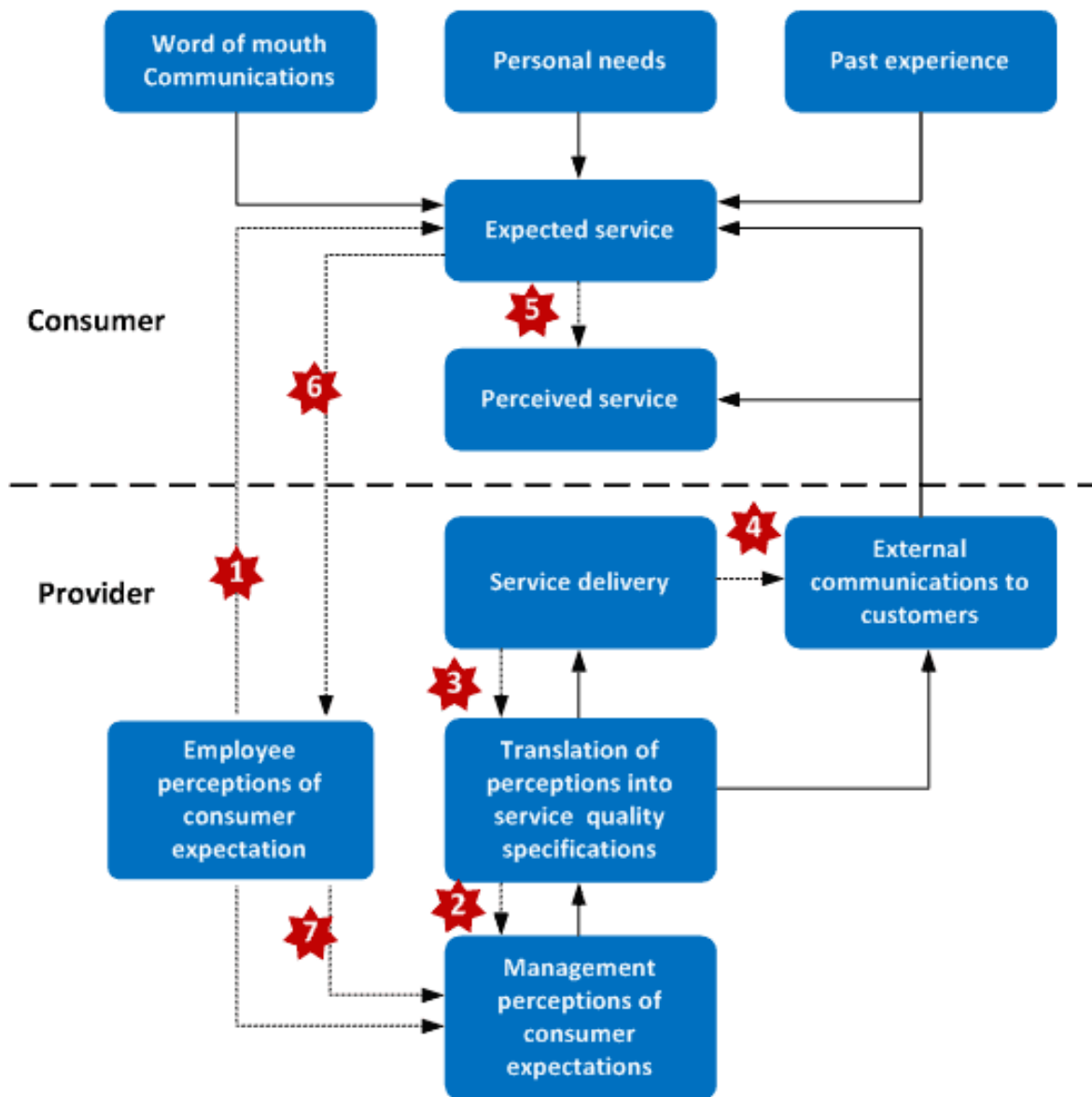


Figure 17: SERVQUAL seven gaps (Rajani, 2010)

The main element in SURVQUAL is how customer will be receiving the service, where the customer expectation could be divided to two areas: The need or desire for the service and the

level of acceptance or the adequate service. The difference between these two main criteria is the zone of tolerance or to which way the customers will accept the service (Shahin, 2007) so then to measure Gap 5 in Figure 16 we can use the following formulas (Rajani, 2010):

Measure of Service Adequacy (MSA) = Perceived Service - Adequate Service

Measure of Service Superiority (MSS) = Perceived Service - Desired Service

3.6 Quality tools and relationship with customer driven project management processes (comparison)

Table 3.3 points out the relationship between the quality tools (QFD, TQM, EFQM, ISO 9000 and SURVQUAL) with the project management processes that have direct customers involvement, these processes are identified in this paper as Customer driven project management processes and that based on the involvement of the customer or end user in each processes group (PMI, 2008). The left side of the table lists the customer driven project management processes, while the other side of the table lists the quality tools with their effect on the identified project management processes.

Table 3.3: Quality tools and relationship with customer driven project management processes

Customer Driven Project Management Processes (PMI, 2008)	Quality Tools				
	Quality Function Deployment	Total Quality Management	EFQM	ISO 9000	SURVQUAL
<u>Initiating processes group:</u> - Develop Project Charter - Identify	It helps in identifying the stakeholders and their affect on the project(Antony and Preece, 2002)	It defines what satisfy the customers and the responsibilities for the project stakeholders (Dahlgaard and	Helps in developing the charter and aligning it with the overall strategy (Tutuncu and Kucukusta, 2010) and	-	-

stakeholders		Kanji, 1990)	(Wongrassamee, Gardiner and Simmons, 2003)		
<u>Planning processes group:</u> • develop project management plan • collect requirements • define scope • define activities • develop schedule • plan quality • plan communications • plan risk	Very effective and effective tool to collect product or projects requirements and turning that to a product or project specifications (Antony and Preece, 2002), (Greene and Stellman, 2009) and (Yong-Zhong and Jun-Wen, 2010), defining the project scope (Barkley and Saylor, 2001) and Planning for the project (Lawrence	Improve the design and the planning phase in projects (Masters and Frazier, 2007) and (Bryde and Robinson, 2007)	Positive impact on directing the initiatives and projects to be customer focused and that helps in having good plans based on customer requirements (Wongrassamee, Gardiner and Simmons, 2003) and (EFQM, 2010)	ISO 9000 helps Organizations in having clear systematic processes for planning projects and discipline approach for project management plan Russell (2000)	Can be used to identify the customer expectations and needs (Rajani, 2010) and (Parasuraman, Zeithaml and Berry, 1988)

management	and Ishii, 2004)				
Identify risks					
<u>Executing processes group:</u> - perform quality assurance - distribute information - manage stakeholder expectations		Could be used to perform quality and improve the project performance (Tsung-Hsien and Yen-Lin, 2010) and (Curkovic, Vickery and Droge, 2000) and improves the executing processes Sypsomos (1997) and Salaheldin (2009)	Executing the project with better quality and clear systematic processes (Dutt et al, 2012), (Davies, 2008) (Juan, 2002)	Best tool to execute and manage the quality during the project execution phase (Walker and Keniger, 2002). (Sampaio, Saraiva and Rodrigues, 2011)	-
<u>Monitoring and Controlling:</u> - perform change management - verify scope		Helps in monitoring the deliverables quality and processes with the alignment to the identified customer	Helps in having a clear processes in a place to monitor the performance and the risk and to control the quality	Discipline approach to identify improvement points and defects and to control projects and products (Dearing	Great tool to assess the customers perception about the products or the project execution to do the required

• control scope • perform quality control • report performance • monitor and control risks		requirements (Terziovski and Samson, 1999), (Curkovic, Vickery and Droge, 2000) and Salaheldin (2009)	with an identified targets and trends (EFQM, 2010)	,2007)	corrective action to insure more satisfaction (Parasuraman, Zeithaml and Berry, 1988) and (Shahin, 2007)
<u>Closing processes group:</u> • close project or phase • close procurements		Have positive impact on the final outcomes (Terziovski and Samson, 1999).	Increase the customer satisfaction about the end product (EFQM, 2010) and (Juan, 2002)	Checking the conformance to the main identified requirements (Jain and Inderpreet, 2012) and Dearing (2007)	-

3.7 Contribution of Quality tools to Customer Driven Project Management processes

Many researchers described the contribution or the relation of the quality tools on the Organizations and project management performance and success (Lawrence and Ishii, 2004), (Masters and Frazier, 2007), (Bryde and Robinson, 2007), (Tsong-Hsien and Yen-Lin, 2010), (Curkovic, Vickery and Droge, 2000), (Dutt et al, 2012), (Russell, 2000), (Davies, 2008), (Juan, 2002),(Russell,

2000), (Walker and Keniger, 2002), (Sampaio, Saraiva and Rodrigues, 2011), (Dearing ,2007), (Rajani, 2010), (Parasuraman, Zeithaml and Berry, 1988) and (Shahin, 2007). Table 3.4 shows to which level quality tools could contribute to the customer driven project management processes and to which level it contributes to the successes and to the positive performance of the project in case these tools implemented effectively on Organizations . More contribution comparison between EFQM and ISO 9000 are shown in Appendix 3.

Table 3.4: Contribution of quality tool to customer driven project management processes

Customer Driven Project Management Processes (PMI, 2008)	Quality Tools Contribution				
	Low/Medium/High				
	Quality Function Deployment	Total Quality Management	EFQM	ISO 9000	SURVQUAL
Initiating processes group	High	High	High	Low	Low
Planning processes group	High	High	High	Medium	Medium
Executing processes group	Low	Medium	Medium	High	Medium
Monitoring and Controlling	Low	High	Medium	High	High
Closing processes group	Low	Medium	Medium	Medium	Low
References	(Antony and Preece, 2002) (Greene and Stellman, 2009), (Yong-Zhong and Jun-Wen, 2010), (Barkley and Saylor,	(Dahlgaard and Kanji, 1990), (Masters and Frazier, 2007), (Bryde and Robinson, 2007), (Tsung-Hsien and Yen-Lin, 2010), (Curkovic,	(Tutuncu and Kucukusta, 2010), (Wongrassame e, Gardiner and Simmons,	(Russell, 2000), (Walker and Keniger, 2002), (Sampaio, Saraiva and	(Rajani, 2010), (Parasuraman, Zeithaml and Berry, 1988) and (Shahin,

	2001) and (Lawrence and Ishii, 2004)	Vickery and Droge, 2000), (Sypsomos, 1997) and (Salaheldin, 2009), (Terziovski and Samson, 1999) and (Curkovic, Vickery and Droge, 2000)	2003), (EFQM, 2010), (Dutt et al, 2012), (Russell, 2000), (Davies, 2008) and (Juan, 2002)	Rodrigues, 2011), (Dearing ,2007), (Jain and Inderpreet, 2012) and (Dearing, 2007), (Russell, 2000),	2007)
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3.8 Excellence Models and Awards in United Arab Emirates

The United Arab Emirates Federal and Local governments provides huge support for the private and the government sector by initiating many excellent awards on the federal and on the local level for all sectors. The aim of these awards is to measure the business performance and to achieve higher growth through leadership, innovation and continual improvement (*SKGEP, 2012*) and (*DQA, 2010*).

There are many excellence award in United Arab Emirates created based on the EFQM excellence model, some if these awards are:

- Dubai Quality Award: DQA was launched in 1994 by Department of Economic Development and it aimed to improve government and private organization performance and standards to be as per the best practice (*DQA, 2010*) and (*Government of Dubai, 2012*)
- Sheikh Khalifa Excellence Award: this award was launched in 2006 for the government sector to encourage providing excellence service to customers and increase the governments departments performance (*SKGEP, 2012*)
- Abu-Dhabi Award for Excellence in Government Performance: This award is for Abu Dhabi Government entities, and the aim of it is to create a competitive environment towards excellence and better performance (*ADAEP, 2012*)
- Sheikh Mohamed Bin Rashid Al-Maktoum Business Award: The award was launched in 2005 to encourage businesses to improve their practices, services and products. There are seven categories for the award: Service category, Manufacturing category, Financial Service category, Transport and Logistics category, Trade category and Re-Export category (*MRM Business Award, 2011*).
- Dubai Service Excellence Scheme: The award was initiated in 2002 and it aimed to improve the shopper experience in Dubai a better and excellent experience (*Government of Dubai, 2012*)
- Dubai Human Development Award (DHDA): Was launched in 2002 and it aimed to award the organization that support Emiritization and having a good human development initiatives (*DED, 2011*)

- Ajman Excellence Award: Was initiated in 2004 to encourage all government departments in Ajman to improve their performance, cutting cost and delivering better service (AJEP,2008).
- Sheikh Saqr Government Excellence Award: This award was launched to contribute in developing the government sector in RAK and to have good awareness about excellence and quality with increasing the government entities performance and customer satisfaction (RAKSSPGE, 2010)

3.9 Customer driven teams

Many Organizations focus on customer project requirements rather than looking at the customers' needs and expectations (Barkley and Saylor, 2001) and according to Orwig and Brennan (2000) that customer satisfaction is based on the expectation about the deliverables and this assert that the project teams should address both areas. Moreover, Thamhain (2004) did a field study on 80 teams in 27 companies and he affirms that the leaders and the management should totally understand the need and the environment of the organization in order to exceed the team performance, and he also suggest some factors that improve the team performance such as ability to communicate with each other and dealing with conflict situations and having good relation between the team members in a good work environment.

Project teams are group of individuals that are performing together and represent an important group of the organization, and this team is usually formed for main purpose: to complete the tasks as per the client or customer specification within the targeted deadline (Anthony and Janet, 2002), and teams ensures that all aspects of the project like project management, functional, processes and requirements are integrated together to achieve the main result, which is customer satisfaction, and such teams provide better decisions and the motivation to carry them out (Barkley and Saylor, 2001), moreover Anthony and Janet (2002) did more than 51 interviews with project teams to determine the main factors that help in increasing the team performance and the results are shown in Figure 17

Exhibit 1. Summary of theme analysis from interviews	
Theme	% of individuals
1. Team orientation: sense of belonging to a team, working well together	71%
2. Critical leader behaviors	67%
3. Team communication: frequent team meetings	61%
4. Ownership: sense that personal success is directly tied to project's success	47%
5. Location: colocation and/or physical isolation of team	43%
6. Performed team building:	
Formal	43%
Informal	43%
7. Competition: sense of competition with other or previous projects	35%
8. Rewards or bonuses for excellence: use of team perks	25%
9. High level support: sponsorship/high profile/high visibility of project	20%

Figure 18: Summary of the interview results of the successes factors for project teams (Anthony and Janet, 2002)

3.9.1 Building the Customer driven team members

Rickards and Moger (2000) and Abudi (2010) described that Teams goes through five stages of development:

- 1- Forming: this is the first stage where the team member start to meet each other and introduce each other and share information about the ire experience and background, and it is very important in this stage for the team leader to clear the team and the project objectives and the ground roles.
- 2- Storming: at this stage team members start to work with each other and they start to share ideas on what should be done and what should not be done, therefore this st7age will have a lot of conflict and the team leader should resolve the conflicts and direct the team on how to work together toward the main goal.
- 3- Norming: at this stage teams start to work more effectively and they move from the individual objectives to the project objective and they realize the benefits of having differences in the team, mostly at this stage the project manager or the team leader don't

need to be involved in every design making processes to solve problems as the team is working together and can take decision for certain issues.

- 4- Performing: at this stage the team is performing at the highest level and they are all focused towards the group goal and the project goal and the deliverables get finished easier and faster. Moreover, team leader will not be involved for decision making at this stage to solve conflict or to fix a defect.
- 5- Adjourning: this is the final stage where the team in the end of the project and they will be allocated to different teams and other projects, where they start to go through the same stages again with different direction. It is important for the team leader at this stage to celebrate the success of the team at the end of the project and to reward their performance.

Linda (2001) also pointed out that when teams go through these stages, the move from attentiveness, into conflict and then into avoiding conflict, and there are some steps that will help in improving the performance such as improving communication and adapt the two way communication between team members and the team leader and solving conflict and turn it to a useful discussion.

3.10 Translating needs and expectations to specifications in different sectors

Customers love companies that treat them the way they want to be treated, Leland and Biley (2006) shared a research results which confirms that customers will spend up 10% for the same product but with better service, customers will inform from 9 to 12 people when they get good service and they will tell 20 people when they are not treated in the way they want to be treated.

Customer service is the organization ability to supply their customers' needs and expectations (Denove and Power IV, 2006) and as Lock (1996) explains that customer project specification is the initial inquiries from the customer which could be taken in different formats and tools and then turning these specification to objectives and milestones to be achieved.

Business owners and managers are very interested to understand the financial value of the customers with our actually implementing the best practice to increase this value (Xueming, Christian and Jan, 2010). Therefore to achieve the best possible profit companies should move from basic service to best service as explained by Price and Jaffe (2008) that by applying root

cause improvements, creating engaging self-service, practicing preventive maintenance, make many communication channels available to the customer to connect the company, taking the ownership of the actions across the company, listen and act and then deliver the best service experience (Figure 1).

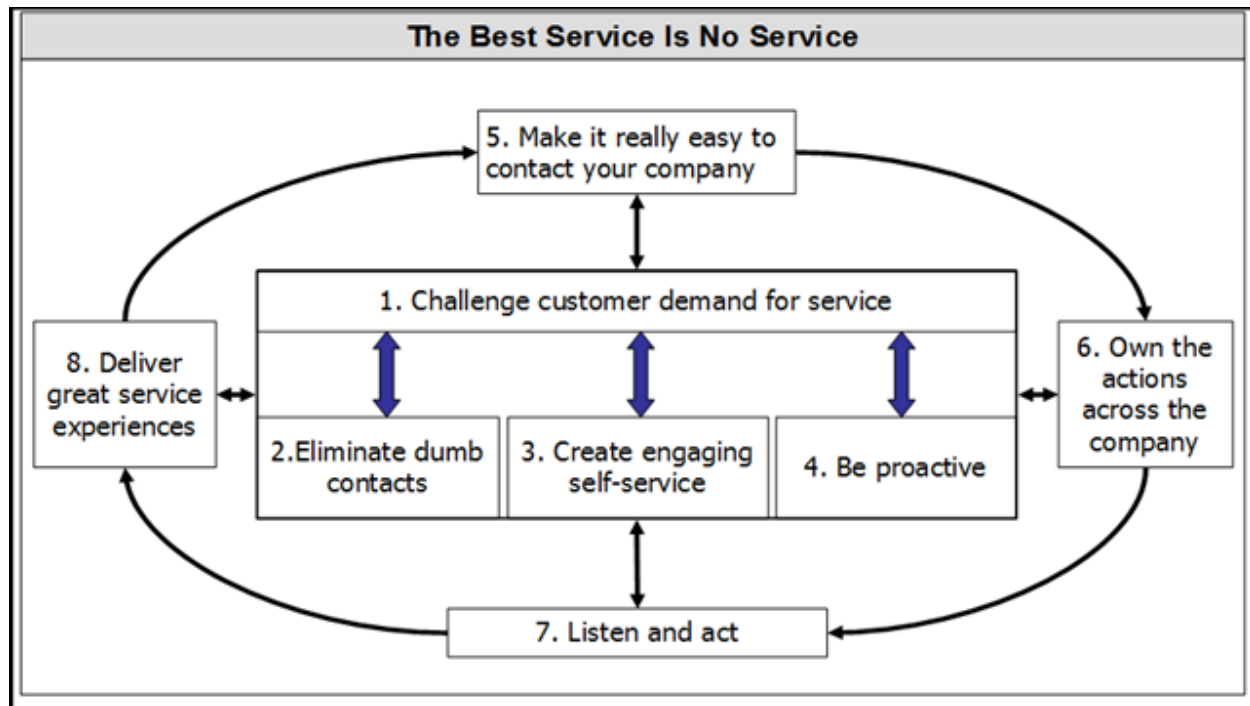


Figure19: the best service is no service (Price and Jaffe, 2008)

3.10.1 Difference between service design and product design

Chakrabarty, Whitten and` Green (2007) stated that “Service Quality can be defined as the conformance to customer requirements in the delivery of a service”

According to Chakrabarty, Whitten and Green (2007) that a national survey about the quality of outsourced projects, confirms that service quality and relationship quality are positively related to each other and they both impact on customer satisfaction

3.10.2 Sectors needs and expectations

Most of the government buddies provide service and

4 Chapter 3: Research Design and Methodology

4.1 Research Methodology

Frey et al. (1991) define research methodology as a strategic way and method to collect an evidence to test Hypotheses and theories and to building them by collecting the data from the concerned resources. Moreover there are different methods that can be used in an academic research or psychological research, these methods commonly uses questionnaires studies, interviews, and experiments. These methods can be a collection of qualitative data or quantitative data (Brace, Kemp and Snelgar, 2009)

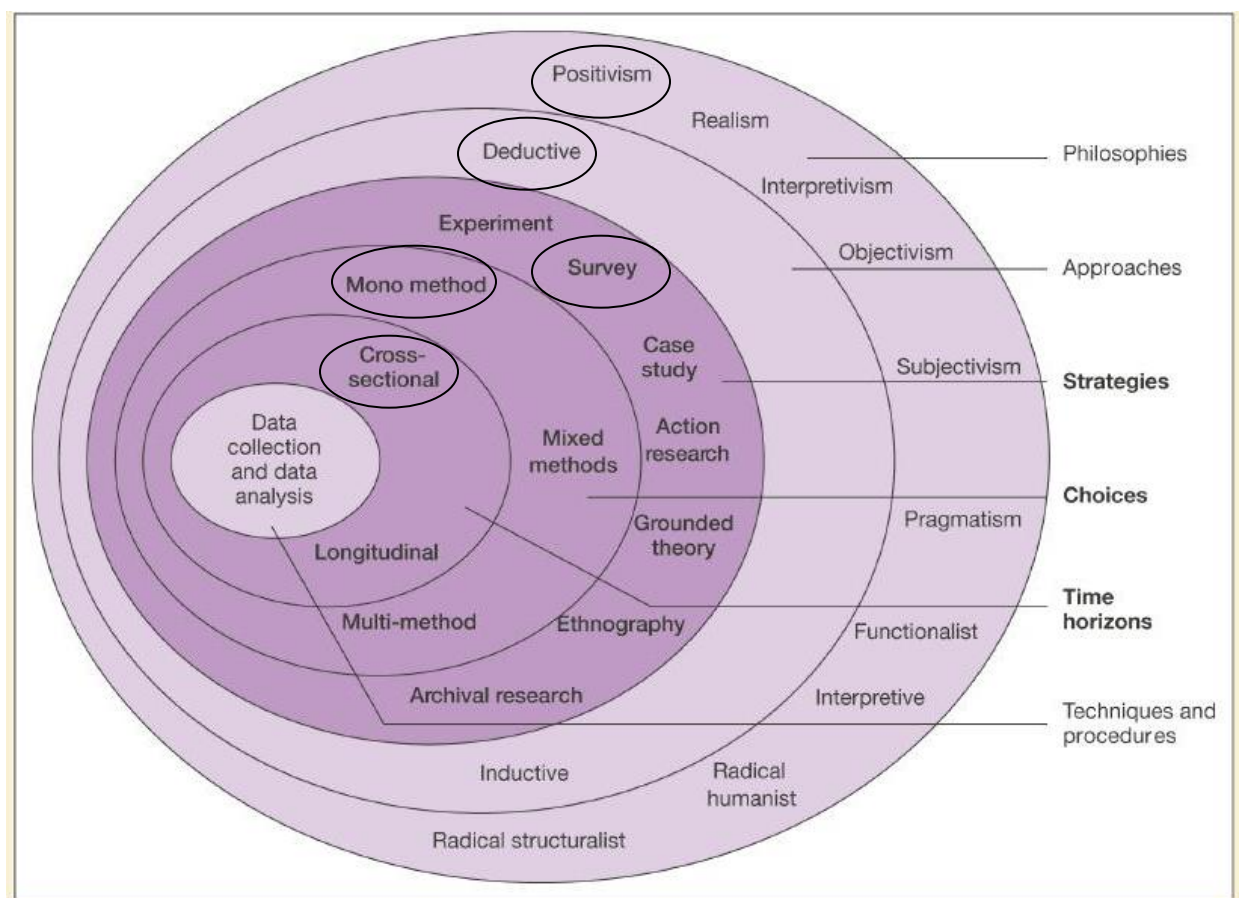


Figure 20: The Research 'Onion' (Saunders, Lewis and Thornhill (2007), p. 102)

With the selections identified for this research

4.1.1 Research Philosophy

According to Saunders, Lewis and Thornhill (2007) that research methodology is how the knowledge is developed and how theses knowledge and the adopted philosophy will be influenced by particular consideration and it is the first step for adopting a research study.

There are three different views of research philosophy which are positivism, Realism and Interpretive. The positivism research philosophy is adaptation of the natural scientist and it is about generating research strategy based on existing theory to develop hypotheses, and then testing these hypotheses and confirming them, while the realism research philosophy relates to scientific enquiry, and there are two types of the realism; Direct realism which is what you see is what you get, and the other one is critical realism which about that what people experience are sensations and then finally the interpretivism which is about understanding the differences between humans in our role as social actors (Saunders, Lewis and Thornhill, 2007).

This Study follows a positivist approach. In this study the Hypotheses were identified and developed based on existing theories and literatures and then facts and information were collected from the concerned recourses to test the hypotheses.

4.1.2 Research Approaches

There are two main research approaches; deductive and inductive. In the deductive research approach the researchers start by identifying and developing the theory or the Hypotheses and then design a research strategy to test these Hypotheses, while in the inductive research approach it is the opposite way where the data will be collected first to develop a theory based on the analysis of these data (Schadewitz and Jachna, 2007) and (Saunders, Lewis and Thornhill, 2007). In Figure 21 a full explanation about the differences between both approaches.

Major differences between deductive and inductive approaches to research	
<i>Deduction emphasises</i>	<i>Induction emphasises</i>
■ scientific principles ■ moving from theory to data ■ the need to explain causal relationships between variables ■ the collection of quantitative data ■ the application of controls to ensure validity of data ■ the operationalisation of concepts to ensure clarity of definition ■ a highly structured approach ■ researcher independence of what is being researched ■ the necessity to select samples of sufficient size in order to generalise conclusions	■ gaining an understanding of the meanings humans attach to events ■ a close understanding of the research context ■ the collection of qualitative data ■ a more flexible structure to permit changes of research emphasis as the research progresses ■ a realisation that the researcher is part of the research process ■ less concern with the need to generalise

Figure 21: Major differences between deductive and inductive approaches to research (Saunders, Lewis and Thornhill, 2007, P.120).

This study follows a deduction approach where the Hypotheses developed based on an existing methodologies and literatures and then a survey where conducted and the quantitative data were analyzed to test the Hypotheses, moreover that these steps were done independently with a sufficient sample size of surveys in a structured systematic approach.

4.1.3 Research Strategy

As shown in Figure 20 that there are many research strategy such as experiment, survey, case study, action research, grounded theory, ethnography and archival research. This study uses Survey as a strategy to collect the data for testing the Hypotheses. Moreover, according to Brodens and Abbott (2011) that survey is widely used research technique and it used usually to evaluate specific attitude, behavior or perception. This confirms that the field survey is the suitable way to test the study Hypotheses as the strategy is to measure customer satisfaction and perception.

Saunders, Lewis and Thornhill (2007) also confirm that surveys is usually associated with the deductive approach and it is a very common strategy in the business and management research, and it allows the researchers to collect large sample size of data in an economic way.

In this study the surveys were conducted by doing face-to-face structured interviews at the service location and that is directly after the customers finish their experience journey of applying to a service or getting a product, while in some service location there were few customers only so the customers contact details were collected from the service provider and the surveys were conducted over the phone with these customers. Moreover, the face-to-face interviews allows the researchers to clarify the ambiguity for the interviewee and give the ability to have less error rate and high confidence level of the collected data (Leedy and Ormrod, 2001)

4.1.4 Time Horizon

There are two types of time horizon for any study; the cross-sectional study and the longitudinal study. The cross sectional is usually used when the time is a constraint in projects and when the study should be done in a particular time, while the longitudinal is used when the study aims to be done through long period to observe people or events (Saunders, Lewis and Thornhill, 2007) and the cross sectional is usually used for the academic courses where time is an issue, and it used usually to measure how factors are related for different organization when the survey should be conducted in a short period of time (Adams and Schvaneveldt, 1991)

This study follows the cross-sectional way, because the aim is to measure the customer satisfaction and the efficiency of implementing quality tools in the service sector by conducting a surveys with customers right after they finish applying for service or product within a short period of time, therefore the cross-sectional was the most suitable way for collecting the required data to test the Hypotheses of this study.

4.1.5 Data Collection Technique and Process

As shown in figure 20 that this study follows the positivism technique in conducting the research and the positivism technique should go through steps starting by developing the Hypotheses based on an existing methodologies, theories and literatures and then collecting the data and analyze it to test the developed methodologies (Saunders, Lewis and Thornhill, 2007).

Brodens and Abbott (2011) identified and draw the research process as shown in Figure 22, this study also followed the same processes. The study started by identifying the research objectives and then developing the Hypotheses based on and existing theories, methodologies and literature. After that the suitable research design and philosophy were selected with selecting concerned industry from the service sector and then a random sample were taken from each service provider right after they finish applying for the service with using the face-to-face and telephone interviews with the customers using a structured questionnaires which aims to collect the required data to test the Hypotheses, after that the survey was piloted on a few people and then the actual survey data were collected and analyzed to right the results and the recommendations.

The researcher works in research organizations, therefore the collected data were collected by the organization for different projects and the developed survey matches the requirement of testing the hypotheses, therefore the researcher was able to get an authorization to use the data without mentioning any organization name, moreover, the organization researchers conduct these data by interviewing the customers face-to-face or over the phone.

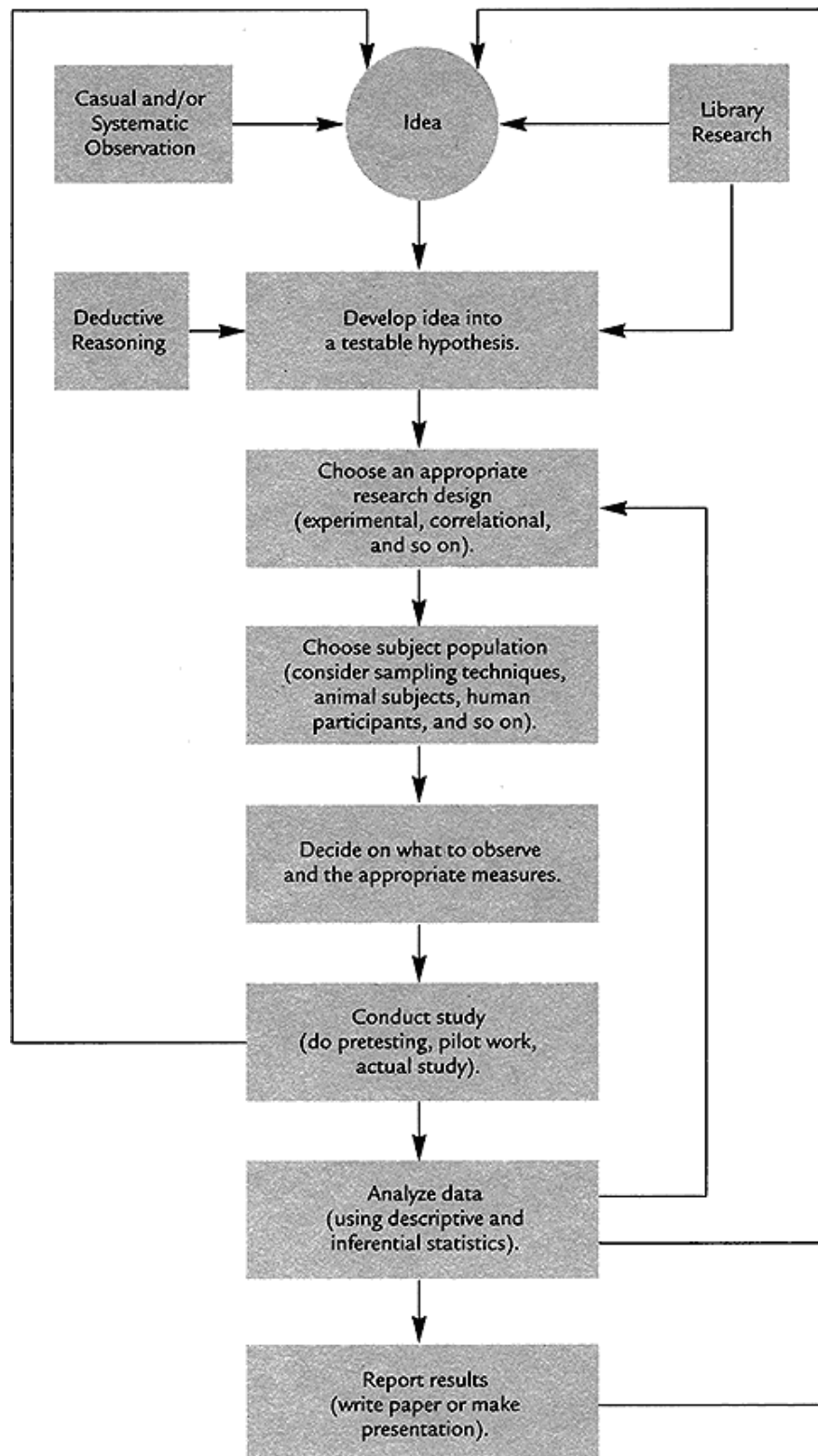


Figure 22: The research Process (Brodens and Abbott, 2011, P.27)

4.2 Conceptual Framework

This research objective and Hypotheses are presented through the literature review as shown in the previous chapter (chapter 2). Figure 23 shows the research Hypotheses and explain what the research will be testing in a graphical representation. Hypotheses are explained in details in section 2.6, page 10.

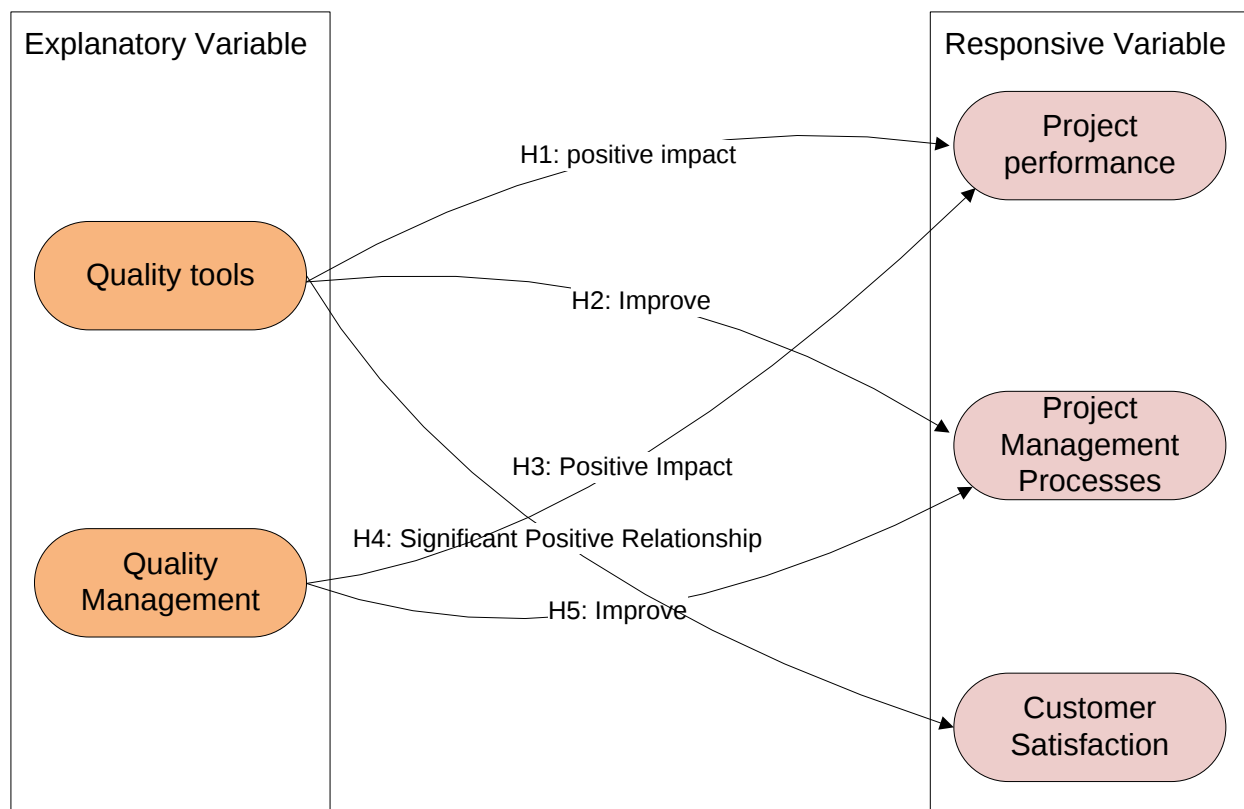


Figure 23: Graphical representation for the Research Hypotheses

The aim of this study is to find the link between the quality tools and the quality management on the project management performance and the project management processes, and how these factors could improve the customer service in the service sector.

And as explained and highlighted in the literature review that customer service in the service sector is a critical issue (Lawrence and Ishii, 2004), (Pinto and Kharbanda, 1996) and (Barkley and Saylor, 2001) and the service goes through the five main project process groups which are initiating, planning, monitoring and controlling, executing and closing (PMI, 2008) and (Denove

and Power IV, 2006), therefore this research is aimed to check the affect of implementing quality management during the project life cycle and drive the project based on customer needs and expectation on the project management performance and on the project management processes. Moreover this research will also look at the impact and the relation of the quality tools such as EFQM, ISO 9000, Total Quality Management and Quality Function Deployment on the project performance and project management processes, and how improving these two factors could improve the customer satisfaction.

The research focuses on customer driven project management. Moreover, the customer service is the main element to test the Hypotheses where the hypotheses is tested by checking on Organizations that are implanting quality management and quality tools and to see the satisfaction level of their customers or there service or product receivers on each stage of the service and on the product itself. This will give a clear picture on the link between the quality management, quality tools and project performance and project management processes.

As shown in Figure 24 that the research were based on two steps, the first step were and interviewse with the quality managers in each Organisations to determined the implemented quality management practice and the quality tools such as ISO 9000, EFQM, QFD, TQM and SURVQUAL and then the questioneres were developed to understand and to test how theses implemantations affect the project performance and project management processes groups.

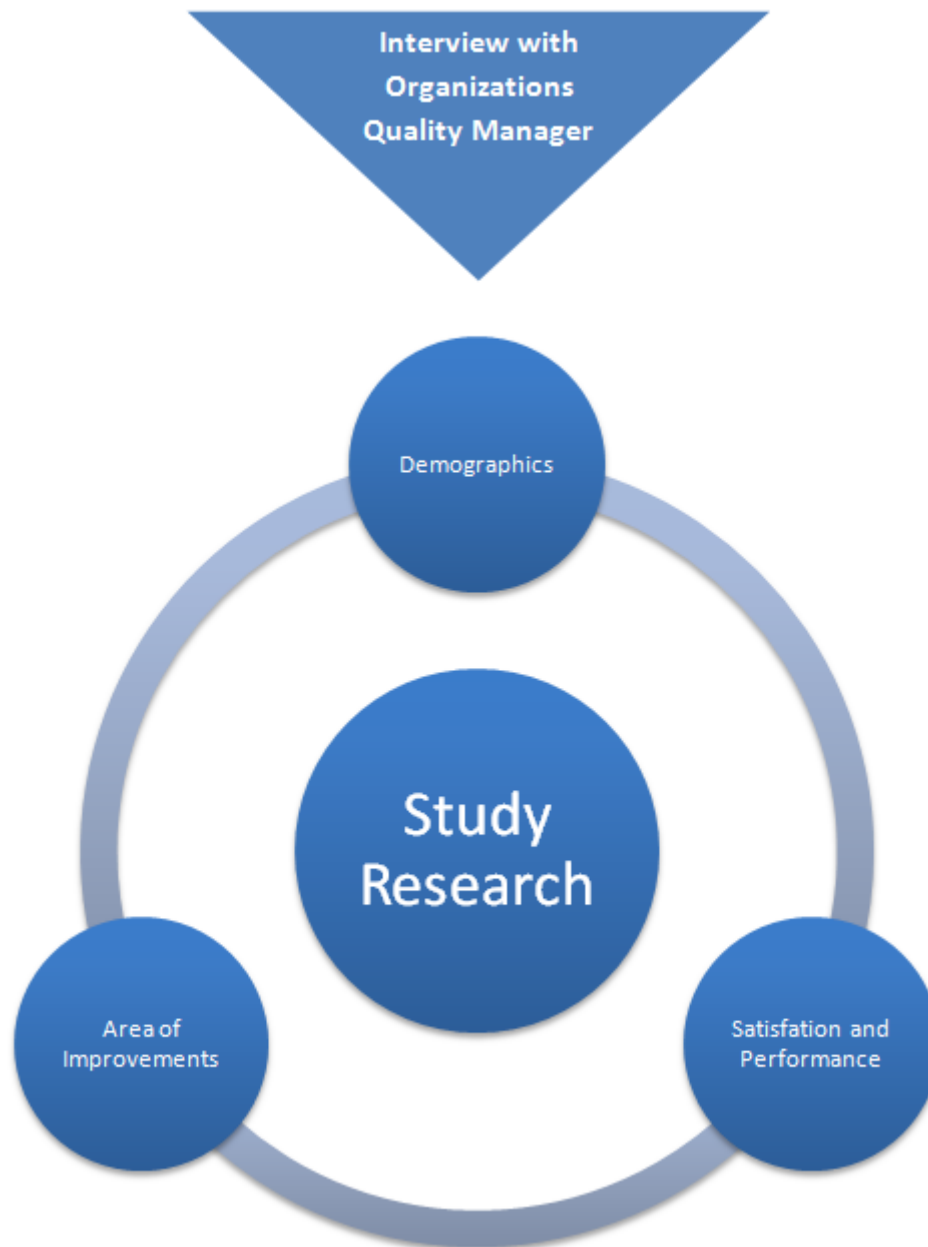


Figure 24: Study research framework

4.3 Study Instrument

The questionnaire was developed to test this study Hypotheses (check Appendix 4). The link between implementing the quality and the quality tools with the project performance and project management processes is illustrated in the questionnaire to insure that the Hypotheses is tested as shown in Figure 23:

Below is the explanation of the questionnaire (See Appendix 4) sections:

- Section 1 (**Demographic and General Question**): this section is aimed to collect the demographic data of the customers. This section includes the industry type of the organization, organization name (the Organizations were referenced with code and not the actual name), Date of the survey, Nationality, Gender and then age group. This data will give good details to classify the customers of the organization that participate in this study. All the questions are mandatory except the organization name.
- Section 2 (**Satisfaction and Performance**): This is the core of the survey which aims to test the Hypotheses directly. This section is divided to four parts as per the project management processes group (PMI, 2008) or the project life cycle and all of the questions in this section are mandatory. These parts are as follows:
 - Initiating and Planning: this contains two satisfaction questions on specification of the service or the product and on the involvement of the customer needs and requirements in producing and delivering a service/product. The options were extremely dissatisfied, dissatisfied, natural, satisfied, extremely satisfied and not applicable on Likert scale (Burns, 2000) from one to five.
 - Executing: this category is divided to two parts, the first part is about the satisfaction on the speed of delivering the service/product and the easiness of getting the service from the department or the entity, and the other part is an

agreement questions about the performance of the service centre employees and to which level they were supportive and treating the customer in respected and good manner. This parts option were satisfaction levels and agreement levels on Likert scale (Burns, 2000) from score one to five.

- Monitoring and Controlling: Under this criteria there are three satisfaction questions and 2 agreement questions, the satisfaction questions is about receiving the information that helped in getting all the service completed, the quality of the provided service and then the quality and the type of interaction from the employees with the customers and if it is aligned with the best practice and the standards which was addressed at the beginning of designing a product or service, while the agreement questions is about the competencies and the knowledge of the employees and going the extra mile in delivering the service. This parts option were satisfaction levels and agreement levels on Likert scale (Burns, 2000) from score one to five.
- Closing: This criteria is about collecting the agreement level from customers about the overall delivery of the processes and the time of delivering the service or the product and then measuring if the end product or the service (final outcome) as per their needs and expectation. This parts option were satisfaction levels and agreement levels on Likert scale from score one to five.
- At the end of the performance and the satisfaction section there is a question to collect information about the duration of getting the service done (the selected time is as per Canada service model and international customer service standard (TICSI, 2012))
- Section 3 (Area of Improvements): In this section customers are asked to determine the factors and the areas that should be improved in the organization they got service from. This section consist of two questions, the first one is a multiple choice question where the customer will select the most important area that needs improvements and related to the project management processes which are involving customers in the designing and

imitating stage of the product/service, planning the product/ service requirements, defining the scope of the product/service, delivering the service in efficient and satisfactory manner and finally Insuring that the product/service meets the customer expectations and needs, while the second item is an open end question if the customers would like to suggest to improve the services provided to them, and this question is optional.

Most of the core survey questions uses the likert scale which was developed in 1932 by Likert to be used in the research questionnaires (Burns, 2000) which consist of “ a set of items of equal value and a set of response categories constructed around a continuum of agreement/ disagreement to which subjects are asked to respond” (Sarantakos, 1998, P.89), and according to Leedy and Ormrod (2001) that Likert scale have been used for more than fifty years and it is very popular in measuring the customers satisfaction or people perception and agreement levels.

Table 5 explains the link between the questionnaire (Appendix 4) and the Hypotheses with the references to the literatures.

Table 4.1: Relation between the research questionnaire and the Hypotheses

Variable	Items Number	Reference
Satisfaction and Performance – Initiating and Planning	7.1 7.2	(Rajani, 2010), Parasuraman, Zeithaml and Berry (1988), (Juan, 2002), (Partovi, 1999) and (Barkley and Saylor, 2001)
Satisfaction and Performance – Executing	7.3 7.4 7.5 7.6	(Rajani, 2010), Parasuraman, Zeithaml and Berry (1988) and (Dearing, 2007)
Satisfaction and Performance – Monitoring and Controlling	7.7 7.8	(Rajani, 2010), (Parasuraman, Zeithaml and Berry, 1988) and

	7.9 7.10 7.11	(Dearing, 2007)
Satisfaction and Performance – Closing	7.12 7.13	(Rajani, 2010), (Parasuraman, Zeithaml and Berry, 1988), (Partovi, 1999) and (Lawrence and Ishii, 2004)
Area of Improvement- Duration of service delivery	8	(Parasuraman, Zeithaml and Berry, 1988), (EFQM, 2010) and (Lawrence and Ishii, 2004)
Area of Improvement- Which area needs improvement	9	(EFQM, 2010)
Area of Improvement- Customers Suggestions	10	

As mentioned previously that the survey consists of three areas, the first one is to collect demographic information about the interviewed customers, to help in analyzing and segmenting the data with cross tabulations. While the second one (Satisfaction and Performance) is aimed to test directly all the hypotheses from H1 to H6. Finally the last section which aims to identify the improvement areas from the customer point of view to confirm the results of section 2 and help in finding the recommendation the participated Organizations .

4.4 Pilot Questionnaire

Brodens and Abbott (2011) pointed out that pilot study is a critical stage of conducting a research and it saves money and time by providing useful information which eliminates the error in the real study, Moreover, pilot study works very well specially with the large studies that involves hundreds of surveys in order to select the best suitable method to collect the required data and to test the Hypotheses. In additional to that pilot test helps in refine the questionnaire and making

sure the respondents will not face a problem in filling or understanding it (Saunders, Lewis and Thornhill, 2007).

According to Brodens and Abbott (2011) that the pilot study help in clarifying and determining the appropriate level of the independent variable and helps in finding all the bugs or error before conducting the real study. Moreover, in the pilot study the questionnaire should be reviewed by an expert to check the suitability of the questions in order to test the Hypotheses and then testing it on a number of respondents to get the comments on the structure of the questions (Saunders, Lewis and Thornhill, 2007).

The questionnaire was reviewed by the dissertation supervisor before the pilot testing to confirm the relation between the questions and the Hypotheses with checking the references and the bases of the questionnaire from the literature review. The participants in the pilot study were from different experiences and background to insure that the questionnaire will meet the study objectives. The participants were as followed:

Participant 1: A subject Specialist (PhD in PM from BUiD, dissertation supervisor)

Participant 2: An very well know expert in customer service and works as a managing director

Participant 3: A project manager who manage implementing service quality tools in the service sector in UAE

Participant 4: An experience service quality consultant

Participant 5: An experience assessor in Dubai Quality Group

Participant 6: A Director of the research in a service quality organization

Participants 7: Few customers from the service quality sector (eight customers)

The questionnaire was send to the customers online and in word format to the experts and consultants (participant 1 to participant 7), the customers were interviewed face to face to collect the feedback and a meeting was held with each expert for more than thirty minutes to discuss the questionnaire and collect the feedback to enhance the survey. The experts suggestions and

feedback along with the customers feedback are summarized below according to each section in the survey:

Section 1: Demographic and General Questions

- At the begging of the study, the aim was to understand the effect of the quality tools and quality management on the government sector only, but the supervisor and other experts advice that it is better to cover different sector as the government sector in UAE have the same nature and environment, therefore it is much better and beneficial to see the impact of the quality tools on the project performance and project management processes in different sector and to compare between these sector. From that the selected sector for the research are Banking, Retail, Government and Hospitality (all are considered from the service sector)
- The dissertation supervisor advised to include six deferent entities in the research. Therefore, there were two banks, one organization from the retail sector, one organization from the hospitality and then three government entities, moreover the experts advised to give code to each organization and to include that as a question at the begging of the survey in order to have a clear data analysis per organization and per sector.
- The nationality were divided to only four options UAE locals, expat Arabs, Expat Asians and expat westerners, but one of the experts advises to add other option as there are some countries which doesn't fit the previous four categories.

Section 2: Satisfaction and Performance

- One of expert advises is to divide the questionnaire as per the project management processes group and should cover testing all the Hypotheses, moreover, some customers were not able to understand the questions very easily, therefore the survey language was reviewed and the questions were made in an easy language that can be understood by all levels of customers

Section 3: Area of Improvements

- In this section, a new open-end question was added to questionnaire to collect any suggestion that might enhance or help the organization in developing and delivering the

service, more over the service quality expert advices to add a question related to the waiting time to check the difference between sectors and to measure the level of the provided service.

4.5 Research sampling

The used sampling technique in this study is the cluster sampling. This technique is implemented by identifying certain department and service center and the researcher interviewed customers at the service location after they were served (see Figure 25), in some Organizations where it was difficult to find the required number of customers, the customer's details were provided to the researcher and the surveys were conducted through the phone. Moreover, Brodens and Abbott (2011) confirms that cluster sampling is the best sampling techniques if the clusters (organization or interviewee) are identified, Moreover, it saves time and cost.

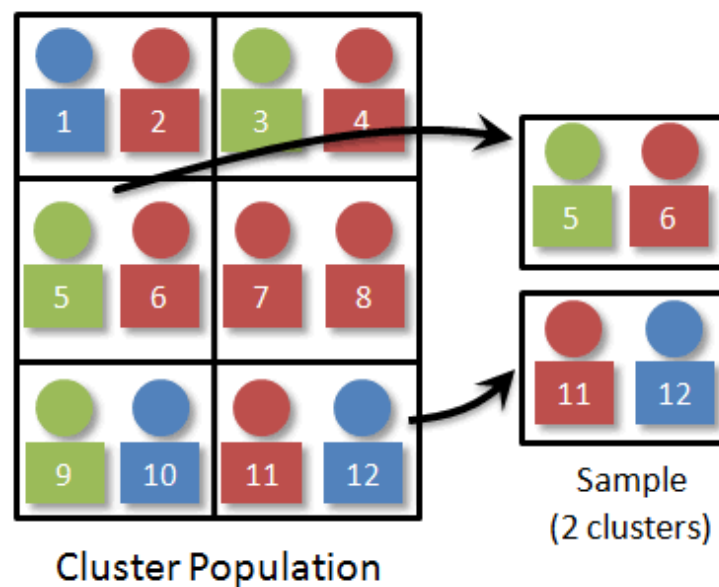


Figure 25: Simple Random Sampling

4.6 Procedure

This study target the service sector in UAE which represent 71% from the business sectors in UAE (Abdelgalil and Husasain, 2007), due to the difficulties of getting customer information or reaching customers on the service sector, the researcher selected certain Organizations in the public and in the private sector where customer can be asked on the service centers. The selected sectors were:

- Banking
- Retail
- Government
- Hospitality

From the banking sector two banks were selected, one organization from the retail sector, three government entities and one organization from the hospitality sector. The researcher is a project manager who worked with these Organizations before and was able to get access to these organization's customers.

The researcher interviewed the customers in the service center after they get served and it was a face to face short interview, where the researcher explains the question to the customer. But in some organization there were few customer at the service center location due to the nature of the provided service, therefore the researcher arranged with their organization to get accesses to the customer data base and conducted the survey with their customer on the phone.

During conducting the face-to-face interview the researcher assured to have a verity types of nationalities and ganders, to see how is the level of interaction with different languages and different cultures, and to check if the organization classify their customers and understand their needs and expectations.

According to Sarantakos (1998) that the bigger sample size of the same unit of measurement the greater is the confidence in the result and in the analyses, therefore the aimed sample size was determined as per the experts and the dissertation supervisor advice, which is 2000 in total. Please see Table 4.2 for more details

Table 4.2: Research sample size

Sector	Organization	Sample size
Banking	Banking – O1	250
	Banking – O2	250
Retail	Retail – O1	300
Government	Government – O1	300
	Government – O2	300
	Government – O3	300
Hospitality	Hospitality – O1	300
Total		2000

Three software's were used for the analysis, "Survey Moments" to enter the responses and to collect it, "Microsoft Excel" to calculate the satisfaction levels and the agreement levels, and then "SPSS" was used to do the detailed analysis. The row data was exported from the "Survey Moment" software in SPSS format and then was imported to SPSS.

4.7 Ethical Considerations

Ethical concern was a crucial part of this study. The below points were considered during the research:

- The study and the research started after getting approval from the dissertation supervisor and getting the expert opinions.
- The anonymity of the participants and the confidentiality of the their responses were maintained, while conducting the research the researchers insured that the participant names is not collected or even associated with the answers. Therefore, there were no any identification questions such as name and contact details.
- During the face-to-face quick interview or phone interview, participants were informed that the collected data is strictly confident and they were informed about the purpose of

the research, and how their responses will help in developing the organization they deal with. This encouraged them to give clear and honest feedback about the received service.

- Permission were taken from all the concerned organization to take the feedback from their customers, even some organization provided the contact details of their customers to conduct phone survey with them
- During the study, the researcher made sure that the identification information of the participated organization are not shared, and the Organizations were given code by mentioning the sector name and then “O” for organization and then the number of the organization such as Hospitality-O.

4.8 Methods of Analysis

Different analysis were involved in this research by using three software’s which are SPSS V21, Survey Moments and Microsoft Excel. The analysis was done on nominal and ordinal variables. Detailed analysis were conducted using Survey moments and Microsoft excel to. The analyses were calculating the customer satisfaction score using excel, independent t-test, reliability test using SPSS, agreement score and demographics using Survey moments.

5 Chapter 4: Questionnaire Results

5.1 Descriptive Statistics

This sections gives and overview about the respondents, about the sectors, about the participant Organizations , Nationalities, Genders and age groups.

5.1.1 Descriptive Statistics Summaries

The total respondents to the survey 2000, all of them are customers for different Organizations that belong to the service sector. Table 5.1 shows the descriptive statistics for the survey items and Table 5.2 shows the sample distribution.

Table 5.1: Survey items descriptive analysis

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation
1. Please select the sector of the department/company that served the customer?	2000	1	4	2.50	1.025
2. Please select the department/company that served the customer?	2000	1	7	4.13	1.965
3. Date of the Survey:	2000	16-JAN-2013	23-JAN-2013	20-JAN-2013	2 19:07:48.180
4. Nationality	2000	1	5	2.16	.983
5. Gender	2000	1	2	1.20	.396
6. Age group	2000	1	6	2.94	1.084
7.1 Overall, how satisfied were you with the specification of the product/service?	2000	1	5	3.65	1.194
7.2 Overall, how satisfied are you with the department/organization in taking your opening and feedback to improve their services/products?	2000	1	5	3.58	1.223
7.3 Overall, how satisfied were you with the time taken to receive the required service?	2000	1	5	3.65	1.336
7.4 Overall, how satisfied were you with the easiness of getting the service from that department?	2000	1	6	3.74	1.232
7.5 I was treated fairly by the employees of that department who assisted me with the service.	2000	1	5	3.83	1.254
7.6 The employees showed their respect while delivering the service/ transaction.	2000	1	5	3.80	1.236

7.7 I have received information that helped me regarding all I should do until getting my services completed.	2000	1	5	3.98	1.145
7.8 Overall, how satisfied were you with the quality of service provided by the employees of that department?	2000	1	5	4.02	1.159
7.9 Overall, how satisfied were you with the department staff you directly dealt with and provided the service to you?	2000	1	5	4.00	1.096
7.10 Employees were competent and knowledgeable enough to provide the requested service.	2000	1	5	3.94	1.164
7.11 Employees did their best and went the extra mile to make sure I received the proper aid and required service.	2000	1	5	4.00	1.145
7.12 I waited for a reasonable period of time in the department until I received my requested service.	2000	1	5	3.15	1.447
7.13 At the end, did you manage to get the service you needed?	2000	1	5	3.71	1.296
8. How long did you have to wait until you got served? (Minutes)	1999	1	5	1.97	.991

9. In your opinion, which of the factors that influence the department's service delivery performance needs immediate improvement and development?	2000	1	7	4.20	2.170
Valid N (listwise)	1999				

Table 5.2: Sample Distribution

		Sector			
		Banking	Retail	Government	Hospitality
		Count	Count	Count	Count
4. Nationality	UAE Local	121	46	343	44
	Expat Arab	260	146	371	56
	Expat Asian	85	67	118	103
	Expat Westerner	30	41	53	97
	Other	4	0	15	0
5. Gender	Male	442	169	778	221
	Female	58	131	122	79
6. Age group	Under 21	14	2	66	1
	21-30	179	89	402	41
	31-40	172	112	259	135
	41-50	86	54	118	90
	50-60	34	32	41	24
	+60	15	11	14	9
Organization	Banking – O1	250	0	0	0
	Banking – O2	250	0	0	0
	Retail – O1	0	300	0	0
	Government – O1	0	0	300	0
	Government – O2	0	0	300	0
	Government – O3	0	0	300	0
	Hospitality – O1	0	0	0	300

5.1.2 Sectors

Table 5.3: The survey was conducted in four sectors, Banking, Retail, Government and Hospitality. The biggest percentage of the customers were in the government sectors which represent 45% from the total number of the respondents and then the minimum sector were both the retail and the hospitality the both represent 15% each from the total sample size. Figure 5-1 shows the distribution of customers as per the sector.

Table 5.3: Participant Sectors

		Sector			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Banking	500	20.0	25.0	25.0
	Retail	300	12.0	15.0	40.0
	Government	900	35.9	45.0	85.0
	Hospitality	300	12.0	15.0	100.0
	Total	2000	79.8	100.0	
Missing	System	505	20.2		
Total		2505	100.0		

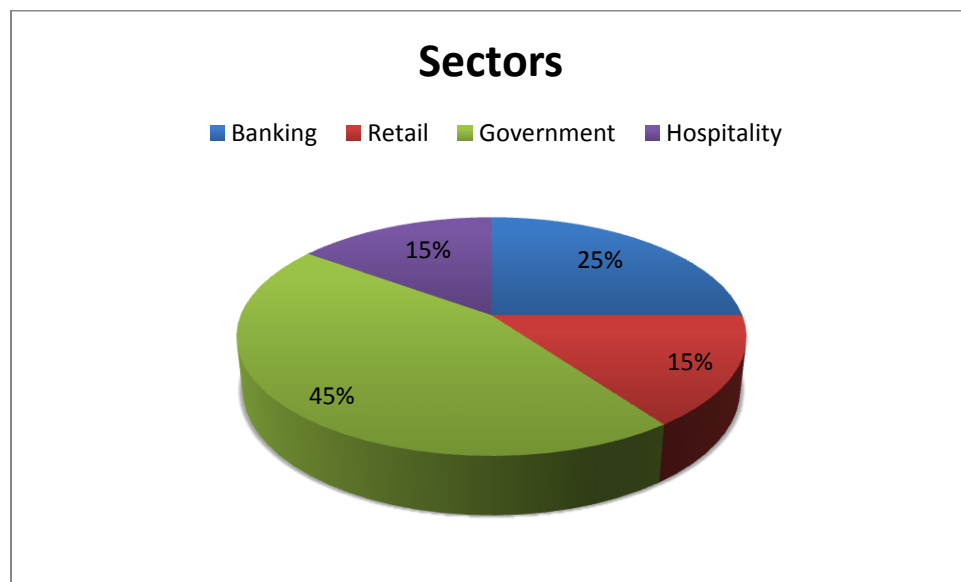


Figure 5-1: Participant Sectors

5.1.3 Participant Organizations

Table 5.4: The survey were conducted in seven deferent Organizations or entities, two from the Banking sector, one from the retail sector, three from the government sector and one from the hospitality sector. The Organizations were given a code for the confidentiality purposes.

Table 5.4: Participant Organizations

		Organization			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Banking – O1	250	10.0	12.5	12.5
	Banking – O2	250	10.0	12.5	25.0
	Retail – O1	300	12.0	15.0	40.0
	Government – O1	300	12.0	15.0	55.0
	Government – O2	300	12.0	15.0	70.0
	Government – O3	300	12.0	15.0	85.0
	Hospitality – O1	300	12.0	15.0	100.0
	Total	2000	79.8	100.0	
Missing	System	505	20.2		
Total		2505	100.0		

5.1.4 Nationalities

Table 5.5: the nationalities were grouped under five main groups as shown in Figure 5-2, The Expat Arabs represents the majority of the respondents with 41% and then the UAE locals with 22%, and that because of the big number of the participants from the government sector, the smallest percentage was for the westerners with 8.8 %. There are some other nationalities, which don't fit in the main categories such as Australian customers, and they represent only 0.8% from the sample size.

Table 5.5: Customers Nationalities

		4. Nationality			
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	UAE Local	554	22.1	27.7	27.7
	Expat Arab	833	33.3	41.7	69.4
	Expat Asian	373	14.9	18.7	88.0

	Expat Westerner	221	8.8	11.1	99.1
	Other	19	.8	1.0	100.0
	Total	2000	79.8	100.0	
Missing	System	505	20.2		
Total		2505	100.0		

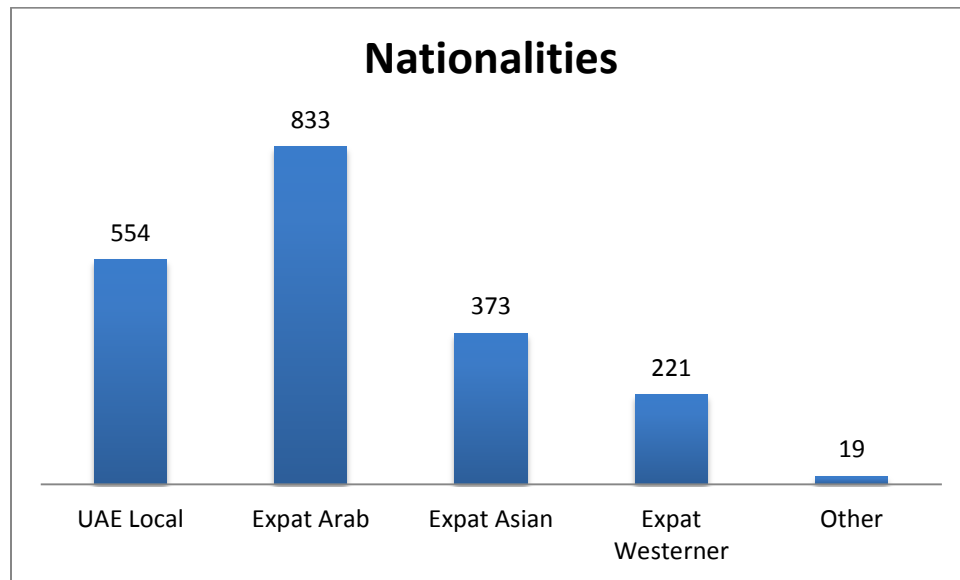


Figure 5-2: Customers Nationalities

5.1.5 Gender

Table 5.6: The majority of the respondents are males, as shown in Figure 5-3 that they represent 80% (Figure 5-3) and that because of the nature of the service center where the survey were conducted. As shown in Table 5.5 that the majority of the government sector customers are males and as shown in Figure 5-1 that the government sector represent 45% of the sample size, which explains the high percentage of males.

Table 5.6: Customers Gender

5. Gender					
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	1610	64.3	80.5	80.5
	Female	390	15.6	19.5	100.0
	Total	2000	79.8	100.0	
Missing	System	505	20.2		

Total	2505	100.0		
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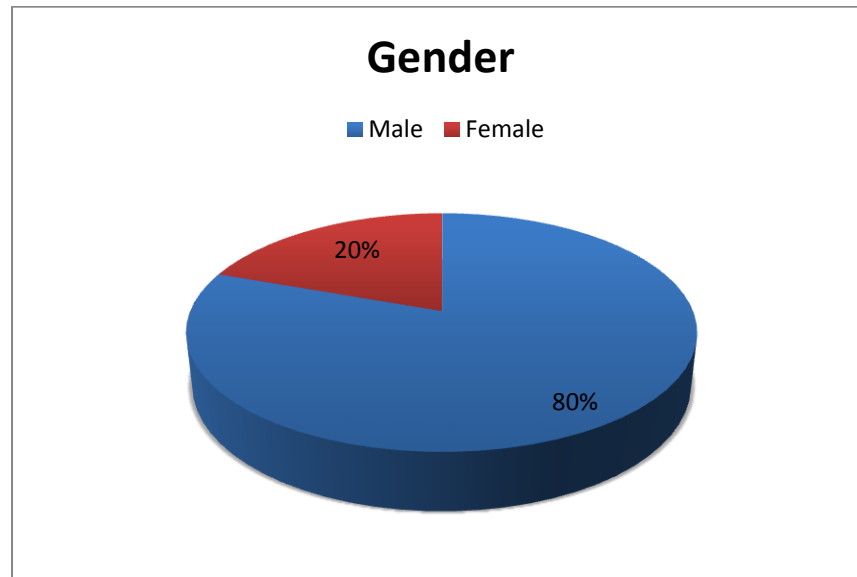


Figure 5-3: Customers Gender

Table 5.7: Cross-tabulation between Sector and Gender

Count				
		5. Gender		Total
		Male	Female	
Sector	Banking	442	58	500
	Retail	169	131	300
	Government	778	122	900
	Hospitality	221	79	300
Total		1610	390	2000

5.1.6 Age Group

Table 5.8: The majority of customer's age is between 21 and 40 years, which represent 55.5 % of the interviewee, the lowest percentage was the customers above 60 and that represent 2% only of the customers.

Table 5.8: Customers Age Groups

6. Age group

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Under 21	83	3.3	4.2	4.2
	21-30	711	28.4	35.6	39.7
	31-40	678	27.1	33.9	73.6
	41-50	348	13.9	17.4	91.0
	50-60	131	5.2	6.6	97.6
	+60	49	2.0	2.5	100.0
	Total	2000	79.8	100.0	
Missing	System	505	20.2		
Total		2505	100.0		

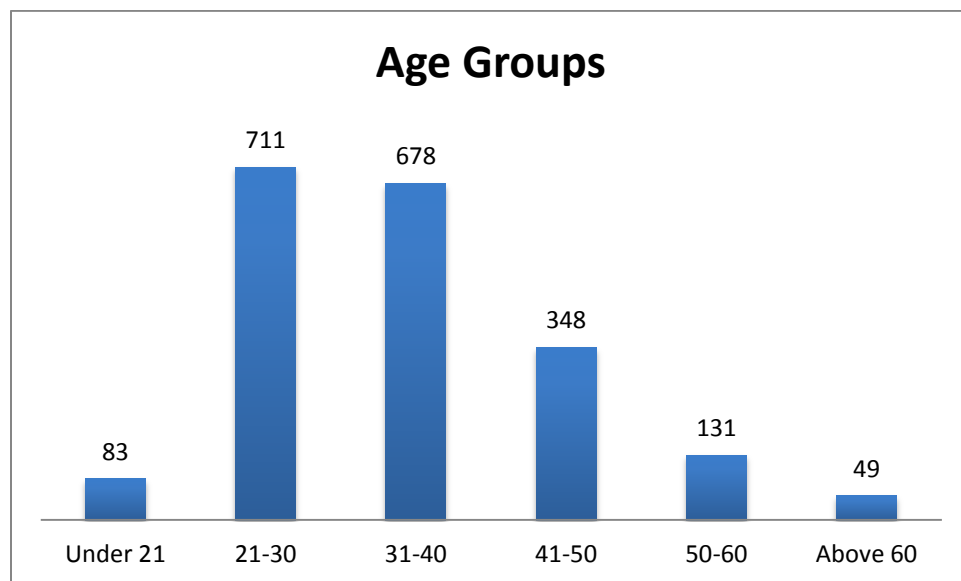


Figure 5-4: Customers Age Groups

5.2 Quality Manager's Interviews results

This research aims to understand the link between implementing quality management and quality tools and the project management processes and project performance; therefore, it was very important to understand exactly what kind of quality management practice or quality management tools, which are used by the participant's Organizations in order to test the Hypotheses.

Table 5.9 Gives and an overview about the implanted quality management tools and practice in each organization.

Table 5.9: Implemented Quality Tools in the participant Organizations

#	Organization	Quality Tool
1	Banking – O1	ISO, EFQM, TQM
2	Banking – O2	ISO, SURVQUAL
3	Retail – O1	QFD
4	Government – O1	EFQM, ISO, SURQUAL
5	Government – O2	ISO
6	Government – O3	
7	Hospitality – O1	SURVQUAL

5.3 Inferential Statistics

5.3.1 Reliability Testing

Reliability test was done using Crobach's Alpha (details are shown in Appendix 7). Table 5.10 shows that the test was done to all of the responses (N=2000) and only one case is excluded which has missing data. The Cronbach's alpha for the scale is 0.597 (Table 5.11)

Table 5.10: Case Processing Summary

	N	%
Valid	1999	100.0
Cases Excluded ^a	1	.1
Total	2000	100.0

a. Listwise deletion based on all variables in the procedure.

Table 5.11: Overall Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.597	.606	20

Table 5.12: Cronbach Alpha value for all process Groups

Survey Items	Process Group	Cronbach Alpha
7.1	Initiating and Planning	0.3
7.2		
7.3	Executing	0.57
7.4		
7.5		
7.6		
7.7	Monitoring and Controlling	0.698
7.8		
7.9		
7.10		
7.11	Closing	0.171
7.12		
7.13		

Table 5.13 shows the descriptive statistics' if the item deleted, most of the satisfaction and agreement items (from 7.1 to 7.13) are a consistent part of the scale, except item 7.2 where the correlation is very low (0.99 only)

Table 5.13: Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Item 1 (Sector)	65.63	71.405	.155	.949	.590
Item 2 (Organization)	64.01	74.159	-.085	.959	.648
Item 4 (Nationality)	65.97	73.069	.065	.050	.600
Item 5 (Gender)	66.94	76.275	-.187	.079	.608
Item 6 (Age group)	65.19	72.624	.072	.044	.600

Item 7.1	64.48	71.465	.111	.285	.596
Item 7.2	64.56	71.592	.099	.317	.598
Item 7.3	64.48	65.883	.344	.279	.563
Item 7.4	64.39	67.233	.316	.226	.569
Item 7.5	64.30	65.738	.385	.274	.559
Item 7.6	64.34	65.336	.414	.280	.555
Item 7.7	64.15	66.126	.414	.278	.557
Item 7.8	64.11	66.813	.368	.226	.563
Item 7.9	64.13	66.674	.406	.287	.560
Item 7.10	64.19	65.154	.459	.319	.551
Item 7.11	64.13	66.771	.377	.267	.562
Item 7.12	64.98	65.780	.309	.178	.567
Item 7.13	64.42	66.319	.338	.205	.565
Item 8 (waiting time)	66.16	76.711	-.147	.258	.622
Item 9 (Area of Improvement)	63.94	69.801	.017	.234	.635

5.3.2 Satisfaction and Agreement results

Measuring the customer's satisfaction and agreement scores for the project management processes groups are aimed to study the all of the developed Hypotheses. The result will be based on linking the satisfaction and agreement score and the implemented quality management practices and quality tools, which are QFD, TQM, EFQM, ISO 9000 and SURVQUAL. For example this test will study if the organization that implements quality tools has a good satisfaction and agreement score, and to see if there is a significant relationship between these tools and the customer satisfaction. This test is aimed to study the entire developed Hypotheses (H1, H2, H3, H4 and H5). For quick reference, Table 5.14 lists the entire Hypotheses.

Table 5.14: Study Hypotheses

Hypothesis 1 (H₁)	There is positive impact for the quality tool (QFD, TQM, EFQM, ISO 9000 and SURVQUAL) on the project performance.
Hypothesis 2 (H₂)	Implementing quality tools (QFD, TQM, EFQM, ISO 9000 and SURVQUAL) in Organizations improves the project management processes.
Hypothesis 3 (H₃)	There is positive impact for the quality management on the project performance.

Hypothesis 4 (H₄)	There is statistically significant positive relationship between implementing of the quality tools (QFD, TQM, EFQM, ISO 9000 and SURVQUAL) and the customer satisfaction about the services and products in the service sector.
Hypothesis 5 (H₅)	The implementation of the quality management improves the project management process.

The satisfaction and agreement questions have five options starts from extremely dissatisfied, disagree to extremely satisfied, or agree, and the values starts from one to five on the Likert scale (Burns, 2000). The followed ways to calculate the satisfaction or agreement overall score were used by the Canadian Service Center and was developed by Schmidt and Strickland (1998). The calculation is done as per the following: Total for each option = Count (number of respondents for the same option)* Score, then the overall satisfaction calculation will be the $\text{Sum}(\text{Total})/(\text{highest score} * \text{Total Number of Respondents})$.

Table 5.15: Customers were satisfied the most about the specification of product/service in Government – O1 and Banking – O1 Organizations and they were dissatisfied the most with the Government O2 entity.

Table 5.15: Item 7.1 satisfaction score

Organizations	7.1 Overall, how satisfied were you with the specification of the product/service?					Overall Satisfaction
	Extremely Dissatisfied	Dissatisfied	Neutral	Satisfied	Extremely Satisfied	
Banking – O1	0	9	12	59	170	89%
Banking – O2	24	45	78	83	20	53%
Retail – O1	8	40	25	94	133	75%
Government – O1	0	11	21	61	207	89%
Government – O2	32	51	99	98	20	52%
Government – O3	29	55	92	100	24	53%
Hospitality –	22	48	98	111	21	55%

O1						
Total	115	259	425	606	595	

Table 5.16: Customers were also satisfied the most about considering there feedback to improve the services/product in Banking – O1 and Government-O1, and there were dissatisfied with the Government –O3 organization.

Table 5.16: Item 7.2 satisfaction score

Organizations	7.2 Overall, how satisfied are you with the department/organization in taking your opening and feedback to improve their services/products?					Overall Satisfaction
	Extremely Dissatisfied	Dissatisfied	Neutral	Satisfied	Extremely Satisfied	
Banking – O1	0	9	13	48	180	90%
Banking – O2	16	48	77	89	20	55%
Retail – O1	8	49	29	94	120	72%
Government – O1	0	16	26	48	210	88%
Government – O2	15	64	93	115	13	54%
Government – O3	42	109	66	58	25	43%
Hospitality – O1	22	64	99	101	14	52%
Total	103	359	403	553	582	

Table 5.17: Customers were also satisfied the most about considering there feedback to improve the services/product in Banking – O1 and Government-O1, and there were dissatisfied with the Retail-O1 organization.

Table 5.17: Item 7.3 satisfaction score

Organizations	7.3 Overall, how satisfied were you with the time taken to receive the required service?					Overall Satisfaction
	Extremely Dissatisfied	Dissatisfied	Neutral	Satisfied	Extremely Satisfied	
Banking – O1	0	7	26	67	150	86%
Banking – O2	6	36	24	67	117	75%
Retail – O1	42	126	78	43	11	38%
Government – O1	0	6	33	79	182	86%
Government – O2	2	50	46	91	111	72%
Government –	85	105	16	28	66	40%

O3						
Hospitality – O1	5	55	43	83	114	71%
Total	140	385	266	458	751	

Table 5.18: Customers were also satisfied the most about considering there feedback to improve the services/product in Banking – O1 and Government-O1, and there were dissatisfied with the Retail-O1 organization.

Table 5.18: Item 7.4 satisfaction score

Organizations	7.4 Overall, how satisfied were you with the easiness of getting the service from that department?					Overall Satisfaction
	Extremely Dissatisfied	Dissatisfied	Neutral	Satisfied	Extremely Satisfied	
Banking – O1	0	6	21	69	154	87%
Banking – O2	6	31	25	75	113	76%
Retail – O1	52	107	68	58	15	40%
Government – O1	0	7	23	84	186	87%
Government – O2	9	58	38	84	111	69%
Government – O3	9	100	54	66	71	58%
Hospitality – O1	0	56	64	108	72	66%
Total	76	365	293	544	722	

Table 5.19: Customers were also satisfied the most about considering there feedback to improve the services/product in Banking – O1 and Government-O1, and there were dissatisfied with the Retail-O1 organization.

Table 5.19: Item 7.5 agreement score

Organizations	7.5 I was treated fairly by the employees of that department who assisted me with the service.					Overall Agreement
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Banking – O1	0	8	16	59	167	89%
Banking – O2	6	33	28	75	108	75%
Retail – O1	52	121	81	40	6	36%
Government – O1	16	26	20	57	181	80%
Government –	6	46	35	96	117	73%

O2						
Government – O3	9	42	27	89	133	75%
Hospitality – O1	8	38	41	101	112	73%
Total	97	314	248	517	824	

Table 5.20: Customers were also satisfied the most about considering there feedback to improve the services/product in Banking – O1 and Government-O1, and there were dissatisfied with the Retail-O1 organization.

Table 5.20: Item 7.6 agreement score

Organizations	7.6 The employees showed their respect while delivering the service/ transaction.					Overall Agreement
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Banking – O1	0	5	13	60	172	90%
Banking – O2	5	44	38	82	81	69%
Retail – O1	57	97	60	65	21	41%
Government – O1	11	23	19	66	181	82%
Government – O2	4	47	55	92	102	70%
Government – O3	16	60	47	96	81	64%
Hospitality – O1	3	36	29	105	127	76%
Total	96	312	261	566	765	

Table 5.21: Customers were also satisfied the most about considering there feedback to improve the services/product in Banking – O1 and Government-O1, and there were dissatisfied with the Retail-O1 organization.

Table 5.21: Item 7.7 satisfaction score

Organizations	7.7 I have received information that helped me regarding all I should do until getting my services completed.					Overall Satisfaction
	Extremely Dissatisfied	Dissatisfied	Neutral	Satisfied	Extremely Satisfied	
Banking – O1	0	10	6	56	178	90%
Banking – O2	0	28	10	109	103	79%
Retail – O1	37	119	96	45	3	38%
Government – O1	0	7	6	65	222	92%

Government – O2	0	38	16	131	115	77%
Government – O3	8	44	14	114	120	75%
Hospitality – O1	0	51	20	111	118	75%
Total	45	297	168	631	859	

Table 5.22: Customers were also satisfied the most about considering there feedback to improve the services/product in Banking – O1 and Government-O1, and there were dissatisfied with the Retail-O1 organization.

Table 5.22: Item 7.8 satisfaction score

Organizations	7.8 Overall, how satisfied were you with the quality of service provided by the employees of that department?					Overall Satisfaction
	Extremely Dissatisfied	Dissatisfied	Neutral	Satisfied	Extremely Satisfied	
Banking – O1	0	16	12	56	166	87%
Banking – O2	0	23	8	115	104	80%
Retail – O1	42	103	58	71	26	45%
Government – O1	0	19	11	61	209	88%
Government – O2	0	26	5	124	145	82%
Government – O3	20	50	18	104	108	69%
Hospitality – O1	0	39	13	108	140	79%
Total	62	276	125	639	898	

Table 5.23: Customers were also satisfied the most about considering there feedback to improve the services/product in Banking – O1 and Government-O1, and there were dissatisfied with the Retail-O1 organization.

Table 5.23: Item 7.9 satisfaction score

	7.9 Overall, how satisfied were you with the department staff you directly dealt with and provided the service to you?					Overall Satisfaction
	Extremely Dissatisfied	Dissatisfied	Neutral	Satisfied	Extremely Satisfied	
Banking – O1	0	2	10	79	159	90%
Banking – O2	0	24	8	123	95	79%
Retail – O1	51	111	79	49	10	38%

Government – O1	0	1	14	121	164	87%
Government – O2	0	25	7	142	126	81%
Government – O3	13	38	23	124	102	72%
Hospitality – O1	0	24	2	148	126	81%
Total	64	225	143	786	782	

Table 5.24: Customers were also satisfied the most about considering there feedback to improve the services/product in Banking – O1 and Government-O1, and there were dissatisfied with the Retail-O1 organization.

Table 5.24: Item 7.10 agreement score

Organizations	7.10 Employees were competent and knowledgeable enough to provide the requested service.					Overall Agreement
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Banking – O1	0	3	13	70	164	90%
Banking – O2	0	24	9	108	109	80%
Retail – O1	58	114	62	56	10	37%
Government – O1	0	6	11	94	189	89%
Government – O2	0	21	7	165	107	80%
Government – O3	32	61	23	95	89	62%
Hospitality – O1	0	19	6	162	113	81%
Total	90	248	131	750	781	

Table 5.25: Customers were also satisfied the most about considering there feedback to improve the services/product in Banking – O1 and Government-O1, and there were dissatisfied with the Retail-O1 organization.

Table 5.25: Item 7.11 agreement score

Organizations	7.11 Employees did their best and went the extra mile to make sure I received the proper aid and required service.					Overall Agreement
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Banking – O1	0	3	8	81	158	89%
Banking – O2	0	15	4	109	122	84%

Retail – O1	45	92	59	72	32	46%
Government – O1	7	23	19	88	163	81%
Government – O2	0	25	8	146	121	80%
Government – O3	30	49	23	83	115	67%
Hospitality – O1	0	20	12	139	129	81%
Total	82	227	133	718	840	

Table 5.26: Customers were also satisfied the most about considering there feedback to improve the services/product in Banking – O1 and Government-O1, and there were dissatisfied with the Retail-O1 organization.

Table 5.26: Item 7.12 agreement score

	7.12 I waited for a reasonable period of time in the department until I received my requested service.					Overall Agreement
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Banking – O1	14	28	10	44	154	80%
Banking – O2	50	73	31	55	41	46%
Retail – O1	57	102	75	53	13	39%
Government – O1	21	55	19	61	144	71%
Government – O2	68	94	41	53	44	43%
Government – O3	65	97	49	49	40	42%
Hospitality – O1	39	62	24	99	76	59%
Total	314	511	249	414	512	

Table 5.27: Customers were also satisfied the most about considering there feedback to improve the services/product in Banking – O1 and Government-O1, and there were dissatisfied with the Retail-O1 organization.

Table 5.27: Item 7.13 agreement score

Organizations	7.13 At the end, did you manage to get the service you needed?					Overall Agreement
	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	
Banking – O1	7	14	19	62	148	83%
Banking – O2	15	37	11	107	80	70%

Retail – O1	67	107	61	57	8	36%
Government – O1	15	28	27	73	157	77%
Government – O2	12	38	11	121	118	75%
Government – O3	34	56	19	109	82	62%
Hospitality – O1	10	30	9	160	91	74%
Total	160	310	157	689	684	

Table 5.28: This table represents the conclusion of the satisfaction and agreement score for each organization divided by the project management process groups, as shown in Table 5 that the survey items in the performance and agreement section are distributed as per the project management process group, therefore the below table represent the overall satisfaction and agreement score of these items together.

From Table 5.20 we can see that the satisfaction were high in the initiating and planning phase for Both Banking –O1 and Government –O1 while customers were dissatisfied about the same phase in Government-O3. In the executing phase customer were satisfied the most with Banking-O1 and they were dissatisfied the most with the Retail-O1 organization, while it is the same with monitoring and controlling and closing process group.

Table 5.28: Organizations overall satisfaction and agreement score

	Overall Satisfaction and Agreement Score				
	Initiating and Planning	Executing	Monitoring and Controlling	Closing	Overall score
Banking – O1	89%	88%	89%	81%	87%
Banking – O2	54%	74%	80%	58%	67%
Retail – O1	74%	39%	41%	37%	48%
Government – O1	88%	84%	88%	74%	83%
Government – O2	53%	71%	80%	59%	66%
Government – O3	48%	59%	69%	52%	57%
Hospitality – O1	53%	71%	79%	67%	68%
Overall score	66%	69%	75%	61%	68%

Table 5.29: Banking sector gained the highest satisfaction and agreement score, the Government, then hospitality and finally the retail sector. Moreover, the overall satisfaction and agreement score for all sector and all project management process groups is 68%.

Table 5.29: Sectors overall satisfaction and agreement score

	Overall Satisfaction and Agreement Score				
Sector	Initiating and Planning	Executing	Monitoring and Controlling	Closing	Overall score
Banking	72%	81%	85%	70%	77%
Retail	74%	39%	41%	37%	48%
Government	63%	71%	79%	62%	69%
Hospitality	53%	71%	79%	67%	68%
Overall score	66%	69%	75%	61%	68%

5.3.3 Area of Improvements Analysis

Item 9 in the survey (Appendix 4) is a question to know which area needs to be improved as per the customer perception, Table 5.30 shows that 41% customers in Banking - O1 (which implements ISO, EFQM, TQM) wants' the bank to improve the end products (closing phase), while 42% of them thinks that the bank is doing great job from all the aspects. In Banking - O2 customers mostly wants' improvements in Initiating and Planning phase and they want to be involved in the product designing stage (this organization implements ISO and SURVQUAL). In Retail - O1 customers think that the organization needs to improve the way they execute delivering the product and monitoring it. Government – O1 is almost like Banking O1 and the implemented quality tools is the same. While in Government – O2 customers looking forward for improvements in planning the products requirements and involving them in the designing phase of the service. In Government – O3 customers almost wants improvements in all the aspects, as this organization does not implement any quality tool or quality management practice. And finally Hospitality – O1 customers wants to improve their involvement in designing the service based on their expectation and needs. These test is to study the Hypotheses H1, H2, H3, H4 and H5.

Table 5.30: Area of Improvements analysis

Organizations	Areas that needs Improvements							Total
	Initiating	Planning		Executing	Monitoring and Controlling	Closing		
	Involving customers in designing the product/service	Planning the product/service requirements	Defining the scope of the product/service	Delivering the service in efficient and satisfactory manner	Insuring that the product/service meets the customer expectations and needs	Ensuring that the customers are satisfied about the end product	No need for improvement, everything is good	
Banking – O1	3%	3%	2%	6%	4%	41%	42%	250
Banking – O2	38%	14%	20%	1%	0%	14%	12%	250
Retail – O1	1%	0%	0%	32%	35%	14%	18%	300
Government – O1	5%	3%	3%	8%	10%	37%	33%	300
Government – O2	32%	30%	3%	4%	10%	8%	14%	300
Government – O3	14%	20%	15%	21%	16%	12%	2%	300
Hospitality – O1	27%	33%	4%	4%	3%	21%	8%	300
Total	17%	15%	7%	11%	12%	21%	18%	2000

Table 5.31 shows that most of the customers in Banking – O1, Banking – O2, Retail – O1, Government – O1 and Government – O2 Organizations waited between 1 to 10 minutes to be served while in Government – O3 they had to wait between 11 to 20 minutes to be served. While in Hospitality – O1 organization customers had to wait for their service between 6 to 15 minutes.

Table 5.31: Waiting Time to be served

Organizations	Waiting time to be served (Minutes)					Total
	1 - 5	6 - 10	11 - 15	16 - 20	21 - 25	
Banking – O1	138	84	27	0	0	249
Banking – O2	108	105	37	0	0	250
Retail – O1	122	100	50	28	0	300

Government – O1	161	131	4	4	0	300
Government – O2	150	150	0	0	0	300
Government – O3	34	55	92	79	40	300
Hospitality – O1	39	142	99	16	4	300
Total	752	767	309	127	44	1999

5.3.4 Independent t-test

The independent t-test compares two groups together to see if there significant difference between them (Brace, Kemp and Snelgar, 2009) the test is done on all the satisfaction and performance variables for all the project management process groups that was covered by the research. The test is done twice, once between “Banking –O1” organization which implements ISO, EFQM and TQM quality tools and “Retail – O2” organization which implements QFD quality tool, and then between “Government – O1” organization which implements ISO, EFQM and TQM quality tools and Government – O3 organization which does not implement and quality tool. The aim from these tests is to see if there are significant differences between these Organizations to test the developed Hypotheses.

Table 5.32: Customers were more satisfied and agreed with the “Baniking-O1” organization in all of the project phases (project management process groups), the mean for Banking-O1 in imitating and planning is 4.58, while in the Retail-O1 is 3.96, so the difference between both is 0.62. The difference between the two Organizations in Executing phase is 1.97, Monitoring and Controlling phase is 1.93 and in the closing phase is 1.76.

Table 5.32: Group statistics for Banking - O1 and Retail - O1

Group Statistics					
Organization		N	Mean	Std. Deviation	Std. Error Mean
Initiating and Planning	Banking – O1	300	4.58	0.75	0.05
	Retail – O1	300	3.96	1.16	0.07
Executing	Banking – O1	300	4.52	0.75	0.05

	Retail – O1	300	2.55	1.09	0.06
Monitoring and Controlling	Banking – O1	300	4.57	0.69	0.04
	Retail – O1	300	2.63	1.11	0.06
Closing	Banking – O1	300	4.25	1.14	0.07
	Retail – O1	300	2.49	1.11	0.06

Table 5.33: The 95% confidence interval for the two Organizations for initiating and planning phase is between 0.462 and 0.79, for the executing phase is between 1.815 and 2.124, for the monitoring and controlling phase is between 1.78 and 2.086 and then for the closing phase is between 1.57 and 1.95. The effect size for Initiating and planning phase is quiet large ($d = 0.65$), while in the other phase is much larger, in the executing and monitoring and controlling phase it is 2.15, but in the closing phase it is 1.56. The independent t-test showed that the difference between two Organizations was significant as showed in the values under t and df in the table.

Table 5.33: Independent t-test for Banking - O1 and Retail - O1

Independent Samples Test										
Satisfaction and Agreement Variables		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Initiating and Planning	Equal variances assumed	38.537	0.000	7.308	548.000	0.000	0.623	0.085	0.456	0.790
	Equal variances not assumed			7.587	517.765	0.000	0.623	0.082	0.462	0.784
Executing	Equal variances assumed	58.466	0.000	24.318	548.000	0.000	1.969	0.081	1.810	2.129
	Equal variances not assumed			25.103	524.591	0.000	1.969	0.079	1.815	2.124
Monitoring and Controlling	Equal variances assumed	84.844	0.000	24.257	548.000	0.000	1.933	0.081	1.774	2.092

	Equal variances not assumed			25.21 7	504.671	0.000	1.933	0.078	1.780	2.086
Closing	Equal variances assumed	4.840	0.193	18.33 8	548.000	0.000	1.760	0.097	1.571	1.950
	Equal variances not assumed			18.32 9	522.776	0.000	1.760	0.097	1.570	1.950

Table 5.34: Customers were more satisfied and agreed with the “Government-O1” organization in all of the project phases (project management process groups), the mean for Government-O1 in initiating and planning is 4.53, while in the Government –O3 is 2.92, so the difference between both is 1.61. The difference between the two Organizations in Executing phase is 0.99, Monitoring and Controlling phase is 0.74 and in the closing phase is 0.88.

Table 5.34: Group Statistics for Government - O1 and Government – O2

Group Statistics					
Organization		N	Mean	Std. Deviation	Std. Error Mean
Initiating and Planning	Government – O1	300	4.53	0.82	0.05
	Government – O3	300	2.92	1.14	0.07
Executing	Government – O1	300	4.36	0.96	0.06
	Government – O3	300	3.37	1.30	0.07
Monitoring and Controlling	Government – O1	300	4.50	0.75	0.04
	Government – O3	300	3.76	1.26	0.07
Closing	Government – O1	300	3.97	1.29	0.07
	Government – O3	300	3.09	1.35	0.08

Table 5.35: The 95% confidence interval for the two Organizations for initiating and planning phase is between 1.451 and 1.769, for the executing phase is between 0.803 and 1.172, for the monitoring and controlling phase is between 0.575 and 0.909 and then for the closing phase is between 0.672 and 1.095. The effect size for Initiating and planning phase is quiet large ($d =$

1.64), while in the other phase is less effect, in the executing phase $d = 0.88$, in the monitoring and controlling phase $d = 0.74$ and in the closing phase $d = 0.67$. The independent t -test showed that the difference between two Organizations was significant as showed in the values under t and df in the table.

Table 5.35: Independent t-test for Government - O1 and Government – O2

Independent Samples Test										
Satisfaction and Agreement Variables		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
Initiating and Planning	Equal variances assumed	39.328	0.000	19.817	598.000	0.000	1.610	0.081	1.451	1.769
	Equal variances not assumed			19.817	544.294	0.000	1.610	0.081	1.451	1.769
Executing	Equal variances assumed	101.532	0.000	10.574	598.000	0.000	0.988	0.094	0.803	1.172
	Equal variances not assumed			10.574	528.026	0.006	0.988	0.094	0.803	1.172
Monitoring and Controlling	Equal variances assumed	87.529	0.000	8.793	598.000	0.000	0.742	0.085	0.575	0.909
	Equal variances not assumed			8.793	484.750	0.000	0.742	0.085	0.575	0.909
Closing	Equal variances assumed	9.058	0.372	8.137	598.000	0.000	0.883	0.108	0.672	1.095
	Equal variances not assumed			8.137	592.880	0.000	0.883	0.108	0.672	1.095

6 Chapter 5: Discussion

6.1 Introduction

6.2 The Questionnaire Results

The aim of the research as explained in first chapter is to see the relationship between the quality management or/and implementing quality tools and the project performance and the project management processes. Moreover, the research was conducted in UAE for four different sectors that falls under the service industry. The studied quality tools are Quality Function Deployment (QFD), Total Quality Management (TQM), EFQ, ISO and SURVQUAL.

The survey questionnaire were collected by interviewing customers who were served by different Organizations that belong to Banking, Government, Retail and hospitality sector, to study the relationship between the implemented quality practices and tools and the handled projects in these Organizations . The findings and the detailed analysis of the survey are in chapter 4. Moreover, these findings are discussed in details in this chapter as shown in the below.

6.2.1 The Quality Tools and Quality Management – Project Management Processes and performance Relationship

From the survey satisfaction and agreement items analysis results we can see that customers were satisfied about the most about the organization that implements more quality tools such as Banking – O1 and Government – O1 organization. Both of them implement ISO, EFQM, SURVQUAL. Moreover, according to Tutuncu and Kucukusta (2010) that implementing EFQM in organization leads in to involving customers in the scoping and planning the product or the services to insure that the product or the service will be as per the customer's needs and expectations.

In Banking – O1 and Government – O1 the customer satisfaction and agreement were above 80% in most of the survey items and in the initiating and planning and monitoring and controlling phases they were satisfied the most (88% to 89%). These results (Table 5.28) indicate that these two Organizations are implementing ISO in effective way which makes the executing and controlling the projects is as per the customer's requirements (Russell, 2000), moreover implementing SURVQUAL improves monitoring and controlling the project. SURVQUAL is a tool that checks customer's perception about the product, which insure that what the organization executes is what the customer need.

The improvement areas analysis (Table 5.30) shows that 98% of the Government – O3 customers think that there should be an improvement for all of the aspects in the organization, and that because this government organization doesn't implement any quality tool. Moreover, 42% of the Banking – O1 customers said that everything was good in the bank and there are no needs for improvement. In addition to that waiting time increased in the organization that implement one quality tool or does not implement any quality tools (Table 5.31). These points explain that implementing quality tools improve the project management performance and project management processes.

Independent t-test was also done on the survey items to compare if there is significant difference between Organizations that implements different quality tools. Table 5.33 shows that with 95% confidence interval for Banking – O1 and Retail – O1 for all of the phases quiet large and the effect size for Initiating and planning phase is also quiet large ($d = 0.65$), while in the other phase is much larger. The independent t-test showed that the difference between two Organizations was significant as showed in the values under t and df in the Table 5.33. This means that there are significant differences between implanting EFQM, ISO 9000 and SURVQUAL and implementing only one quality tools (QFD in Retail – O1). Moreover, the independent t-test was also done on Government – O1 and Government – O3. Government – O1 implements EFQM, ISO 9000 and SURVQUAL as a quality tool and as a quality management practices, while Government – O3 does not implement any quality tool or quality management practice. The test results (Table 5.35) shows that 95% confidence interval for the two Organizations for initiating and planning phase is between 1.451 and 1.769, for the executing phase is between 0.803 and 1.172, for the monitoring and controlling phase is between 0.575 and

0.909 and then for the closing phase is between 0.672 and 1.095. The effect size for Initiating and planning phase is quite large ($d = 1.64$), while in the other phase is less effect, in the executing phase $d = 0.88$, in the monitoring and controlling phase $d = 0.74$ and in the closing phase $d = 0.67$. The independent t -test showed that the difference between two Organizations was significant as showed in the values under t and df in Table 5.35.

6.2.2 The Quality Tools – Customer Satisfaction Relationship

The conclusion of the overall satisfaction score which is shown in Table 5.28 shows that Customers are more satisfied about all of the stages of providing a service or product and all of the project management process groups for the organization that implements more than one quality tool. In Banking – O1 and Government – O1 the implemented quality tools are ISO 9000, EFQM and SURVQUAL, therefore the overall customer satisfaction score for Banking – O1 is 87%, and for Government – O1 is 83%. The lowest overall satisfaction score was for Retail - O1 48% (Implements QFD) and then Government – O3 57% (no implemented quality tool).

From the above and from Table 5.28 results we clearly see that there is statistically significant positive relationship between implementing of the quality tools (QFD, TQM, EFQM, ISO 9000 and SURVQUAL) and the customer satisfaction about the services and products in the service sector

6.2.3 Hypotheses Test Summary

Many tests and analysis were done on the collected data to study the Hypotheses. The tests are explained in the following list:

- **Customer Satisfaction and Agreement analysis:** this analysis was done on the performance and satisfaction section items (Appendix 4), to check the satisfaction level of the customer on the different phases of the project, and to check the differences between the Organizations that implements quality tools and quality management practices with the Organizations that does not implement quality tools and quality management.
- **Improvement Areas Analysis:** the third section in the survey talks about the improvement areas that the customers thinks it should be enhanced. The analysis for this section pointed out that customers in the organization which does not implement quality

tools and quality management practices wants' more improvements than the customers of the organization that implements quality tools and quality management practices.

- **Independent t-test:** this test was done to see if there is a significant difference between the organization that implements quality tools with the one that doesn't implement these tools or even quality management practices. The independent t-test showed that the difference between such Organizations were significant.

The results of the Hypotheses testing are summarized in Table 6.1.

Table 6.1: Hypotheses tests summary

Hypotheses	Description	Findings
Hypothesis 1 (H₁)	There is positive impact for the quality tool (QFD, TQM, EFQM, ISO 9000 and SURVQUAL) on the project performance.	Confirmed
Hypothesis 2 (H₂)	Implementing quality tools (QFD, TQM, EFQM, ISO 9000 and SURVQUAL) in Organizations improves the project management processes.	Confirmed
Hypothesis 3 (H₃)	There is positive impact for the quality management on the project performance.	Confirmed
Hypothesis 4 (H₄)	There is statistically significant positive relationship between implementing of the quality tools (QFD, TQM, EFQM, ISO 9000 and SURVQUAL) and the customer satisfaction about the services and products in the service sector.	Confirmed
Hypothesis (H₅)	The implementation of the quality management improves the project management process.	Confirmed

6.3 Data Limitation

The research has few limitations, which restricted the questionnaire, and the analysis to be in certain was, however the research approach and design was able to study the relation between the quality tools and management and the project performance and project processes. The data collection limitations are listed below:

- a) As described before that the major limitation of the study is that the used data is the same data, which was collected for different organization by the company that the researcher works for. Moreover, there were difficulties to collect data specially in the government or the academic sector as there are many procedures that the researcher should go through before getting approval on collecting data in curtain organization. This difficulty leads to only study four sectors (Banking, Retail, Government and Hospitality) where that data was available.
- b) It was difficult to customize the survey, as it is a template that is used by the researcher company, otherwise the collected data cannot be analyzed if new questions or the way the questions is listed are changed. Despite this, the survey was good enough to study all of the developed hypotheses
- c) The aim of the study and the research design is based on understanding the customer needs, requirement and satisfaction. Therefore, there were limitations on the type of test that can be used to study the hypotheses. To test the hypotheses the researcher had to focus more on calculating the satisfaction and agreement score for each survey item to check the relation between the quality tools and the project management performance and processes.
- d) The sample sizes between different sectors are different, therefore it was difficult to focus the analysis on sector bases, but it was done based on each organization. This limitation was there because of using an existing data for the required survey, therefore the detailed analysis was based on each organization and it helped the aim of studying the hypotheses.

7 Chapter 7: Conclusion and Recommendations

7.1 Introduction

This chapter explains the conclusion based on the literature review and the data analysis and findings. The recommendation in this chapter will be based on the findings for each process group and for each organization. Moreover, recommendation for further research in the same field from academic and practitioners perspective is also covered at the end of this chapter.

7.2 Conclusions

The objectives of this study were:

- i. To develop an understanding of the concept “Customer Driven Project Management”.
- ii. To investigate in the integrating the quality into the project management processes.
- iii. To study the role of the quality tools in customer driven project management and how that reflect into the customer satisfaction.
- iv. To investigate the integration between quality management and quality tools with the projects in UAE service sector Organizations through a quantitative research.
- v. To come up with recommendation for project managers and Organizations on how to deliver projects and having a satisfied customers through the project life cycle.

This study followed a step by step approach and strategy to address the aimed objectives. Starting by a literature review to understand the involvement of customers in driving the projects and to know how different quality management practices and quality tools contributes in to the project management processes and performance and to see the relation between these two aspects. The hypotheses developed based on the literature review and the research were conducted in seven different organization in UAE from four deferent sector to understand the relation between implementing quality tools and quality management practices in the Organizations in UAE and the effect on the project management processes and performance.

The literature review and the research investigate on the study objectives and the research data analysis was done to test the developed Hypotheses. The research shows the relation between quality tools and management and project management process and performance and how organization could enhance delivering project management by integrating quality into the project management process. A lot of investigations and analysis was done throughout the research to answer the research questions. Below is the detailed conclusion about the research for each question for this study.

RQ1: Does quality management or quality tools help in increasing the project performance and the customer satisfaction if it is integrated with project management processes?

Based on the analysis of the literature review and the collected survey data, the answer for this question can be divided to two sections. The relation between quality management and customer driven project management and the relation between the quality tools and the customer driven project management. The details are described in the following:

The relation between quality management and customer driven project management:

The customer driven project management is using the customer needs, requirements and expectation to drive and deliver the project involving a win-win strategy with the stakeholders. Moreover, there is more than 40% of the project management process that involves the customer directly while the other it has impact from and on the customers.

As investigated in the literature review that quality management in Organizations is to identify and analyze the efficiency of the projects by meeting the customer requirements and also implementing quality tools could be considered as quality management practices such as implementing TQM and QFD. Implementing these practices links directly to the customer satisfaction or even to the project management process. Quality management is divided to three main phases, which are planning the quality requirements, monitoring and controlling the delivery processes, then the assurance, and the alignment with the project strategy and objective. Planning stage is the most critical stage where the project is planed based on customers' needs and requirements as they are the end user who will use the product or the service. While in the monitoring page the quality management helps in insuring that the deliverables or the services is delivered as per the planned requirement to ensure customer satisfaction, and then finally in the quality assurance stage there are several tools that can be used which inure that the end product is exactly as per the expectation, these tools were investigated in the literature review which are control charts, cause and effect diagrams (Fishbone and Ishikawa), flowcharts, pareto charts, histograms, run charts and scatter diagrams.

From the analyzing the research data and the literature review, the findings is that there is positive significant relation between implementing quality management practices in Organizations and the customer driven project management.

The relation between the quality tools and the customer driven project management:

There are many available quality tools that can be implement in organization and has direct effect on the project processes and performance, but from the previous literatures the researcher find out that there are common effective tools which are investigated in this study, the relation between these tools and the customer driven project management is explained in the following list:

- Quality Function Deployment (QFD): this quality tool is mostly focused on determine the product specifications based on the requirements by translating the customer requirements to a design requirements and the convert these requirements to parts, then examining the right process to go to the production stage. Moreover, from analyzing the research and the literature review the finding that this tool has positive impact on the initiating and planning processes groups as it aims to plan and involve the customers, and customers were satisfied about the planning and the initiating process groups in the organization that implements QFD.
- Total Quality Management (TQM): This tool is about converting the organization culture to be customer oriented and focused and it is full quality improvement system that has direct positive effect on all of the customer project management processes groups. Moreover, the data analysis shows that customers were satisfied about most of the project processes specially the initiating, planning and the monitoring and controlling phase.
- EFQM: the excellence model considered as one of the most effective quality tools that improve the project management performance and processes, and it is very easy to implement. This tool is wily used in UAE by many award offices where Organizations are assessed against the EFQM standard.
The data analysis finding prove that customers are satisfied about most of the customer driven project management process groups specially the initiating and planning phases.
- ISO 9000: this tool is very widely use tool around the world and it focuses on evaluating the processes of the projects and the organization and not on the quality of the end product of the service. The data analysis shows that implementing ISO 9000 has positive impact on the customer satisfaction about the executing and monitoring and controlling phase of the project management processes.
- SURVQUAL: this is tool to assess the customer perception about the delivered service or product and to come up with correction action and preventive action which. From the

literature review and data analysis, the findings prove that customers were mostly satisfied about the monitoring and controlling process group for the organization that implement SURVQUAL.

From the above we can see there is a significant positive relation between implementing quality tools and customer driven project management.

RQ2: What is the best way to integrate quality tools into project management processes?

From the literature review and the data analysis, we can see that every quality tool has more effect on certain project management processes. As shown in Table 3.4 and Table 5.28 that if organization is weak or having problem in the initiating and planning process groups in their projects, then it is better to implement EFQM, TQM or QFD, but if the organization want to improve the executing and monitoring and controlling phases in any project so it is better to use ISO 9000, TQM or SURVQUAL. While for the closing phase EFQM and ISO 9000 are the recommended quality tools.

RQ3: What are the main success factors for implementing quality tools for organization and the effect on the customer driven project management processes?

As mention in the previous point that each quality tool has an effect on certain area of the customer driven project management processes, therefore to insure that these quality tools will be implemented successfully it is very important to look at the weakness areas and cover theses gaps with the most suitable tools. Moreover, as per the literature review and the research data analysis that it is very important to implement tools that enhance the planning stage of the project as it is very critical to take customers requirements and needs at the begging of each project to insure the successes throughout the project.

RQ4: What are the main requirements and expectations for the service sector customers in UAE?

After analyzing, the improvement areas section in the collected data and after reviewing the customers comment. The main requirements and expectation of the different organization's customers in UAE are listed below:

- Customers want to be involved in the designing phase of the service or the product, so in the hospitality, retail and banking sectors customers want the Organizations to ask them how they preferred the product to be and what is the suitable product to them and what are their expectations toward the delivered service. While in the government sector customers want to finish the service quickly with minimum error rate in their application and that will be by involving them in designing the service and understanding the customer journey map of getting the service done.
- Customers want the products and the service to be planned very well and they want high quality and affordable prices and that the scope of the service or the product as per their needs and requirements.
- While delivering the service and the products customers want the suitable premises which has all the required facilities and the waiting area, comfortable temperature and easy access, token machine and technology in processing their requirements and needs
- Customers are also concerned that the end product should be with high quality and the services should be delivered based on best practice on customer service such as greeting the customer and treating them fairly with respect.

7.3 Recommendations

The study aims to understand the link of the quality tools and quality management and the project management process and performance, from the literature review and the data analysis for each organization the recommendations will be divided based on the 5P's model (TICSI, 2012):

- Policies
 - Organizations should ensure that their strategic intent highlights the importance of the customer role and that customer satisfaction is a priority
 - Policies drive the Organizations, therefore organization objectives should clearly measure the customer service goals to ensure that customers' needs and requirements are taken into consideration while developing any service or product
 - Organization should also have a clear description about the payment methods and full information about the product and the services.

- Organization should have a clear system in place to collect customers feedback (complaints and suggestions)
- Organization should have a systematic clear description about the employees development and train them on best practice in customer service
- Processes
 - The organization should ensure that relevant employees have been involved in the development and implementing of the processes and their documentation, as these are the tools of business.
 - The processes should be derived from the strategic intent of the organization and its policies to insure that the execution phase of the project is aligned with the customer needs and requirements
 - Process should be distributed and understood by employees very well to able to deliver the product or the service as per the requirements, moreover, process should be explained in a friendly way to the customers and should be available in visual format at the service center locations
- Product/Services
 - Products/services sold/delivered are genuine and their origin is from a credible source which is clearly communicated to the customer
 - The organization should ensure development of an appropriate system for selection of strategic partners. The organization should communicate to the selected partners the organization's core values and should measure service delivery performance against such standards at regular intervals.
- Premises
 - The Premises are interpreted as inclusive of all the delivery channels of the organization, therefore it is major contributory factors to the customer's overall impression of the business and can act as important attractors to new customers
 - Premises should be easy and safe for customers to access at all times. It is important that this factor is considered beyond the physical building to include the general ambience, environment and ease of use of the Premises.

Moreover, it is highly recommended for organization to implement the suitable quality tools, which cover the gaps and the weakness areas, and the best two tools for organization is EFQM

and TQM, and if these two tools implemented effectively that will insure a high customer satisfaction about most of the project phases. Also organization should focus and give a lot of attention to the quality and the quality tools as it links directly and positively to the project management processes and performance and insure better profit and satisfaction.

7.4 Recommendations for Further Research

As mention before in the data limitation section, that due to the time limitation and data access limitation, there were certain area could be explored which was not cover in this research. the recommendation for suture research is explained below:

- 1- The context of this study is only UAE, therefore results and analysis was done on particular contest, but it will be an opportunity to run this research in different countries to benchmark the results and to see if the needs and expectations differs between different culture and then to compare the level of the delivered service between different countries.
- 2- Access to data was only available for only four sectors that belong the service industry. It is recommended to include more sectors and organization in further research about the link between quality and project management.
- 3- There were only few literature found that investigate about the customer driven project management concept and the link between the quality management and quality tools and the project performance and processes, therefore it is recommended to elaborate more about this area and investigate about the details of link between certain project management tool and project management.

7.5 Contribution of this research

The research study has significantly contributed from academic and practical point of view. The study investigates the relation between quality management and tools and the project management processes and performance. This research not only highlighted about the link between the quality tools and the customer driven project management but also added a value to which tool should be used by organization based on the weakness and based on the project

management areas. Specific contributions from the academic and industry perspective are explained below:

7.5.1 Academic Perspective

- As already explained and discussed in first chapter 1, that there are only few literatures covers the relation between quality and project management as usually these considered from different specialization or majors, therefore for this study contributes significantly on the relationship between both
- Secondly this research also elaborate on the suitable quality tool that should be used which will improve certain processes in the projects, the research investigate the effect of EFQM, TQM, QFD, ISO 9000 and SURVQUAL on the project management performance and project management processes
- This research also shows the importance of involving the customers in every stage in the project and how organization can improve the customer service.
- Finally, this research is very useful addition to limited research about the link between project management and quality I UAE, and it provides future opportunities for academic research in the same field in UAE and the gulf region.

7.5.2 Practitioners' Perspective

- This research adds a significant amount of information for practitioners in different industries in UAE and in the gulf region. As it explains what are the best quality tools to be used and how organization could improve their project management and process. Moreover, the research highlights the exact strength and weakness of each quality tool on the project management.
- In additional to that this study gives a lot of useful information to the Organizations from different industries to understand what customers is looking for which will allow them to work toward better service and then better profit. The details customers requirements are listed in the recommendation section which are based on the analysis of the data and the literature review.

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9 Appendices

Appendix 1: relation between Job satisfaction and EFQM research results (Tutunc and Kucukusta, 2010)

Canonical correlation between job satisfaction & EFQM

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Table 1 Demographic dispersion

	Number	%		Number	%
<i>Sex</i>			<i>Education</i>		
Female	126	31.1	High school	73	18.0
Man	260	64.2	University	244	60.2
Missing	19	4.7	Post graduate	70	17.3
Total	405	100.0	Missing	18	4.4
<i>Age</i>			Total	405	100.0
At 15 or younger than 25	29	7.2	<i>Total working years</i>		
26–32	138	34.1	0–2	89	22.0
33–42	133	32.8	3–5	108	26.7
43–50	62	15.3	6–9	133	32.8
51 and above	26	6.4	More than 10 years	55	13.6
Missing	17	4.2	Missing	20	4.9
Total	405	100.0	Total	405	100.0
<i>Tenure (present job)</i>					
Less than 1	33	8.1			
1–5	102	25.2			
6–10	75	18.5			
11–20	47	11.6			
21 and more	125	30.9			
Missing	23	5.7			
Total	405	100.0			

Table 2 Descriptive statistics

	<i>N</i>	Mean	SD
Work	405	3.80	0.658
Wages	405	3.24	0.875
Promotion	405	3.55	0.992
Co-workers	405	3.92	0.761
Supervision	405	3.77	0.845
Leadership	405	4.04	0.813
Policy	404	4.06	0.736
People	405	3.78	0.889
Partners	405	4.09	0.664
Processes	404	4.06	0.701
Results	402	4.04	0.644
JS	404	4.29	0.897
BEM	401	4.06	0.900
Valid <i>N</i> (listwise)	398		

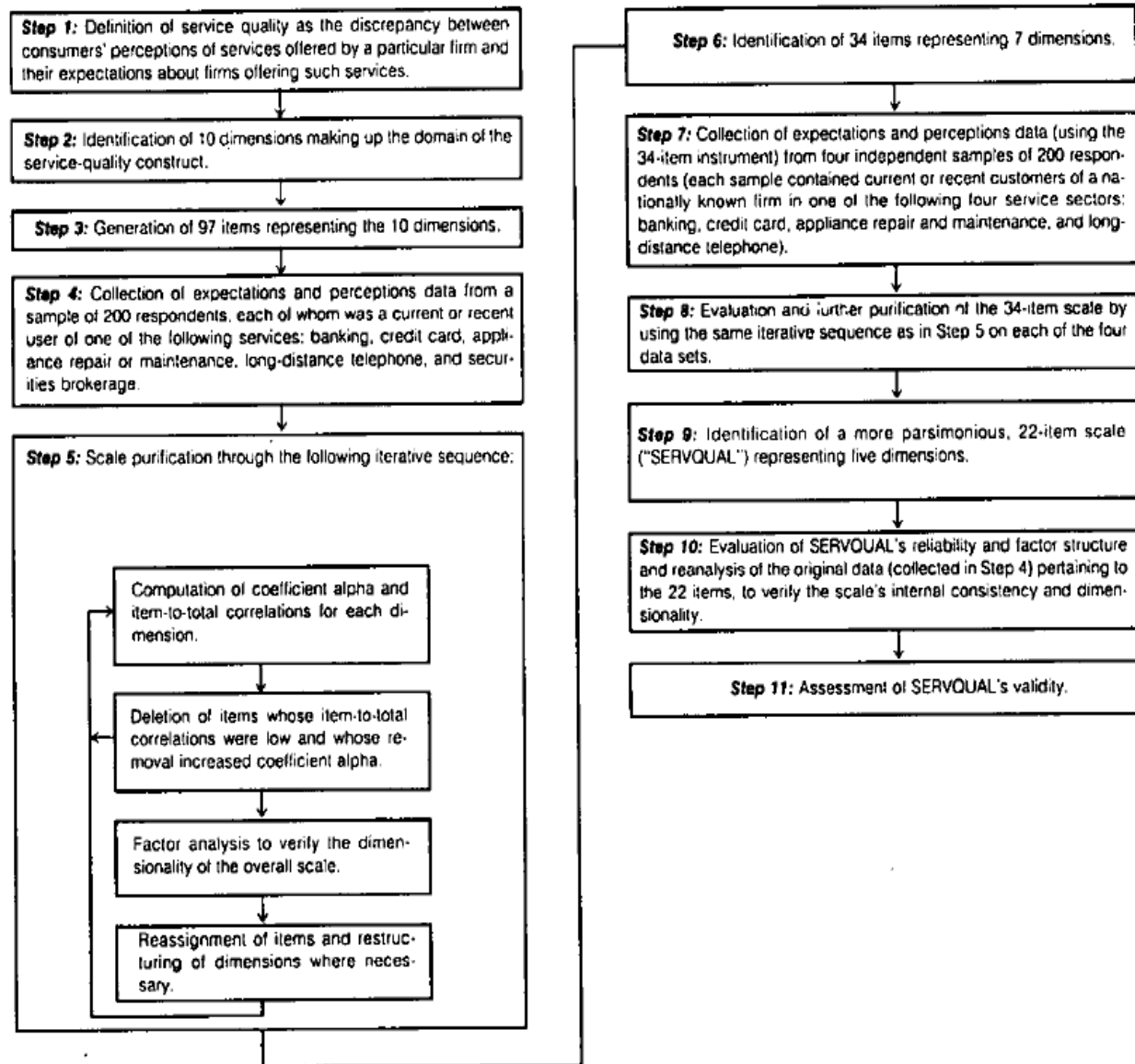
Table 3 Canonical correlation analysis relating levels of dependent and independent set

Canonical function	Canonical correlation	Canonical R^2	F statistics	Probability
<i>Measures of overall model fit for canonical correlation</i>				
1	0.7305	0.533	16.54	0.0001
2	0.2676	0.068	2.58	0.005
Multivariate tests of significance	Value	Approx. F statistics	Probability	
Wilks' lambda	0.434	16.54	0.0001	
Pillai's trace	0.601	13.81	0.0001	
Hotelling's trace	1.217	19.43	0.0001	
Roy's gcr	1.144	36.71	0.0001	

Table 4 Canonical results

	Canonical function 1		Canonical function 2	
	Loadings	Cross-loadings	Loadings	Cross-loadings
<i>Criterion set</i>				
JS-Job satisfaction	0.8765	0.6404	−0.4814	−0.1288
BEM-Business Excellence models	0.8938	0.6530	0.4486	0.1200
Explained variance (%)	78.3		21.7	
<i>Predictor set</i>				
Work itself	0.7591	0.5546	−0.1534	−0.0411
Wages	0.2321	0.1689	−0.5725	−0.1532
Promotion	0.5864	0.4284	−0.1006	−0.0269
Co-workers	0.4164	0.3043	0.0840	0.0225
Supervision	0.7027	0.5134	0.3898	0.1043
Leadership	0.8532	0.6233	0.1065	0.0285
Policy	0.7673	0.5606	0.2278	0.0610
People	0.7332	0.5357	0.2384	0.0638
Partners	0.7817	0.5711	0.1929	0.0516
Processes	0.7856	0.5740	0.1866	0.0499
Results	0.6734	0.4920	0.3992	0.1068
Explained variance (%)	47.1		7.9	
Canonical coefficient	0.7305		0.2609	
Redundancy R^2 (%)	53.4		7.1	

Appendix 2: Summary of steps of developing SURCQUAL (Parasuraman, Zeithaml and Berry, 1988)



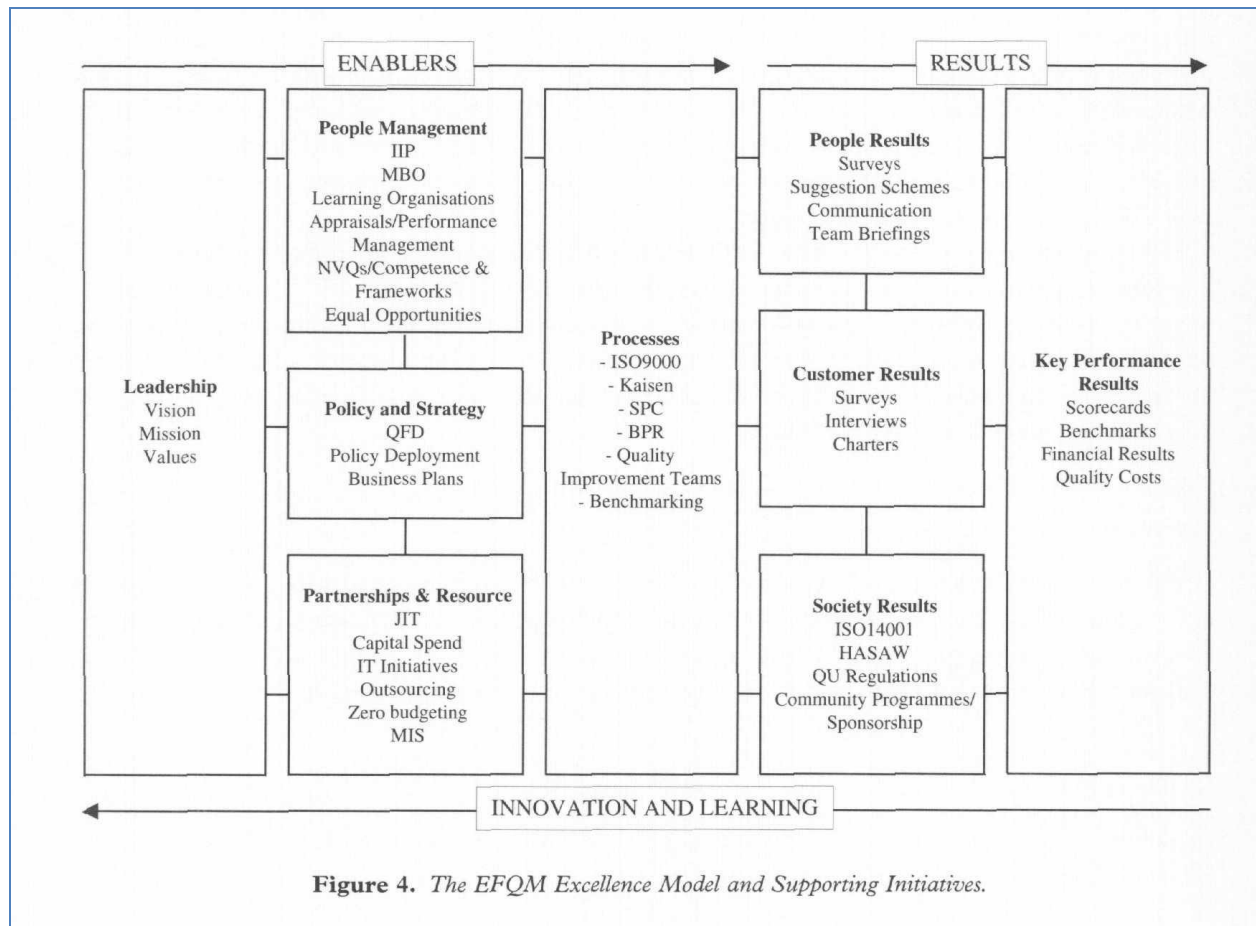
Appendix 3: Linkage and contribution of ISO 9001:2000 to Excellence (Russell, 2000)

Table 1. *Linkage and Contribution of ISO 9001:2000 to Excellence*

Enablers			
Excellence criterion	ISO 9001:2000 Contribution	Linkages	
		Sub criteria	ISO 9001:2000 elements
Leadership	Low/Medium	1a	5.1, 5.3
		1b	5.3, 5.4, 5.5, 5.6
		1c	5.2
		1d	5.1, 5.3
Policy and strategy	Medium	2a	5.2, 8.2.1
		2b	5.6, 8.2, 8.4
		2c	5.3
		2d	5.4.2
		2e	5.3, 5.4.1, 5.5.4
People	Low	3a	
		3b	6.2
		3c	5.5.2, 6.2
		3d	5.1
		3e	6.4
Partnerships and resources	Low/Medium	4a	
		4b	
		4c	6.1, 6.3, 6.4, 7.5.1
		4d	
		4e	5.5.6, 5.5.7, 7.2.2, 7.3.3
Processes	High	5a	Covered generically by 4.1 & 4.2
		5b	5.6, 7.3.7, 8.2.3, 8.4, 8.5
		5c	7.2, 7.3
		5d	Addressed throughout 7
		5e	5.2, 7.2, 8.2.1, 8.4, 8.5.2, 8.5.3

Table 2. *Linkage and Contribution of ISO 9001:2000 to Excellence*

Results			
Excellence criterion	ISO 9001:2000 Contribution	Linkages	
		Sub criteria	ISO 9001:2000 elements
Customer results	Medium	6a	5.6, 7.2.3, 8.2, 8.4
		6b	8.2.3, 8.4
People results	Low	7a	
		7b	5.3, 6.2.2
Society results	None	8a	
		8b	
Key performance results	Low	9a	
		9b	5.6, 7.4.1, 8.2.3, 8.2.4



Appendix 4: Final Questionnaire

Demographics and General Questions

1. Please select the sector of the department/company that served the customer? *

- ☐ Banking
- ☐ Retail
- ☐ Government
- ☐ Hospitality

2. Please select the department/company that served the customer?

- Banking – O1

- Banking – O2
- Retail – O1
- Government – O1
- Government – O2
- Government – O3
- Hospitality – O1

3. Date of the Survey: *

4. Nationality *

- UAE Local
- Expat Arab
- Expat Asian
- Expat Westerner
- Other _____

5. Gender *

- Male
- Female

6. Age group *

- Under 21
- 21-30
- 31-40
- 41-50
- 50-60
- +60

Satisfaction and Performance

7. Rate your satisfaction with the following: *

	1 Extremely Dissatisfied	2 Dissatisfied	3 Neutral	4 Satisfied	5 Extremely Satisfied
Initiating and Planning					
7.1 Overall, how satisfied were you with the specification of the product/service?	☐	☐	☐	☐	☐
7.2 Overall, how satisfied are you with the department/organization in taking your opening and feedback to improve their services/products?	☐	☐	☐	☐	☐
Executing	1 Extremely Dissatisfied	2 Dissatisfied	3 Neutral	4 Satisfied	5 Extremely Satisfied
7.3 Overall, how satisfied were you with the time taken to receive the required service? *	☐	☐	☐	☐	☐
7.4 Overall, how satisfied were you with the easiness of getting the service from that department? *	☐	☐	☐	☐	☐
	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Disagree
7.5 I was treated fairly by the employees of that department who assisted me with the service. *	☐	☐	☐	☐	☐

7.6 The employees showed their respect while delivering the service/ transaction. *	☐	☐	☐	☐	☐
Monitoring and Controlling	1 Extremely Dissatisfied	2 Dissatisfied	3 Neutral	4 Satisfied	5 Extremely Satisfied
7.7 I have received information that helped me regarding all I should do until getting my services completed. *	☐	☐	☐	☐	☐
7.8 Overall, how satisfied were you with the quality of service provided by the employees of that department? *	☐	☐	☐	☐	☐
7.9 Overall, how satisfied were you with the department staff you directly dealt with and provided the service to you? *	☐	☐	☐	☐	☐
	1 Strongly Disagree	2 Disagree	3 Neutral	4 Agree	5 Strongly Agree
7.10 Employees were competent and knowledgeable enough to provide the requested service. *					
7.11 Employees did their best and went the extra mile to make sure I received the proper aid and required service. *					
Closing	1	2	3	4	5

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7.12 I waited for a reasonable period of time in the department until I received my requested service. *	☐	☐	☐	☐	☐
7.13 At the end, did you manage to get the service you needed? *	☐	☐	☐	☐	☐

8. How long did you have to wait until you got served? (Minutes) *

- ☐ 1 - 5
- ☐ 6 - 10
- ☐ 11 - 15
- ☐ 16 - 20
- ☐ 21 - 25
- ☐ 26 +

Area of Improvements

9. In your opinion, which of the factors that influence the department's service delivery performance needs immediate improvement and development? (Multiple selection question – checkboxes)

- **Initiating**
 - ☐ Involving customers in designing the product/service
- **Planning**
 - ☐ Planning the product/service requirements
 - ☐ Defining the scope of the product/service
- **Executing**
 - ☐ Delivering the service in efficient and satisfactory manner
- **Monitoring and Controlling**
 - ☐ Insuring that the product/service meets the customer expectations and needs
- **Closing**

- Ensuring that the customers are satisfied about the end product or the overall process of getting the service/product
- No need for improvement, everything is good

10. What would you suggest to improve the services provided to you?

Thank you for taking the time to fill in the questionnaire

Appendix 5: Detailed Independent t-test results (Banking-O1 and Retail-O1)

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
7.1 Overall, how satisfied were you with the specification of the product/service?	Equal variances assumed	27.140	.000	6.494	548	.000	.547	.084	.381	.712
	Equal variances not assumed			6.734	520.672	.000	.547	.081	.387	.706
7.2 Overall, how satisfied are you with the department/organization in taking your opening and feedback to improve their services/products?	Equal variances assumed	49.934	.000	8.122	548	.000	.699	.086	.530	.868
	Equal variances not assumed			8.440	514.857	.000	.699	.083	.537	.862
7.3 Overall, how satisfied were you with the time taken to receive the required service?	Equal variances assumed	19.662	.000	24.342	548	.000	1.923	.079	1.768	2.079
	Equal variances not assumed			24.901	545.245	.000	1.923	.077	1.772	2.075

7.4 Overall, how satisfied were you with the easiness of getting the service from that department?	Equal variances assumed	61.042	.000	22.639	548	.000	1.894	.084	1.730	2.058
	Equal variances not assumed			23.454	523.193	.000	1.894	.081	1.735	2.053
7.5 I was treated fairly by the employees of that department who assisted me with the service.	Equal variances assumed	27.531	.000	27.732	548	.000	2.117	.076	1.967	2.267
	Equal variances not assumed			28.408	543.904	.000	2.117	.075	1.970	2.263
7.6 The employees showed their respect while delivering the service/ transaction.	Equal variances assumed	125.629	.000	22.559	548	.000	1.943	.086	1.774	2.112
	Equal variances not assumed			23.647	486.024	.000	1.943	.082	1.781	2.104
7.7 I have received information that helped me regarding all I should do until getting my services completed.	Equal variances assumed	34.410	.000	28.871	548	.000	2.081	.072	1.940	2.223
	Equal variances not assumed			29.504	546.067	.000	2.081	.071	1.943	2.220
7.8 Overall, how satisfied were you with the quality of service provided by	Equal variances assumed	55.664	.000	18.757	548	.000	1.701	.091	1.523	1.880

the employees of that department?	Equal variances not assumed			19.325	535.453	.000	1.701	.088	1.528	1.874
7.9 Overall, how satisfied were you with the department staff you directly dealt with and provided the service to you?	Equal variances assumed	89.592	.000	27.227	548	.000	2.060	.076	1.911	2.209
	Equal variances not assumed			28.497	491.512	.000	2.060	.072	1.918	2.202
7.10 Employees were competent and knowledgeable enough to provide the requested service.	Equal variances assumed	93.251	.000	26.456	548	.000	2.093	.079	1.938	2.249
	Equal variances not assumed			27.651	496.501	.000	2.093	.076	1.945	2.242
7.11 Employees did their best and went the extra mile to make sure I received the proper aid and required service.	Equal variances assumed	151.302	.000	19.977	548	.000	1.729	.087	1.559	1.899
	Equal variances not assumed			21.111	453.824	.000	1.729	.082	1.568	1.890
7.12 I waited for a reasonable period of time in the department until I received my requested service.	Equal variances assumed	.762	.383	16.205	548	.000	1.641	.101	1.442	1.840
	Equal variances not assumed			16.031	502.847	.000	1.641	.102	1.440	1.842

7.13 At the end, did you manage to get the service you needed?	Equal variances assumed	8.917	.003	20.470	548	.000	1.880	.092	1.700	2.060
	Equal variances not assumed			20.627	542.705	.000	1.880	.091	1.701	2.059

Appendix 6: Detailed Independent t-test results (Government-O1 and Givernment-O3)

Independent Samples Test										
		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
7.1 Overall, how satisfied were you with the specification of the product/service?	Equal variances assumed	33.041	.000	18.341	598	.000	1.430	.078	1.277	1.583
	Equal variances not assumed			18.341	538.900	.000	1.430	.078	1.277	1.583
7.2 Overall, how satisfied are you with the	Equal variances assumed	45.614	.000	21.293	598	.000	1.790	.084	1.625	1.955

department/organization in taking your opening and feedback to improve their services/products?	Equal variances not assumed			21.293	549.687	.000	1.790	.084	1.625	1.955
7.3 Overall, how satisfied were you with the time taken to receive the required service?	Equal variances assumed	219.176	.000	18.690	598	.000	1.840	.098	1.647	2.033
	Equal variances not assumed			18.690	441.997	.000	1.840	.098	1.647	2.033
7.4 Overall, how satisfied were you with the easiness of getting the service from that department?	Equal variances assumed	172.715	.000	13.776	598	.000	1.167	.085	1.000	1.333
	Equal variances not assumed			13.776	480.972	.000	1.167	.085	1.000	1.333
7.5 I was treated fairly by the employees of that department who assisted me with the service.	Equal variances assumed	.702	.402	2.266	598	.024	.220	.097	.029	.411
	Equal variances not assumed			2.266	597.360	.024	.220	.097	.029	.411
7.6 The employees showed their respect while delivering the	Equal variances assumed	13.535	.000	7.564	598	.000	.723	.096	.536	.911

service/ transaction.	Equal variances not assumed			7.564	591.777	.000	.723	.096	.536	.911
7.7 I have received information that helped me regarding all I should do until getting my services completed.	Equal variances assumed	48.319	.000	9.269	598	.000	.693	.075	.546	.840
	Equal variances not assumed			9.269	470.009	.000	.693	.075	.546	.840
7.8 Overall, how satisfied were you with the quality of service provided by the employees of that department?	Equal variances assumed	58.958	.000	8.677	598	.000	.767	.088	.593	.940
	Equal variances not assumed			8.677	516.092	.000	.767	.088	.593	.940
7.9 Overall, how satisfied were you with the department staff you directly dealt with and provided the service to you?	Equal variances assumed	45.822	.000	8.226	598	.000	.613	.075	.467	.760
	Equal variances not assumed			8.226	454.117	.000	.613	.075	.467	.760
7.10 Employees were competent and knowledgeable enough to provide the requested service.	Equal variances assumed	236.353	.000	12.007	598	.000	1.060	.088	.887	1.233
	Equal variances not assumed			12.007	431.194	.000	1.060	.088	.886	1.234

7.11 Employees did their best and went the extra mile to make sure I received the proper aid and required service.	Equal variances assumed	48.195	.000	5.788	598	.000	.577	.100	.381	.772
	Equal variances not assumed			5.788	552.339	.000	.577	.100	.381	.772
7.12 I waited for a reasonable period of time in the department until I received my requested service.	Equal variances assumed	.106	.745	10.543	598	.000	1.167	.111	.949	1.384
	Equal variances not assumed			10.543	597.544	.000	1.167	.111	.949	1.384
7.13 At the end, did you manage to get the service you needed?	Equal variances assumed	18.009	.000	5.731	598	.000	.600	.105	.394	.806
	Equal variances not assumed			5.731	588.216	.000	.600	.105	.394	.806

Appendix 7 – Reliability Test Results

Scale: Initiating and Planning Process Group

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.300	.300	2

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Item 7.1	3.58	1.495	.176	.031	.
Item 7.2	3.65	1.426	.176	.031	.

Scale: Executing Process Group

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.570	.569	4

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted

Item 7.3	11.36	6.756	.379	.167	.475
Item 7.4	11.27	7.599	.303	.128	.536
Item 7.5	11.18	7.207	.356	.170	.495
Item 7.6	11.22	7.193	.370	.185	.484

Scale: Monitoring and Controlling Process Group

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.698	.699	5

Item-Total Statistics					
	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Item 7.7	15.96	10.251	.438	.206	.656
Item 7.8	15.93	10.202	.435	.191	.657
Item 7.9	15.94	10.182	.484	.246	.637
Item 7.10	16.00	9.836	.490	.248	.633
Item 7.11	15.94	10.352	.422	.193	.663

Scale: Closing Process Group

Reliability Statistics		
Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.171	.172	2

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item- Total Correlation	Squared Multiple Correlation	Cronbach's Alpha if Item Deleted
Item 7.12	3.71	1.679	.094	.009	.
Item 7.13	3.15	2.093	.094	.009	.