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Development of a Total Quality Management Framework for Libyan Health Care organisations

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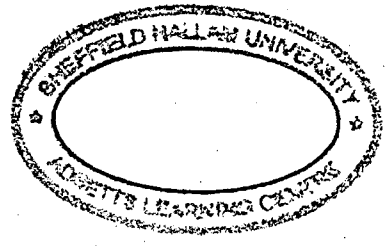

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Nomenclature

TQM: Total Quality Management

QFD: Quality Function Deployment

JIT: Just In Time

PDCA: Plan, Do, Check and Act

ISO: International Organization for Standardisation

WWII: Second World War

MBNQA: Malcolm Baldrige National Quality Award

EQA: European Quality Award

JQA: Japan Quality Award

SQA: Singapore Quality Award

AHP: Analytic Hierarchy Process

IR: Inconsistency Ratio

SPSS: Statistical Package for Social Sciences

ANOVA: Analysis of Variance

L1: Vision

L2: Mission

L3: Strategy

L4: Communication

L5: Empowerment

L6: Trust

L7: Team development

LE: Leadership Excellence

L: Leadership

TE: Training and Education

FC: Focus on Customer

PM: Process and measurement

CI: Continuous improvement

QIDW: Quality in Daily Work

QP: Quality Planning

QC: Quality Control

QI: Quality Improvement

AP: Adaptation and preparation

QC*: Quality Circle

QCT: Quality Circles Team

IPCQS: Identify the problem in the current quality system

CF: Select the factors to be evaluated

MQ: Measuring the quality service

SA: Sensitivity analysis

PCDA: Plan-Do-Check-Act stage

LSD: least-significant difference

Abstract

Primary health care is the first stage for the national health. As such it is considered as the first stage of communication between the citizen, family and the society. The main objective for any primary healthcare is to meet the need of the individual at high quality, and improve the performance of the healthcare system. The quality here is what the patient receives with regard to excellent and safe medical and health services.

According to the available literature and based on the author's many visits and preliminary investigation regarding Libyan healthcare sector in general and Tripoli healthcare sector in particular, it has been proven that the reality of government hospitals in Libya is that: these hospitals are facing many problems opposing their improvement, continuity and ability to compete.

Based on a series of comprehensive questionnaires, the weakness in the current system are identified and also found that Total Quality Management (TQM) would provide the solution for Libyan Healthcare system. TQM is a way of managing to improve the effectiveness, efficiency, flexibility, and competitiveness of a business as a whole. The literature illustrated that there are many models and frameworks in the field of TQM. However, the quality gurus have never agreed about a specific framework or implementation procedure. In addition, there is lack of a general model in health care, and there is no clear agreement as to the way in which TQM should be implemented in a health care sector. Therefore, the focus of this study is to identify an appropriate TQM framework for Libyan health care organisations and benchmarking them and distinguish their competitive advantage, in order to achieve performance excellence.

A comprehensive literature review related to TQM is carried out to have a clear insight into the TQM and its application in health service. A questionnaire survey method is adopted to gather the data and information, which form the basis for the development of the proposed TQM framework. Statistical Package for the Social Sciences SPSS and Analytical Hierarchy Process AHP are utilised to analyse the collected data and views from managers and employees in the organisations under investigation. In addition, in order to achieve the aim of this study two models are developed and TQM framework that covers most aspects of TQM starting from top management awareness until even promoting continuous improvement is developed.

The verification and validation process of the proposed TQM framework and its implementation stage implied that the proposed framework factors and stages are important for improving the quality performance of healthcare service in the organisation under investigation.

Publications from the thesis

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Chapter one:

Introduction

1.1. Introduction:

Total Quality Management (TQM) is a management approach for an organisation centred on quality, based on the participation of all its members and aimed at meeting customer expectations (Short and Rahim, 1995). Moreover, implementing total quality programme requires positive, very visible and effective leadership from all levels of management (Koch, 1993). There is now general recognition in Libyan health care of the need to have in place formalized structures and programmes, which continually monitor and evaluate improvements. According to Evans (2008) managers recognised that the "quality of management" is as important as the "management of quality". He also started organisations to integrate the principles of quality management system; the concept of total quality management has become more popular. Quality is the new meaning of the organisation at the level of performance excellence, rather than narrow or engineering technical production based on discipline and permeated every aspect of running the organisation.

This research will focus on the changes taking place in quality systems in Libya as part of a comprehensive and broad ranging reform programme, aimed at developing a health system able to provide high quality health services to the Libyan people. It also encompasses an attempt to specify the role of leadership and human resources in working out the features of this system.

The policy on primary healthcare is built on the principle of providing health services for everyone that has been approved by the General Congresses. As for the national strategy for primary health care, it constitutes the basis for the health system in Libya, which has been approved under resolution of the General People's Committee. In Libya, more than

750 centres for primary health care were available, along with 82 hospitals and medical centres. Twenty grouped clinics were prepare and supplied with modern current medical equipments to cover defect in medical and assisting medical staff, according to cooperation and integration agreements (The Libyan health populism committee, 2004). Nowadays, improving the health services in developed countries is a mission as reported widely in the news. This mission is even more difficult to achieve in developing countries due to the limited resources and social economic difficulties, this is one of the main barriers not only in the health services, but also in many other public sectors. According to the available literature and based on my many visits and preliminary investigation about Libyan healthcare sector in general and Tripoli healthcare sector in particular, it has been proven that the reality of government hospitals in Libya is that: these hospitals are facing many problems opposing their improvement, continuity and ability of competition. Health care is going through essential changes and the present health care climate changes on a daily basis (Rad, 2005). For these reasons, we should adopt the modern styles for confronting and conveying these challenges for Libyan healthcare organisations which need to improve their performance in terms of quality care, and reaching excellent performance at all levels operation in each professional field within the organisation, and at all stages.

1.2. Aims and objectives:

The aim of this research is to develop an appropriate TQM framework for achieving performance excellence in Libyan healthcare organisations and benchmarking them and distinguish their competitive advantage. The proposed framework can be used for:

- Developing a new system to measure performance in Libyan healthcare.
- Continuous improvement.
- Identifying a culture that strongly focuses on quality performance.
- Helping in developing and modernising service performance measures.

The aim of the research will be achieved through the following objectives:

- Review the current healthcare system in Libya.
- Review the literature comprehensively to identify and develop appropriate research method(s) in order to identify weakness in the current system and help in developing and justifying the proposed framework.
- Assess the current organisational culture in Libyan healthcare in order to ensure that the developed framework fits into the culture aspect. In other words, identify the organisational culture that is required for implementation of TQM and compare this with the situation that currently exists within Libyan healthcare.
- Develop a TQM framework that is appropriate for Libyan healthcare, which will support the development of managers and employees at different levels in the organisation, and to identify the skills required to successfully implement changes.
- Provide an implementation procedure.
- Propose a set of recommendations for continuous improvement.

1.3. Problem Background:

Undoubtedly, quality is a dream and goal for everyone working within health care (Jackson, 2001). However, the reality of government hospitals in Libya is that these hospitals are facing much opposition to their improvement, continuity and ability of competition. The most important problem is the low level of health service offered to patients. This situation created a climate of mistrust between patients and these hospitals. This led to many patients seeking medical attention, however, although the government invested considerable amounts of money for buildings, tools, equipments and medical staff within these hospitals and health centres, also, these hospitals have no ability to compete with medical organisations abroad which, burdens the government with more losses. There are also many problems relating management, workforce and medical services beneficiaries.

1.4. Overview of the Thesis:

The thesis is organised into ten chapters as follows:

- Chapter one: This chapter illustrates the introduction about Total Quality Management, the research aims and objectives, problem background and the justification of using TQM for confronting the challenges that face Libyan healthcare organisations.

- Chapter two: In this chapter an overview about Libyan health care services is established and data and information about adopted policies, characteristics, difficulties and quality system in the field of healthcare are collected. The main deliverable of this chapter is to provide a clear understanding of the Libyan healthcare and identify Libyan healthcare policies and problems in the current quality system.

- Chapter three: In this chapter some common concepts and definitions of Quality and TQM is introduced. Clear understanding of total quality management by highlighting the important aspects and perspectives pertained to implementing TQM in hospitals and health care. In addition, the historic evolution of TQM and its factors are reviewed. The main deliverable of this chapter is to present and document on the intellectual and philosophical frames of TQM and performance management in the public sector.

- Chapter four: This chapter review of the literature on quality management in order to clarify quality factors and literature support. Short presentations of the most important TQM factors that are generally accepted by many researchers are discussed and presented, which are: *Leadership, Training and Education, Focus on customer, Process and measurement and Continuous Improvement*. In addition, the different National Quality Award, models and frameworks offered by experts that can help organisations in the

implementation process are illustrated. Finally, requirements of total quality management implementation are discussed.

- Chapter five: The main intention of this chapter is to outline the common types of research available in literature and to discuss the research design and methodology. The chapter focuses on main methodologies that can be used in business and management research. This chapter discusses also the research approach and strategy, sample size, data collection method, the data analysis, and tests for validity and reliability process.

- Chapter six: The main intention of this chapter is to examine and discuss the data collected during the survey. Seven leadership factors are chosen from vast literature reviewed these factors were used for developing a self-explanatory survey questionnaire (on a five-point Likert scale ranging from strongly agree to strongly disagree) to collect data from managers and employees at different management levels. The main deliverables of this chapter are to identify the strengths and weakness points of leadership, which help in creating the organisational culture that is required for implementation of TQM. In addition, Statistical analyses are performed using a statistical package for social sciences (SPSS). Moreover, tests for validity and reliability are carried out.

- Chapter seven: This chapter focuses on the identification of the best practice of total quality management (TQM) factors that allow organisations to seize performance excellence and provide a benchmarking tool for the TQM factors. This chapter considers five TQM factors namely: *Leadership, Training and Education, Focus on customer, Process and measurement and Continuous Improvement* which form the basis for the development of a model to measure the performance excellence of healthcare organisations. Analytical Hierarchy Process (AHP) is used to implement the proposed performance excellence model, which is validated through questionnaires within healthcare organisations in the developing countries and in particular Libyan Healthcare Organisations.

- Chapter eight: the main aim of this chapter is to provide a proposed TQM framework that is appropriate for Libyan healthcare. In addition, provides an implementation procedure for the proposed TQM framework and the skills required to successfully implement changes. The main deliverable of this chapter is a TQM framework for achieving performance excellence in Libyan healthcare organisations and provides an implementation procedure.

- Chapter nine: The main aim of this chapter is to study and discuss the data collected during the survey. The survey designed in order to verify/validate the proposed TQM framework and its implementation procedure. All answers provided by the respondents through the questionnaire are classified and

statistical analyses are performed using a statistical package for social sciences (SPSS). Moreover, tests for validity and reliability are carried out.

- Chapter ten: this chapter is the final chapter, the findings, conclusion about this research is provided, and some recommendations are presented. In addition, the limitations of the research are given.

Chapter two:

Studying and analysing the current status

2.1. Introduction: -

Improving health is the main justification for the existence of any health system, in other words, the ultimate goal for any such system. The quality programmes in the health field exist, much the same as in the industrial sector. The quality here is what the patient receives with regard to excellent and safe medical and health services, which is meeting customer requirements (Fuertes, 1999).

Total quality is submitted to the patient by several various medical and health organisations. Any mistake connected with the services or the existence of any medical mistake by those who belong to the medical field, is something that cannot be tolerated if total quality management is to be achieved.

There is no doubt that the benefits from quality programmes require more preparation, arrangement and change within the organisational culture to clarify their aims, and as a result managers should learn to be patient (Bardoel and Sohal, 1999). However, it may not be easy for employees who are working in any sector to accept evaluation of their performance and their progress; this is so because evaluation entails self-criticism and emergence of difficulties and mistakes and thus discussion of the causes in order to find the best possible ways to overcome. In this chapter an overview about Libyan health care services is established and data and information about adopted policies, characteristics, difficulties and quality system in the field of healthcare are collected. The main deliverable of this chapter is to provide clear understanding of the Libyan healthcare and identify Libyan healthcare policies and problems in the current quality system.

2.2. Overview of Libyan Healthcare:

Libya has an estimated population of 5.5 million inhabitants and is one of the largest countries in Africa. It is located in North Africa; and covers approximately 1,770,000 square kilometres. Health nowadays in its scientific concept is part of the national economy and social development in all its dimensions. A new life started by the beginning of the Libyan revolution in 1969, when people started to fight against diseases, poverty, and illiteracy. From the beginning, the revolution gave consideration to the health sector. Health utilities were established and medicines and free treatment made available for all, which led to the disappearance of many diseases and a better living standard. Within a short period, infant deaths were minimized and diseases disappeared. Health services expanded to include the disabled and elderly people all these steps were reflected into a plan of permanent strategy, that health care is considered as a right provided by the community to all citizens without exception, with all necessary efforts to achieve the best rates and dimensions of health services in quality treatment and protective. For this purpose in Libya more than 750 centres for primary health care and 82 hospitals and medical centres were available and 20 grouped clinics were prepared and supplied with modern, current medical equipment to cover replace defective equipment and to assist the medical staff, according to cooperation and integration agreements. At the same time, faculties of medicine, dentists, and pharmacy were established and health education institutions to graduate qualified national elements, to replace the foreigners. All administrative and regulative means where taken to secure a link between health services and other services of concern, such as catering services, environment, and housing with equal and justice distribution and giving priority to distant

areas to be provided with suitable health services. With continuous efforts health services were improving for the better, day-by-day (The Libyan health populism committee, 2004).

Primary health care is the first stage for the national health. As such it is considered as the first stage of communication between the citizen, family and the society. There is no doubt that the primary healthcare is one of the most important cares provided by the country. In addition, it becomes highly important by the nations as peoples are considered a wealth bonanza. The main objective for any primary healthcare is to meet the need of the individual, and improve the performance of the system. The primary health care is now the standard to measure the range or extent of the success pertinent to the health systems.

Primary and social healthcare administration is one of the most important administrations within Libyan health sector. And as a technical, controlling supervisory and specialist administration, it is assigned to laying out plans and programs, the national strategic goal regarding the primary healthcare which is the landmark for the health for all system in Libya and is approved under the general people's Committee number (24) for 1424 on the national strategy to provide healthcare for all people. The primary healthcare includes the following: -

1) Motherhood and childhood section
2) Health information and culture section.
3) Endemic diseases and vaccination section.
4) School health section. .
5) Environmental, professional health section

6) Supervision and inspection section.
7) Statistics, documentation and studies section. (The Libyan health populism committee, 2004).

2.3. The Libyan policy in the field of primary healthcare:

On 25/01/2006 the researcher held an interview with the Healthcare Director in Tripoli and highlighted the policy and difficulties in Tripoli primary healthcare.

The following sections provide a summary of the interview:

2.3.1. The policy of healthcare sector:

The policy of primary healthcare is built on the principle of providing health for everybody, which has been approved by general congresses. As for the national strategy for primary health care, it constitutes the basis for the health system in Libya, and has been approved under resolution of the general people's committee number (24) 1424. The strategy has included the following: -

1) The health system in Libya is considered as being based on primary healthcare.
2) The strategy consist of following principles: -
   - Responsibility of the society is to ensure basic health care for all.
   - Justice in the distribution of health resources.
   - Consideration of healthcare as an investment process and representation of that process as part economic, social and environmental development.
   - Responsibility of all health sectors to provide health service.
   - Use of suitable technology.
   - Participation and responsibility of individuals and families.

- Linking of the citizen with the doctor in the primary care unit according to a family record system and a commitment system to enable access to preventive treatment and qualification services.

3) Health care services include the following elements: -

Global elements:

- Health information and culture.
- Health food and nutrition.
- Safe seated water and environmental safety and cleanliness.
- Baby and mother care.
- Vaccination.
- Endemic diseases avoidance.
- First aid.
- Provision of basic medicines.

Local elements: -

- School health.
- Psychology health.
- Professional (work – related) health.
- Social health and health related to senior citizens.

4) The primary healthcare are consist of three levels: -

- First level: where primary healthcare services are provided.
- Second level: Where more complicated problems transferred from first level, are treated.

- Third level: By which coordination of all parts of the health system takes place and which provides expertise, assessment and development.

5) Strategy implementation: - depends on the following: -

- Development of health administration, training of its cadre, improvement of health information system and medical documentation.
- Focus on national workforce.
- Modernisation and maintenance of health facilities and taking care of their equipment and revolution of the whole process.
- Improvement of supply channels.
- Cooperation with international, regional and Arab organisations.
- Development of financial resources.

Treatment facilities, private clinics and what comes under their field are considered as channels providing medical services for the strategy implementation.

2.3.2. Difficulties of healthcare sector:

However, some difficulties may occur which could lead to reduce standards in service, such as: -

- Defect to secure medical needs were increase by inhabitant's growth, and increase of foreigners in Libya.
- Permanent strategy (free of cost) medication.
- Unfair and unjust blockade imposed on Libya and economic changes which may result in high rate prices.

- The huge number of functions not exposed to permanent dimension not matching services provided which constitute a burden on the balance.
- The existing regulation and organisational structure, which were not able to match these changes.
- Absence of training plans and qualification to match the fast development in diagnosis and medication.

2.4. Summary:

In this chapter an overview about Libyan health care services established and data and information about adopted policies, characteristics, difficulties and quality system in the field of healthcare are collected. In the next two chapters a comprehensive literature review related to Total Quality Management (TQM) will be carried out to have a clear insight into the TQM and its application in health service. In addition, the historic evolution of TQM, its principles, success, barriers and TQM framework will be reviewed.

Chapter three:

Understanding Total Quality Management

3.1. Introduction:

Total Quality Management (TQM) is not a new approach in developed countries. There is however, some experience of its practices in several developing countries.

The quality programmes have to be designed in a way to satisfy the customers' requirements and according to possibilities available. Therefore, the TQM programmes should start to evaluate the case and to try to increase qualifications and abilities in a clear, frank and easy method to implement. Quality is not here only to solve our problems, but to clarify those problems to find the incentive behind them and to cooperate in the best way possible to find solutions for those problems or improve the services (Short & Rahim, 1995). In this chapter some common concepts and definitions of Quality and TQM is introduced. Clear understanding of total quality management by highlighting the important aspects and perspectives pertained to implementing TQM in hospitals and health care. In addition, the historic evolution of TQM and its factors are reviewed. The main deliverable of this chapter is to present and document on the intellectual and philosophical frames of TQM and performance management in the public sector.

3.2. The concepts and definitions of Quality and TQM:

First of all, before deciding to implement changes in business, we need to define quality. If the customer wants quality, what does that mean? The answer is not simple. Quality can be defined as the customer's expectations and requirements; quality contains anything the customer expects and requires, and is ever changing (Hradesky, 1995). Quality is customer satisfaction. (Juran and Gryna, 1993). In addition, McNealy (1993)

indicated that quality is built into an organisation by being competitive, removing consternation, managing costs and by caring. These four reasons illustrate why quality is very important and why now is the time for making quality happen. He indicated that consternation is caused by increasingly large numbers of employees spending more and more of their time doing work over again, because it was not done from the first time. Organisations must care not only about its customers, but also about the community, those living around it, their environment, and its competitive position.

According to Evans (2008) customers today are clever enough to know quality issues that firms face today and the organisation that doesn't listen to its customers is in for a impolite development, or, at worst, a quick failure. This is why an understanding of quality is still very important to every member of staff in every organisation. He added that Joseph Juran, one of the quality gurus in the 1900s, indicated that historians would define the twentieth century as the century of productivity and the twenty-first century should be designated the century of quality.

Total quality management (TQM) has a long life. The Japanese moved in the direction of quality after the Second World War and the United States in the mid-1980s with the formation of the Baldrige Award in 1987. The movement then expanded into to Europe with the establishment of the first European Foundation for Quality Management and the European Quality Award in 1988 and 1989 respectively. So TQM has been around a long time (Williams et al, 2004).

Trials of defining TQM led to several discussions and a large extent of misunderstanding as well as a huge extent of definitions. There are several attempts to define the TQM, and describe its main essentialities; however, there is no unified definition of TQM. It is a

phenomenon that appears to have evolved over a period of time (Haigh and Morris, 2001). So there have been several definitions and each deals with certain aspects. Journal of Organisation Change of Management contacted Edward Deming before he died in 1993, it called on him to present the concept of TQM as being the producers of this concept, but he replied that he didn't know what this concept meant. Deming pointed out that this concept involved a lot of meaning for the researchers; that for each researcher in this field his/her own term related with this concept, even if they are based on the beneficiary's satisfaction (Hegan, 1994). Quality management is a revolution because the philosophy and test methods and tools to discover better ways of doing things, it could be help public sector organisations to fulfil their responsibilities effectively and at a reduced cost to the government and taxpayers, also in the same a time improving services (O'Rourke et al, 2001). Regardless of the differences made by such attempts, there are some definitions that have appeared and found a place within the administrative mind. The following are among such definitions: -

Total quality management (TQM) is a system of activities directed at achieving satisfied customers, empowered employees, higher profits, and lower cost (Juran and Gryna, 1993). TQM is an approach involving many processes that guarantee that this quality subject matter will improve its effectiveness and competitiveness, and ability to adapt to new conditions (Koch, 1993). Also, Saunders and Preston (1994) illustrated that TQM is a system for management, which focuses on improvement in the quality of goods and services provided to customers as the key to business success. Zairi (1994) introduced some definition of TQM which is; TQM is essentially complete set of techniques, and principles of management, technologies and methodologies that put Together to work for

the benefit of the end customer. TQM seeks to devélop organisations through the creation of better planning and prioritise better design. It also aimed at strengthening operations and weak Strong protection areas that give organisations edge over their competitors (through continuous improvement the comparison). In addition, it is about total quality management continuous process of providing the best practices to ensure sustainability, and positive competitiveness. In a sense, it is about the management of change; it is then limitless and timeless in its approach. Likewise, Armstromg (1995) introduced TQM as a key business improvement strategy and the key management matter of the future because it is crucial for activity and competitiveness. Dahlgaard et al (1998) used the definition of TQM by Kanji who defined TQM as the way of life of an organisation committed to customer satisfaction through continuous improvement. Also, it was defined by Oakland (2000), as an entry of activity improvement and work flexibility as a whole and total quality management need a culture change and involving everyone at each level in an organisation. Prajogo et al (2005) indicated that TQM is a management model, which aims to meet customer needs and expectations with an organisation through continuous improvement of quality of goods and services and by merging all functions and processes inside an organisation. In addition, Deming put the responsibility for the continuous improvement of products and services that meet the needs of customers and survive the competition directly to the Department (Tummala et al, 1995). Fuentes (1999) defined TQM as a systematic and participation approach to planning and implementing a process of continual improvement in the organisation which focused on the satisfaction of customers' expectations, identification of problems, and promoting open decision making between employees. Total quality management is one approach that promised to both

improve quality and decrease costs (Ovretveit, 2000). Moreover, Williams et al (2004) defined TQM as a management approach to ensure mutual cooperation among everyone in the organisation and business processes related to the production of products and services that meet needs and expectations of customers. In addition, Toufeak (2004) indicated that TQM is a co-operative form or model to perform business, depending on skills and capabilities of personnel and management staff for the aim of continuity of quality and productivity improvement via employment of work teams. This definition includes the three components necessary for (TQM) success in any organisation: Management by Participation, Continuants Improvement and Teamwork. On the other hand, there is another way to look at TQM, which is to analyse the three words: total, quality and management. According to Kanji and Liu (2003), total means made up of the whole, quality is a degree of excellence a product or service provides, and management means act, art of planning, organising, leading and controlling. Likewise, Haigh and Morris, (2001) indicated that total means organisation wide process involving everyone from the mailroom to the boardroom, quality means establishing quality goals for each and every element in the process of product or service delivery, so as to meet the needs of customers and their expectations from the outset and management does not only mean the commitment of senior management to the goals, but the quality of senior management in the active pursuit of them. In addition, Rad (2005) explained that TQM aimed to meet the needs of customers to prevent poor quality, instead of correcting problems after they happen. Also put the continuous improvement understanding of the importance of performance measurement to identify opportunities for improvement and eliminate sources of inefficiency and costs.

3.3. TQM in Hospitals and Healthcare:

Healthcare is the fastest growing service in developed and developing countries alike. With the rapid development of science and technology and globalisation, there are increased requirements for high-technology medical care. All countries should strive to address the growing need for health facilities in terms of human and material resources (Dey, 2006). Hospitals are being required to focus not only on good medical care and the technical facet of the service, but on the functional facet of care too, such as communication between patients and staff. This illustrates the importance of introducing TQM for the development of these hospitals until they find acceptance by customers (Tomes and Ng, 1995). In healthcare, there is also lack of uniform definition of quality due to the mixture of professional groups and the inherent characteristics of health services. Moreover, understanding the expectations of the customer is not an easy task. The customers often do not really know what they want, or do not tell you directly what they want (Lim, 2000). Dey (2006) indicated that organisations require quality culture that defines the issues and problems in the dynamic system, to propose solutions to these issues and develop a framework to implement these solutions. Moreover, Short and Rahim (1995) indicated that hospital administrators should evaluate and make the necessary adjustments to the structure and philosophy, politics and the administration, before introducing TQM. Even in ideal cases, a successful TQM requires full commitment, and a lot of time and energy. In the health sector, the recognition of quality means continuous improvement, improved results, and providing better care for patients, with the possibility to change the health of all medical, nursing and administration staff (O'Rourke et al, 2001). Likewise, Brashier et al (1996) indicated that healthcare

organisations should take immediate steps to ensure that they provide better care at lower absolute costs. Also, O'Rourke et al (2001) illustrated that a quality framework in the healthcare setting has been defined as one which gives the patient's full satisfaction, the ability to improve health care and acceptance of patients and the community. It will also need to meet consumer needs and expectations, develop the potential of the resources used in the process and the best level of achievement. In short, Koch (1993) summarised TQM in healthcare in the following:

- Putting the patient first.
- Being fully aware of patients' expectations and needs.
- Satisfying patients and satisfying them first time.
- Recognising the cost of poor quality.
- Supporting and encouraging every member of staff in every healthcare organisation.
- Supporting and encouraging staff to reach higher quality and cost effective healthcare services.
- Encouraging professionalism and expertise between all staff.

Therefore, the total quality management has characteristics and merits that make it higher than the traditional quality management, that it includes every individual and aims to serve the consumers. Generally, there are several points that can be formed on total quality management:

1. Quality can mean different things to different people. This leads to different definitions (Dahlgaard et al, 1998).

2. Total quality management is a trip, not an arrival station; it is a continuous, permanent improvement.
3. The goal of total quality management is to satisfy the customer needs and expectations.
4. Total quality management needs time to achieve its results. The TQM literature suggests that success comes to organisations, which are ready for a change in climate. Therefore, organisations should take time to diagnose and identify ways of removing barriers of TQM (Weeks et al, 1995).
5. TQM is not a fast management fix; it is about changing the way things are done within the organisation's lifetime (Kanji and Asher, 1996).
6. TQM insures that management adopts a strategic overview of quality and focuses on prevention, not discovery, of problems (Oakland, 1998).
7. Continuous improvement is everyone's responsibility.

In short, according to Zairi (1994) the challenge for all of us is possibly to create TQM work more effectively in any sector, to make sure that organisations optimise its benefits, to develop it as a philosophy of new management so that it can address future challenges, to disseminate ideas on a large scale, definitions, examples of TQM and its workings and their integration into the education systems.

3.4. Comparison between the traditional and modern quality concepts:

In order that we can compare between the traditional and modern view connected with the quality, and the following table (3.1) shows the comparison between the traditional and modern quality concept.

Table (3.1) Comparison between the traditional and modern quality concept (Haigh and Morris, 2001 and Sharara, 2000).

Comparison field	Traditional concept	Modern concept
Optimum quality level	Optimum quality level exists, so that the customers do not pay for improvement of quality after such optimum level.	Not optimum level but improving the quality is a continuous process.
Key goals for quality control	Conformity for design reaching a rate pre-specified	Conformity for design and suitability for use and zero defects.
Relation between cost and quality	Direct relation	Indirect (reverse) relation
Cost	Expensive	Free
Responsibility for problems related to quality	Quality department is responsible for solving quality problems	All departments are collectively responsible for solving quality problems the quality is the responsibility of all.
Maintenance	Remedial	Preventive
Quality responsibility	Quality is a manufacturing function	Quality is every individual's task
Suppliers	Competitors	Suppliers are members within the team

3.5. The importance of TQM:

An important question that needs to be addressed is what is the importance of total quality management for organisations?

Many global companies have proved clear distinctions by applying them for the total quality management concept and achieved encouraging results in that respect. IBM is a good example of the successful use of TQM and won the Malcolm Baldrige National Quality Award (MBNQA) in Rochester (Williams et al, 2004). The benefits of quality improvement that can be set forth: -

- Less consumer and customer complaints concerning goods and service quality provided to them.
- Less quality costs.
- More market share plus cost reduction.
- Less personnel complaints.
- Less quality defects and more customer satisfaction.
- More profits and productivity and less cost.
- Better cooperation and communication between the organisation units.
- Improve human relations and raise morale and continuous improvement.

These benefits confirm the importance of TQM in improving the productivity and quality as well as the competitive support of the organisation (O'Rourke et al, 2001), (Lee, 2002) and (Alazawy, 2005).

3.6. Evolution of TQM:

The question that comes to mind is whether total quality management represents something new or is it the old thought repetition? Indeed, we have to step back to follow the orientation and evolution of this concept. Martinez-Lorente et al. (1998) listed all important events in the development of TQM from 1924 to 1989 in the Table (3.2).

Table (3.2) important events in the development of TQM (Martinez-Lorente et al, 1998)

Period	Important events
1924-1932	Hawthorne studies demonstrated the importance of the social and psychological climate in work.
1924	Shewhart developed statistical process control.
1926	The Bell Telephone began to apply statistical control methods.
Mid-1940s	The American army pushed the use of sampling methods during World War II.
1950	A large number of attempts at work improvement were undertaken (e.g. job enrichment, work redesign, participative management, quality of work life and worker involvement).
1950	First visit of Deming to Japan.
1951	Creation of "Deming Application Prize" in Japan, first edition of Juran's Quality Control Handbook.
1954	First visit of Juran to Japan and Maslow's theories about human needs.
1960	Liberalisation of economy in Japan with pressure to improve quality to compete with foreign companies. McGregor's X and Y theories.
1961	First edition of Feigenbaum's Total Quality Control.

1962	The idea of quality circles appeared in the first issue of the Japanese journal Quality Control for the Foreman.
Late 1960s and early 1970s	The pressure of Japanese companies began to be felt in American companies.
1972	QFD was developed at Mitsubishi's Kobe shipyard site.
1973	After the 1973 oil crisis the JIT system was adopted by a vast number of Japanese companies. A small number of American and European companies began to apply this system in the 1980s.
Mid-1970s	Quality circles began to be widely introduced in the USA, the first quality circle programme was started in Lockheed in 1974 and in the UK it was Rolls-Royce which introduced the concept in 1979.
1979	First edition of Crosby's Quality Is Free. Xerox Corp. started to apply the benchmarking concept to processes. Publication of the BS 5750 quality management series.
1980	An NBC television documentary about the "Japanese miracle" proposed Deming as a key element in this miracle.
1981	Ouchi's Z theory.
1982	First edition of Deming's Quality, Productivity and Competitive Position.
1983	"Quality on the line", published by Garvin in Harvard Business Review, analysed the differences between Japanese and American companies, showing some of the reasons for the better performance

	of the former. A paper about Taguchi's design of experiments is published in Harvard Business Review.
1985	The Naval Air Systems Command named its Japanese-style management approach "total quality management".
1986	First edition of Deming's Out of the Crisis. It became a best seller.
1987	First edition of ISO 9000 quality management system series.
1987	Publication of the Malcolm Baldrige National Quality Award.

3.7. Quality Gurus:

There are many senior scientists who contributed in pushing the development of total quality management forward. So, the researcher discusses the early gurus to activate total quality management and the basic principles for such concept.

3.7.1. Edward Deming: -

Edward Deming was born in Iowa in October 1900. He was one of the early pioneers concerned with total quality management; and was also called the father of total quality. He started his life in U.S.A. as a specialised professor in statistics, he then traveled to Japan to teach the Japanese how to use statistical methods in control and he was instrumental in Japan taking superiority in this field. The Japanese government named a prize in is honour (Deming prize); this is granted annually to each company in recognition of the invention of quality management programs. The Japanese learnt that higher quality means less cost (Kanji, 2001), (Hakes, 1995) and (Kruger, 2001). Deming

illustrated 14 points to improve the quality of products and services that can be achieved to reduce the differences in the design and manufacturing. Manaf (2005), Hakes (1995), Kruger (2001), Kanji (2001), Haigh and Morris, (2001) indicated that Deming 14 points are: -

1- Creating a stable goal to improve the product and service for competition as well as finding job opportunities.
2- Adoption of new philosophy.
3- Depending on statistical witnesses rather than wide-range inspection and checking methods.
4- No more evaluation of works based on price but the alternative is less total cost and not the initial cost when dealing with suppliers.
5- Continuous improvement forever all operations connected with planning and production and reduction of lost products.
6- Using modern methods for training and education.
7- Adoption of modern approaches of supervision, to help machines and the workforce to do a better job.
8- In order that company members can work effectively, the administration must make them feel relief and comfort.
9- Break down barriers between the departments and individuals who are responsible for production and service, and design and sales, in such a way to work as one team to rectify the different problems.
10- The goal is to motivate the personnel to reach zero defects via scientific approaches. Posters and slogans would no longer be used.

11- Elimination of work criteria based on numerical staff of the man power of the numerical goals of the administration.

12- Remove the barriers that rob the hourly workers of pride in their workmanship.

13- Performing a set of educational and training programs alongside the self-improvement.

14- Put all the works in the organisation in teamwork for achieve administrative and productive process associated with the above points.

3.7.1.1. The Deming Wheel (PDCA): -

Deming's contributions in this respect are proposals related within an improvement cycle that is called Deming Wheel or Cycle (PDCA). The Deming Wheel that means plan, do, check and act (PDCA) was originally conceived by Shewhart, and later adopted by W. Edwards Deming. The completion of one turn of the cycle leads into the beginning of the next (Kanji, 2001).

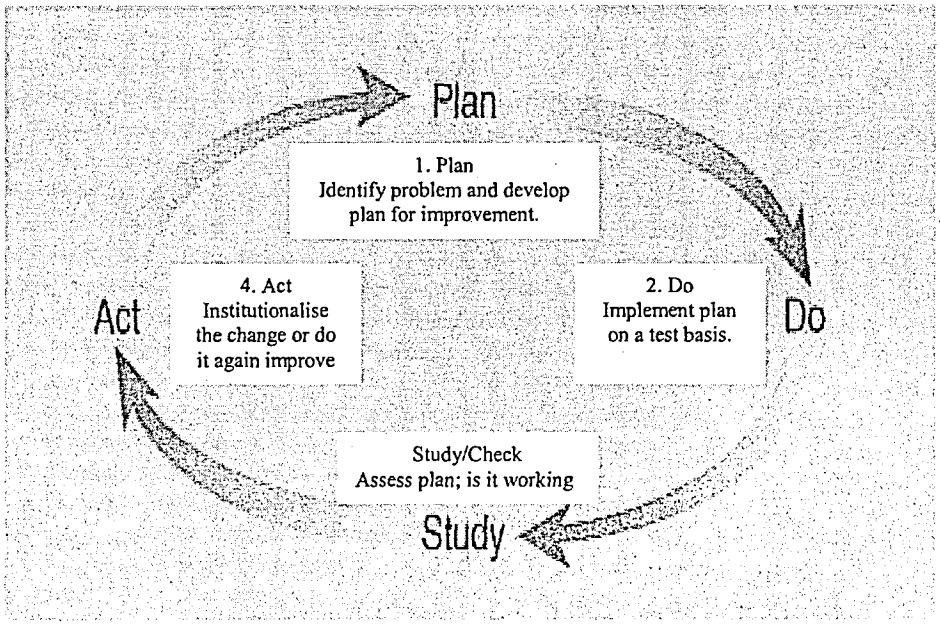


Figure (3.1). The Deming Wheel (PDCA)

Due to the importance of improvement cycle (PDCA), we are going to discuss it in some detail as follows: -

- Plan: by focusing on customer requirements, with the involvement of directors and employees who will plan together to improve the system.
- Do: Conduct small-scale test of revised plan, and all have to record the difference and the remarks are to be registered.
- Check: The study and test results are studied and analysed, and the changes relating to the elements and their effect on other elements.
- Act: Here, all test results are studied, analysed and discussed, and the changes relating to the elements and their effect on other elements (Hakes, 1995), (Morgan and Murgatroyd, 1997) and (Kanji, 2001).

3.7.2. Juran Joseph:

Juran's main contribution: quality control must be conducted as an integral part of the administration's task. He contributed effectively in the field of quality after WWII; we can say that Juran's main focus was on quality management and how to present his thoughts to the high-level administration people simply and clearly (Kruger, 2001). To achieve that, he translated his thoughts in a form called the Juran Trilogy of Management process.

This Trilogy includes: Quality planning, quality control, quality improvement (Manaf, 2005). This illustrates TQM on the triangle consisting of the quality defined, as a focus on customers and teamwork, in the sense that every person in all parts of the organisation work together to improve operations and implementation efficiency The scientific method, including the use of data and statistical methods in the study of each

organisational process research on the root causes of the problems that may be found in the organisations (Saunders and Preston, 1994).

3.7.3. Philip Crosby:

Kruger (2001) indicated that Crosby (1926) was the first person who called for "zero defects" and "do it right the first time". He illustrated that quality is free. It is not a gift, but it is free. He pointed out that it is can be measured as the costs of non-compliance identical to the cost of quality and costs of the wrong things. It provides general administrative services so that quality is the responsibility of every employee in the company. It is not the quality of management, which is responsible for solving the problems of this administration, but is not subject to direct control or access. Crosby gives four absolutes for quality management.

1- Direct- do it right first time.

2- System of quality is prevention.

3- Zero defects.

4- Measurement of quality is the price of non-conformance.

3.7.4. Kaoru Ishikawa:

He is the adopter of quality circles idea; since he was the first who called for small groups of personnel, consisting of 4-8 personnel, their task is to identify the problems they face during their practice to the works and proposing the solutions as they see fit. He also confirmed that it is necessary to use the statistical control methods of quality, and the most important among them is so called the Classic 7 Tools (Kruger, 2001). These tools require minimum statistical knowledge, and contain the following: -

The Ishikawa chart (Fish Bone diagram, cause-effect diagram), Flow Charts, Pareto analysis, Control Charts, Histograms, Check-sheets and Scatter plot, Ishikawa believes that most quality problems can be solved by using the classic 7 points (He et al, 1996).

In addition, there were many scientists and authors who also had contributions related with quality and pushing them forward. However, the researcher mentions those who have distinguished contributions in this area compared with other. Finally, we can see that the seeds and roots of total quality management were sowed years ago. It took more than fifty years to grow them to be in the current appearance.

3.8. Summary:

The chapter introduced the meaning of quality and total quality management (TQM). Some common concepts and definitions of Quality and TQM have introduced. In addition this chapter illustrated that TQM in hospitals and healthcare are the fastest growing service in developed and developing countries alike. Comparison between the traditional and modern quality concepts has been presented. Moreover, the benefits of quality improvement were summarised. Besides, the historic evolution of TQM illustrated. Finally, there are many senior scientists who contributed in pushing the development of total quality management forward were discussed. In the next chapter a more review of literature on quality management will made in order to clarify quality factors and literature support of TQM. In addition, a short presentation of the most important TQM factors that are generally accepted by many researchers will be discussed and presented.

Chapter four:

Total Quality Management and its Requirements

4.1. Introduction:

It can be said that these intellectual and philosophical writings in the field of quality management, which were presented in the previous chapter have paved the way for the possibility of drafting a number of factors which show the basic of the total quality systems indicative rules that enable organisations to develop the philosophy of total quality management implementation. In spite of the limited differences between researchers in the field of total quality management on what are the key factors of the total quality management systems are numbered in this section. In this chapter the researcher will give a short presentation of the most important factors that are generally accepted by many researchers, which are: *Leadership, Training and Education, Focus on customer, Process and measurement and Continuous Improvement.*

4.2. Factors of TQM:

Along the development of total quality management, many factors and concepts have appeared which are considered an advantage that allows the effective application of total quality management for any organisation. Moreover, they represent the essential support for the philosophy of this introduction.

The basic factors of total quality management are discussed in the following section:

1- Leadership.

2- Training and Education.

3- Focus on customer.

4- Process and measurement.

5- Continuous improvement.

4.2.1. Leadership:

Leadership is an elusive concept like many complex ideas. However, it is difficult to find a general definition of leadership. Northouse (1997) introduced that Leadership is the process of individual influences by a group of individuals in order to achieve a common goal. The activity of leadership cannot be carried out without followers to lead, and what leaders do is to influence the behaviour, beliefs and feelings of other teamwork in an intended direction (Wright, 1996). A review of scientific studies showed that different theories which explain the complexities of leadership. Some researchers imagine leadership as a trait, or behaviour, while others view leadership from a political perspective, or from a humanistic viewpoint (Northouse, 1997). In addition, all senior managers should create clear and visible quality values and high expectations and build them into the way the organisation operates. This requires their personal commitment and involvement in substantial proportions (Tummala and Tang, 1994-95). Thus, total quality management can be given the opportunity to prepare the organisation to make the decisions according to the facts to solve the problems, so all the workers could perform in accordance with their different levels as well as the customer's participation through the comprehensive understanding of the work and its problems and all the information representing the basis of making decisions which depends on qualified staff for the information systems at the organisation.

4.2.2. Training and Education:

Education and training are key factors in TQM, including the process of learning TQM approach (Kanji and Asher, 1996). It is the best way to overcome the problem of the quality of organisational through the exercise of TQM. It is necessary to identify the core activities that affect the management and organisational systems, through education and training, research and consultancy of TQM (Kanji, 2001). Training is the most important factor in improving quality (Oakland, 1998). Moreover, Huq (1996) indicated that there is general agreement that education and training are vital. Adopting TQM training programs for senior officials and middle-level managers, doctors and all staff members to take an objective approach of how far and how fast they should be trained. Deming considers training is the long-term investment in people and the future of the company. Continuous training helps users improve the quality of performance and quality of work and processes they are responsible for (Kruger, 2001). Bad care is expensive in a monetary sense. So, healthcare organisations must take immediate steps to provide the best care at the lowest costs. For a TQM programme to be successful, each employee must be provided with training, which is one of the biggest investments in TQM (Brashier et al, 1996). Zairi (1994) indicated that there are many people who are still without distinguishing between education and training. Training addresses the skills and knowledgebase to deal with a specific task, plan or current work. Education is the development people regardless of the jobs they work. Sometime, based on the belief well-educated people can contribute more effective because they raise their creative

potential. In addition, the best intellectuals are more flexible and more adaptable to change.

4.2.3. Focus on customer:

This concentration comes, as the customer is the first of quality controller. The effective evidence is attributed as in the IBM report, which showed the big successful companies' major concerns are to ensure that customer satisfaction was paramount. Also, it is no longer enough just to conform to customer requirements; you must satisfy them in every aspect (Hakes, 1995). Quality is meeting customer requirements. The word "customer" now also needs to include external and internal consumers (Kanji, 2001 and Oakland, 1998) It should also include along with units inside the organisation, whether they were administrative departments or individuals that they were seen as a supplier and a customer at the same time, that is, the department which is performing task is a customer for the previous department and is also a supplier for the next department, so the word customer, here, is more inclusive than it means. Tummala and Tang (1996) illustrated that all the quality gurus stated "the customer must define quality". Juran and Crosby have underscored this concept by defining quality as "fitness for use" and "conformance to requirements" respectively. Thus, customer focus must be the whole goal of all quality implementation.

4.2.4. Process and measurement:

We are all consumers when we obtain a service or a product. If the product does not satisfy our needs or increase our expectations; we usually go to the competitor or complain if we believe that the complaint would lead to a positive result. Total quality

management applies prevention against inspection, which means, "right the first time" (McNealy, 1993). Organisations must stop using fire-fighting policy in managing the works, and use methods and administrative policies that prevents mistakes and problems; it should start using the criteria for measuring the products or services that can be measured instead of using the criteria after making mistakes. This should ensure that management is focused on the improvement of all processes within the organisation.

Because of the impact of direct operations on the quality of service use of the word total means that quality must include all activities and operations at all levels. In addition, the improvement of the service comes through improved process and the system as a whole, in all its components, namely that this depends on prevention rather than detection errors after verification (Madee, 2002). Many organisations use monitoring systems to identify strengths and weaknesses in performance, and measure progress towards achievement of the objective levels of performance through measurement. One of these tools is benchmarking which is used to measure the progress of the organisation towards a certain level of performance. (Weeks, 1995). This is the permanent desire of the organisation to achieve step-by-step and tangible improvement in processes, products and services which they provide, this can be achieved in several ways, but the most important and most used one is Benchmarking (Madee, 2002).

4.2.5. Continuous improvement:

Improving performance, productivity and efficiency in the use of all resources should be the goals of continuous improvement of all processes, and the work of each of the organisation's activities (Tummala & Tang, 1996). According to Evans (2008) continuous

improvement is part of the management of all systems and processes. Achieve upper levels of performance needs well-defined well-executed approach to continuous improvement and learning. He added that continuous improvement refers to together incremental and breakthrough improvement. In addition, Kanji (2001) indicated that the continuous cycle of establishing customer requirements, meeting those requirements, and to measure the success and continued improvement, can be used both externally and internally to support the engine of continuous improvement. By continually checking customers' requirements, a company can keep finding areas where improvements could be made. O'Rourke et al (2001) pointed out that the benefits of quality improvement are optimised if other reforms and improvements are going on at the same time as part of a more extensive and comprehensive change process. For example:

- Licensing and certification helps to ensure minimum standards of growth are met.
- Data management systems improve health and provision of health system performance.
- Training programs help to improve the clinical skills and focus on the clinical practice. Improving the management ability of the value of quality systems and techniques to meet the goals and future goals.
- Renewal of the civil works and the development of physical capabilities and the design and planning of hospitals, which lead to increasing the efficiency of the building in respect of comfort and functionality.
- The purchase of equipment and maintenance policies that help ensure the quality and technological ability in the health and ensure the value of the funds invested.

Evans (2008) indicated that improvement might be of some types:

- Enhance the value to the customer through new products and services.
- Improve productivity and improve operational performance through improved work processes and reductions in errors and defects.
- Improve flexibility, reaction and performance of cycle time; regulatory and improve operations management through learning.

4.3. List of quality factors and literature support:

A review of literature on quality management was made in order to clarify quality factors and literature support. Table (4.1) below shows a list of quality factors and literature support.

Table (4.1) List of quality factors and literature support.

Quality factors	Supporting literature
Leadership	Warden, 2002; Tummala and Tang, 1994-95; Kanji, 2001; Oakland, 1998; Tummala and Tang, 1996; Dahlgaard et al, 1998 ;
Training and Education	Kanji, 2001; Oakland, 1998; Huq, 1996; Kruger, 2001; Kanji and Asher, 1996;
Focus on customer	Hakes, 1995; Oakland, 1998; Kanji, 2001; Tummala and Tang, 1996; Dahlgaard et al, 1998; Fuentes, 1999;
Process and measurement	Madee, 2002; Oakland, 2000; Fuentes, 1999;
Continuous improvement	Tummala and Tang, 1996; Kanji, 2001; Rourke et al, 2001; Dahlgaard et al, 1998 ; Madee, 2002; Evans, 2008;

4.5. Models of TQM:

The 1990s saw the beginning of a real challenge in the field of total quality management which are represented by the creation of systems and models and methods of integration, enabling practitioners to develop quality principles to put into practice in organisations. There is no-one-size-fits-all model. However, the different models offered by experts can help organisations in the implementation process (Madee, 2002). Several countries have established national quality awards or performance excellence awards. In the USA the premier award is the Malcolm Baldrige National Quality Award (MBNQA). In the UK, there is the UK Quality Award. In Europe, there is European Quality Award (EQA). In Japan, there is the Deming Award and Japan Quality Award (JQA). In Singapore there is the Singapore Quality Award (SQA). Most national quality awards use a framework of criteria that seeks to evaluate an organisation's quality related performance (Lee, 2002). In addition, Kanji and Asher (1996) developed a structured framework called the Pyramid Model for TQM, which illustrates the principles of TQM as a pyramid. The model consists of four main principals and each principal is divided into two-core concepts, see Table (4.2). They claimed that the model could lead the organisation to improve its performance and assess the overall situation by identifying the areas of strengths and weaknesses. They illustrated that this model is a workable tool in order to put TQM into practice.

Table (4.2) Principles and Core concepts of TQM

Principles	Core concepts
Delight the customer	Customer satisfaction Internal customers are real
Management by fact	All work is process Measurement
People based management	Teamwork People make quality
Continuous improvement	Continuous improvement cycle Prevention

In addition, Lim and Tang (2000) developed a model for total quality healthcare using quality function deployment (QFD) this model consists of seven parts; service planning, operational planning, new concepts deployment, task deployment chart, treatment protocol plan, training plan and equipment plan. They illustrate that the implementation framework offered can be understood clearly and quickly and learnt by team members and staff within two to three months. QFD also provides a way to understand the voice of the customer. Moreover, O'Rourke et al (2001) considered that internationally in recent years, there has been a quality revolution focussed on quality elements such as customer satisfaction, development of the full ability of the workforce and improving performance. Today many organisations and governments worldwide need very much to adopt quality management as at the centre of these changes. Jackson (2001) suggested that leaders have to learn more and more knowledge, expertise and skills before embarking on implementation of TQM in health care; also completing TQM takes time and effort from everyone within the organisation. Kanji (2001) suggested that the process of implementing TQM in an organisation could be practiced through four specific stages:

identification and preparation, management understanding and commitment, scheme for improvement and critical analysis. Likewise, Lee (2002) developed a model based on the Singapore Quality Award for achieving business excellence. The research involved a case study approach to document the best practices in organisations, which were winners of the Singapore Quality Award, and this model can easily be used as a framework for organisations, which want to implement TQM. Chin et al, (2002) developed a hierarchy model using the analytic hierarchy process (AHP) to prioritise the critical factors and formulate strategies to implement TQM in Shangai and other cities in China. They believe that the model as shown in Figure (4.1) may assist organisations to identify the differences between the desired and current situations, and then identify the improvement areas and develop the strategies for the TQM implementation.

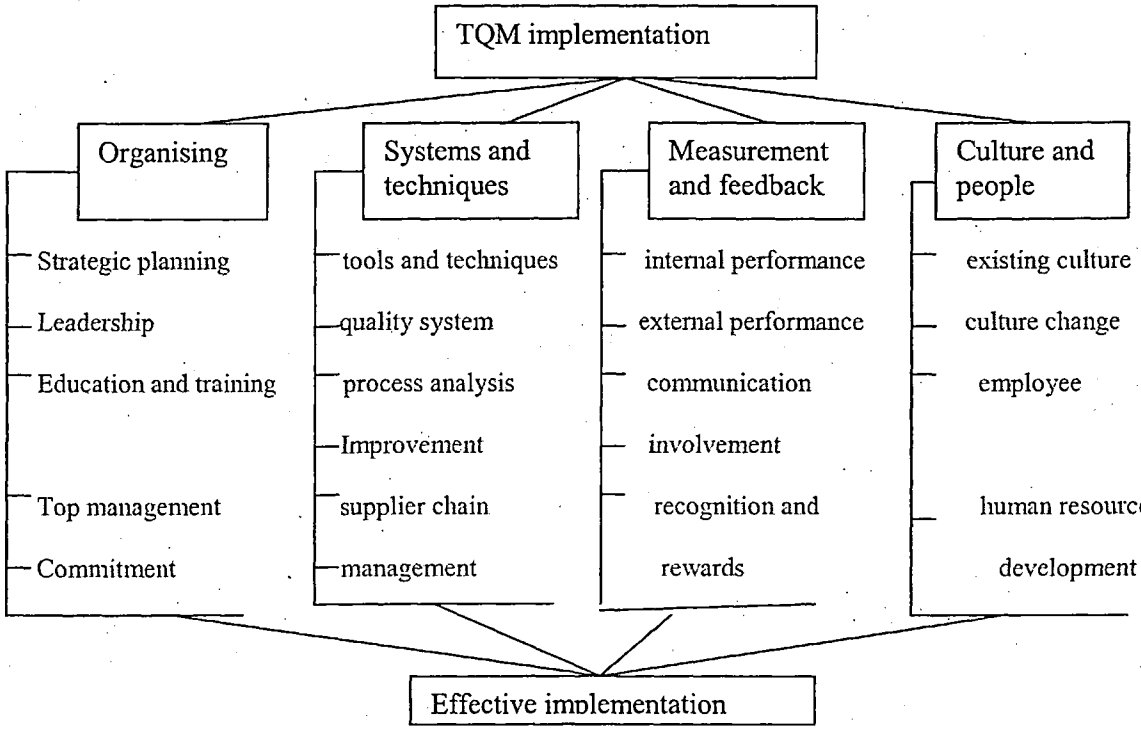


Fig (4.1): hierarchy model using the analytic hierarchy process (AHP) (Chin et al, 2002).

In addition, Chow and Luk (2005) developed a framework using AHP methodology to measure the service quality, they believe that this framework allows management to address two main issues pertaining to its competitive advantage; establishing its performance ranking in the marketplace; and identifying the service elements that most require improvement. Moreover, Chan et al, (2006) developed a new benchmarking process for continuous improvement versus the market leaders in their field. AHP methodology was developed to divide the benchmarking process into two main parts: performance evaluation and continuous improvement. This would provide a framework for benchmarking the logistical performance of the postal industry. The proposed framework can help the companies to illustrate its weaknesses and then choose the correct alternative in order to improve its performance against the market leader.

4.6. Requirements of total quality management implementation: -

A review of the literature suggests that there is no general agreement on the elements representing the requirements of total quality management implementation. Some obtain only seven points, others see them as only ten factors, and some go even further to more and more. However, the difference in numbers is not a major disagreement in the matter. The implementation of TQM requires the following: -

1- Support the high administration for programmers of total quality management: - Moustafa, (2001) and Madee (2002) indicated that one of the most important factors that ensure the successful implementation for total quality management is the support of high administration. It is also essential that this administration be entirely aware of

the total quality that should be complied with and carried out at all times. The high administration role is represented for the implementation of such fields in the following: -

- Continuous support to this introduction.
- Declaration of applying this introduction to all directors and personnel and the obligation to implement plans and programs which would connect with quality improvement on all levels.
- Allocation of human and financial resources required in applying this introduction.
- Decentralise an authorities and responsibilities with apropos as an essential base for total quality management.

Zairi (1994) indicated that senior managers will every opportunity to blame, the search for scapegoats and perhaps when their difficulties announced that the total quality management has failed, not really work. They would not of course qualify the meaning of the term "failure". In many cases, but the failure associated with the implementation of total quality management is not in fact the failure of total quality management to achieve results, but the failure of managers to introduce total quality management in an effective way.

2- Preparation of the climate of work and organisation culture: The implementation of total quality management depends on comprehensive preparation of the culture within the organisation to ensure that all its aspects will be compatible with the

principles and philosophy of this introduction. Considering the organisation culture is very important in this study and will be addressed later.

3- Getting the customer involved with quality concern. The customers desires drive the system of total quality management, identifying the properties required and expected by the customers and building them into the products and service (Oakland, 1998), some authors went to the necessity of knowing what is needed by the customer, even if he didn't know himself, that the consumer needs the change and have to create the organisation which can meet such needs (Lim, 2000).

4- Measuring the performance: Weeks (1995) illustrated that one of the requirements of total quality implementation is measuring the performance which is necessary to measure the progress of the organisation towards a certain level of performance in order to make continuous improvement easily.

5- The effective administration of the human resources at the organisation: The human resources are considered to be the driving power for continuation and success of total quality management; the humans are the most important supplier to achieve the total quality. So, it is important to attract attention to them through good administration, which focuses on training programming and continuous motivation, as well as building the teamwork of self-administration, and building the participation methods making these decisions (Moustafa, 2001).

6- Continuous training and education: The implementation of total quality management makes it necessary for training and teaching to be undertaken by

personnel and directors of the organisation, which will aim to outline the concepts and basic principles for this introduction [(Kanji (2001) and Madee, (2002)).

7- Adoption of leading models appropriate for total quality management: The leading models are considered appropriate for the introduction of total quality management, which strives to provide a good climate in order to encourage individuals who have ability and desire to achieve their goals (Madee, 2002).

8- Comprehensive participation by all personnel within the organisation: The introduction of total quality management requires removing barriers which can obstruct efforts in improving the quality in order that each individual can work for the organisation as part of a team. This is a powerful approach because of its ability to obtain results as well as its developmental contributions (Hradesky, 1995).

4.7. The gaps in this area:

Total Quality Management (TQM) is not a new approach in developed countries. There is however, some experience of its practices in several developing countries. However, the quality gurus have never agreed about a specific framework or implementation procedure. Moreover, there is no one size offered by experts fits all model. In addition, (Haigh et al, 1998) indicated that there is lack of a general model in health care, and there is no clear agreement as to the way in which TQM should be implemented in a health care sector.

A review of the literature suggests that culture change is considered to be one of the most important desired results. The implementation of total quality management depends on comprehensive preparation of the culture within the organisation to ensure that all its

aspects will be compatible with the principles and philosophy of this introduction. According to Evans (2008) for organisations committed to pursuing performance excellence, change is a method of life. Organisational change is necessary for the implementation of quality plans. In the first phase, an effort should be mounted to start changing the culture of the organisation. He added that a major strategic change that organisations should make is pursuing performance excellence is a change in culture which is the set of beliefs and values shared by the individuals in an organisation. According to Zairi (1994) the challenge for all of us is possibly to create TQM work more effectively in any sector, to make sure that organisations optimise its benefits, to develop it as a philosophy of new management so that it can address future challenges, to disseminate ideas on a large scale.

Dey (2006) indicated that organisations require quality culture that defines the issues and problems in the dynamic system, to propose solutions to these issues and develop a framework to implement these solutions. Moreover, Short and Rahim (1995) indicated that hospital administrators should evaluate and make the necessary adjustments to the structure and philosophy, politics and the administration, before introducing TQM. According to Evans (2008) the existence of a culture and values necessary for achieving performance excellence does not mean that all organisations that desire to implement total quality should have the similar culture. Several aspects of culture differ very much from one quality-oriented company to another. Therefore, the researcher thinks that the success stories that reached global organisations in the implementation of total quality management do not mean at all that it is a model for copies. In general, each organisation has internal and external conditions. Thus, the proposed TQM framework could assist the

decision-makers in Libyan healthcare sector in implementing TQM, which could support the development of managers and employees at different levels in the organisation and achieving performance excellence in Libyan healthcare organisations.

4.8. Summary:

In this chapter, a review of literature on quality management was made in order to clarify quality factors and literature support. In addition, a review of the literature suggests that there is no general agreement on the elements representing the requirements of total quality management implementation. Therefore, a short presentation of the most important TQM factors that are generally accepted by many researchers are discussed and presented, which is: *Leadership, Training and Education, Focus on customer, Process and measurement and Continuous Improvement.* The different National Quality Award, models and frameworks offered by experts that can help organisations in the implementation process are illustrated. Finally, requirements of total quality management implementation are discussed. After the literature was discussed and presented in the previous two chapters it is essential to look at research methodology. Therefore, in the next chapter the methodologies that can be used in business and management research will be discussed and identified. In addition, the research approach and strategy, sample size, data collection method, the data analysis, and tests for validity and reliability process will be presented.

Chapter five

Research Methodology

5.1. Introduction:

The main intention of this chapter is to outline the common types of research methods available in literature and to discuss the research design and methodology. The chapter focuses on main methodologies that can be used in business and management research. The research approach and strategy, sample size, data collection method, data analysis, and tests for validity and reliability process are also discussed.

5.2. Understanding research:

There is no agreement in the literature about an exact definition of research. Research is a process that is almost impossible to define. It is able to cover a large range of studies, from easy explanation and investigation to the construction of difficult experiments, (Moore, 1987). Hussey and Hussey (1997) indicated that there is no agreement in literature on how the research should be defined. One cause for this is that research means different things to different people. However, from the several different definitions existing, there shows to be agreement that:

Research is a procedure of enquiry and investigation.

It is systematic and methodical.

Research increases knowledge.

Remenyi et al (1998) indicated that there are two levels which should be considered when asking the question why research? The need for study is related to the fact that there are several issues and topic on which we have incomplete knowledge and the next level is related to Homo sapiens compulsive require for growth. He added that in business and management the main meeting point of research should be on issues related to improving

the efficiency and effectiveness of the business and management method. The focus of this research will be on the area of business and management research.

5.3. Types of research:

Choosing a research strategy is a significant role in business and management research. A research strategy could be viewed as providing the overall way of the research including the process by which the research is conducted (Remenyi et al, 1998). Research means different things to different people, and this leads to different types of research. Table (5.1) below by Collis and Hussey (2003) classified that the types of research fall into many parts, for example the purpose of the research (why are you doing it), the process of the research (the way in which the data can be collected and analysed), the logic of the research (which can be moving from the general to specific or vice versa) and the outcome of the research (whether can be trying to solve a particular problem or make a general contribution to knowledge).

Table (5.1) Classification of main types of research Collis and Hussey (2003).

Types of research	Basis of classification
Exploratory, descriptive, analytical or predictive research	Purpose of the research
Quantitative or qualitative research	Process of the research
Deductive or inductive research	Logic of the research
Applied or basic research	Outcome of the research

5.3.1. Purpose of the research (why are you doing it):

5.3.1.1. Exploratory research:

Exploratory research used in the search problem or issue when there are very few or no earlier studies which we refer to to obtain information on this issue or problem. The goal of this type of research is to look for ideas or hypotheses, instead of testing or confirming a hypothesis. Case studies, observations and historical analysis techniques are the most that can be used to provide quantitative and qualitative data. Exploratory research provides direction on what future research, if any, should be carried out (Collis and Hussey, 2003).

5.3.1.2. Descriptive research:

Descriptive research illustrates an existence phenomenon, as they exist. Moreover, to identify and provide information about the characteristics belonging to a specific issue or problem. Statistical techniques are commonly used to collect data, which are often quantitative. Descriptive research tests problems in more depth than exploratory research (Collis and Hussey, 2003).

5.3.1.3. Analytical research:

Analytical research is a type of descriptive research. On the other hand, it attempts to analyse and clarify the reasons why or how some descriptions happen. Analytical research aims to discover and evaluate relation between the studied phenomena (Collis and Hussey, 2003).

5.3.1.4. Predictive research:

Predictive research aims to find out general findings by predicting certain phenomenon based on hypothesised and general relations. Whereas analytical research concentrates on

explaining the causes of a particular situation, predictive research predicts the possibility of a similar condition in a dissimilar place (Collis and Hussey, 2003).

5.3.2. Process of the research (the way in which the data can be collected and analysed):

5.3.2.1. Quantitative research and qualitative research:

Collis and Hussey (2003) indicated that quantitative research could be objective nature that focuses on assessing phenomena to provide measured results. It aims to collect and examine numerical data by using statistical methods. On the other hand, qualitative research can be more subjective in nature and contain investigative and reflecting on perceptions to get an understanding of social and human actions.

5.3.3. Logic of the research (which can be moving from the general to specific or vice versa):

5.3.3.1. Deductive research and inductive research:

Deductive research "is a study in which a conceptual and theoretical structure is developed and next tested by empirical observation". It can be moving from the general to particular. Inductive research on the other hand "is a study in which theory is developed from the observations of empirical reality". It can be moving from the specific to the general (Collis and Hussey, 2003).

5.3.4. Outcome of the research (whether can be trying to solve a particular problem or make a general contribution to knowledge):

5.3.4.1. Applied research and Basic research:

Collis and Hussey (2003) indicated that applied research could be designed to employ its findings that might be used to resolve a specific, existing problem. Basic research on the other hand, is designed to develop the knowledge in general issue instead of resolving a specific problem for one organisation. It aims to make a contribution to knowledge.

According to the available literature and based on my many visits and preliminary investigation into the Libyan healthcare sector in general, and Tripoli healthcare sector in particular, it has been proven that the reality of government hospitals in Libya is that: these hospitals are facing opposition to their improvement, continuity and ability of competition. The most important problem is the low level of health service offered to patients. In addition, these hospitals have no ability to compete with medical organisations abroad, which burdens the government with more losses.

Improving healthcare is the main justification for the existence of any health system, in other words, the ultimate goal for any such system. The quality here is what the patient receives with regard to excellent and safe medical and health services, which is meeting patient requirements. Therefore, a comprehensive review of the literature has been carried out to find a theory that could be an appropriate method in order to identify the weakness in the current system and achieving performance excellence. There are different methods which can be used to achieve this, for example, Total Quality Management (TQM), Just-In-Time (JIT), Six sigma and Lean.

Naslund (2008) indicated that Lean has been marketed as a new organisational change and improvement method, mainly as a cost reduction system. He added that six sigma has been supported as a new organisational change and improvement method. Aghazadeh (2004) illustrated that JIT is a philosophy of problem solving with the aim of cutting cost and eliminating waste. Naslund (2008) pointed out that the aim of TQM, as with any change method, is to improve organisational performance. It highlights the importance of satisfying customer needs in conditions of availability, delivery, reliability, maintenance, and cost effectiveness. In addition, he compared the goals, approach, tools, history and critical success factors (CSF) of TQM to six sigma and from JIT to lean. In addition to reviewing the publication frequency in academia, the conclusion is that lean and six sigma basically share the same basic approach to change with JIT and TQM.

From the discussions above, the researcher found that Total Quality Management (TQM) would provide the solution for Libyan Healthcare Organisations.

TQM is a way of managing to improve the effectiveness, efficiency, flexibility, and competitiveness of a business as a whole. Health care managers have to find new ways to provide services to meet these needs. In addition, there are several reasons for healthcare organisations looking for quality. These include: increased demand for appropriate, effective and efficient health care services, and the need to consolidate and reduce the differences that increase the cost of services, reduced costs and increased pressure from the markets, and market development (Rad, 2005). Hellsten and klfsjo (2000) indicated that TQM is a management system and any system should have an aim, without an aim there is no system. TQM does not directly provide you with aims; it provides a method for systematically achieving your aims. Therefore, the focus of TQM is on continuous

improvement, not the achievement of fixed aims (Brannan, 1997). According to Rad (2005) the objectives of total quality management is to meet the needs of customers, and prevent poor quality rather than correct problems after they happen, to develop an approach of continuous improvement, to understand the value of performance measurement, to find opportunities and improvements, and to remove the sources of chronic inefficiencies and costs. However, (Haigh et al, 1998) indicated that there is a lack of a generic model in health care, and there is no clear agreement as to the way in which TQM should be implemented in a health care context. Therefore, the importance of this research is to identify an appropriate TQM framework for Libyan healthcare organisations and benchmarking them to distinguish their competitive merit. For that reason, exploratory, descriptive and analytical researches were chosen to facilitate the research objectives. This started with exploratory research to review the current health care system in Libya, by reviewing the literature comprehensively in order to identify and develop appropriate research method(s) and in order to identify the weakness in the current system and help in developing and justifying the proposed framework and make clear understanding of total quality management by highlighting the important aspects and perspectives pertained to implementing TQM in hospitals and health care. In addition, the historic evolution of TQM, its factors, successes and its barriers were done. In the secondary data, experience survey and pilot study techniques were carried out to provide quantitative and qualitative data and moreover to provide direction on what future research, if any, should be carried out. The aim of this dissection was to collect as much information as possible before collecting primary data due to the limited resources and social economic difficulties in the developing countries, which is one of the main

barriers not only in the health services, but also in many others public sectors. After that descriptive research was used. Assessment of the current organisational culture in Libyan health care was carried out; if we wish to implement the total quality management successfully as a strategy, the managers need to understand their organisations culture. Then analytical research was used to analyse and discuss the data and information collected from the questionnaires. Based on the analytical research the results and conclusion were abstracted.

In short, the research process went through a multi-stage process see Figure (5.1). The stages include formulating and clarifying a topic, reviewing the literature, choosing a strategy, collecting data, analysing data and writing up. (Saunders et al, 2000) indicated that at the same time as you will need to pass during the stages, you will also perhaps need to revisit all of them more than once to reflect on the related issues and to refine your ideas.

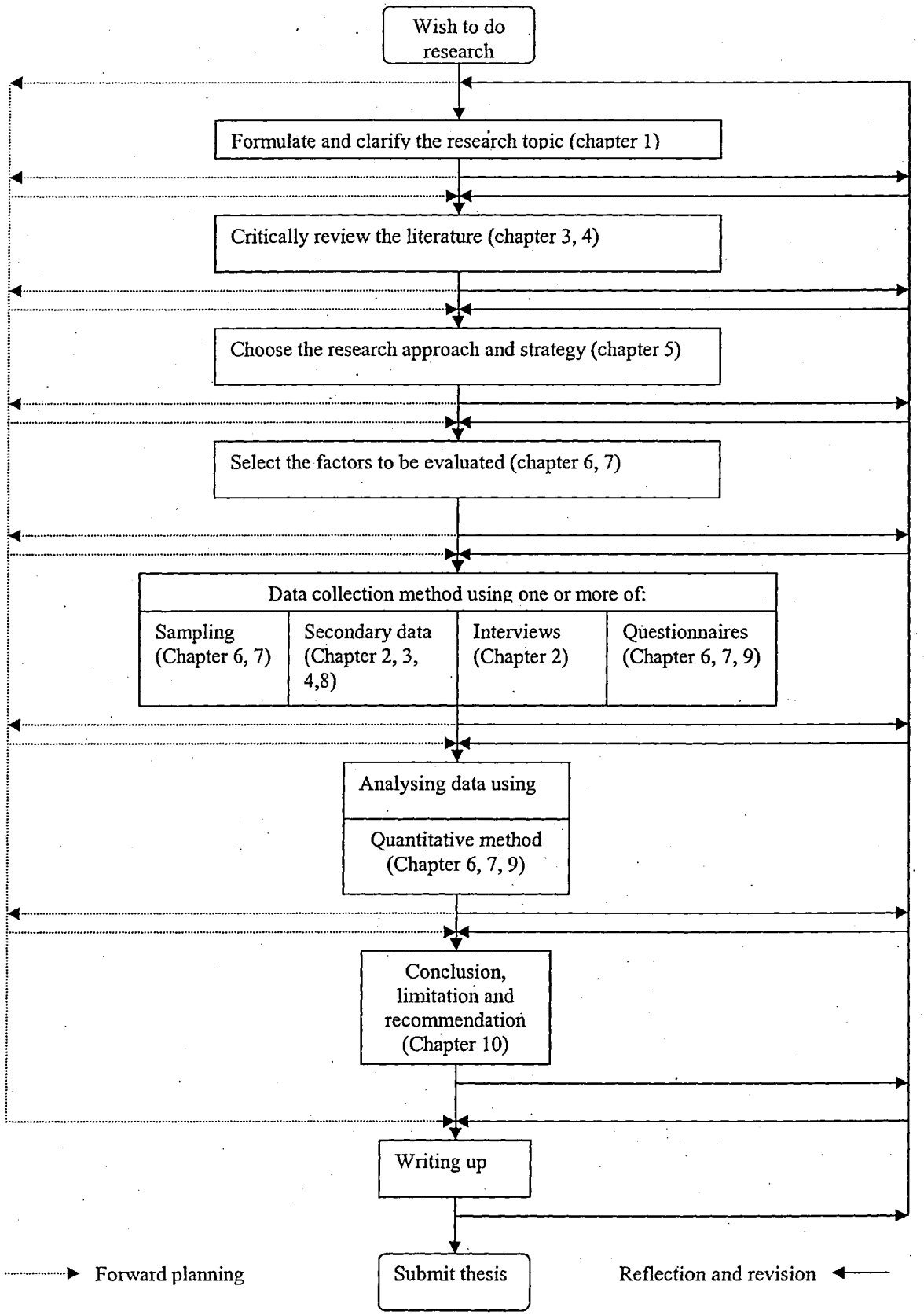


Figure (5.1) The research process (adapted from Saunders et al, 2000)

5.4. The research Methodologies:

Research methodology refers to the technical framework in which the research is carried out. It illustrates an approach to a problem, which can be put into practice in a research programme or process (Remenyi et al, 1998). There are many common research methodologies that can be used by researchers in order to collect data and information in which to achieve the researcher's goals. Research methods are no more than the tools of the trade, to do business. It is essential to be aware of the choice of research methods obtainable and to recognise how they work, understanding there advantage and disadvantage. The vital thing is to be able to choose the method that is most likely to meet the aim of the research (Moore, 1987). Hussey and Hussey (1997) distinguished between the two terms. Methodology refers to the overall way of conducting research, the theory based on the collection and analysis of data. Methods, on the other hand, refer only to the various ways in which data could be collected and / or analysed. Thus, methodology is concerned with the following main issues:

- Why you collected the data.
- What data you collected.
- From where it was collected.
- When it was collected.
- How it was collected.
- How it will be analysed.

5.5. Types of research methodology:

There are many different types of research methodology. However, the researcher will focus on main methodologies that can be used in business and management research. Therefore, research methodologies can be divided into two types: qualitative and quantitative which several researchers call phenomenological and positivistic.

5.5.1. Selection of methodology in this research:

Hussey and Hussey (1997) indicated that it is absolutely possible, and even useful, to use together qualitative and quantitative methods for collecting data. Such as a questionnaire survey providing quantitative data, which may be accompanied by a few in-depth interviews to give qualitative insights and explanations. Mainly, the data in this research is based on a questionnaire survey, which provided quantitative data and a small interview that provided qualitative data. Table (5.2) below shows the main features of these methodologies:

Table (5.2) features of the two main paradigms Hussey and Hussey (1997)

Quantitative paradigm	**Qualitative paradigme**
Tends to produce quantitative data	Tends to produce qualitative data
Uses large samples	Uses small samples
Concerned with hypothesis testing	Concerned with generating theories
Data is highly specific and precise	Data is rich subjective
The location is artificial	The location is natural
Reliability is high	Reliability is low
Validity is low	Validity is high
Generalises from sample to population	Generalises from one setting to another

5.5.1.1. Quantitative and qualitative case studies:

Case study can be applied to develop a framework for the collection of proof, and it could be employed as a research method. This proof may be analysed from either a quantitative or qualitative viewpoint. Quantitative and qualitative methods are complementary rather than antithetical (Remenyi et al, 1998). "Qualitative data is data in the form of descriptive accounts of observations or data that is classified by type. On the other hand, quantitative data is data which can be expressed numerically or classified by some numerical value". Since quantitative data is in the form of numbers, it can frequently be examined using standard statistical methods, such as test validity (Lancaster, 2005). Case studies are frequently described as exploratory research, applied in areas where there are few theories or incomplete body of knowledge. The techniques can be used to collect data in a case study consisting of documentary analysis, interviews and observation. In addition, it uses many methods for collecting data that could together be quantitative and qualitative. It is usually most excellent to merge data collection processes such as archive searching, interviews, questionnaires and observation. The proof might be qualitative (e.g. words), quantitative (e.g. numbers) or both (Collis and Hussey, 2003). Case studies are favourite research method in business and management when 'how' or 'why' questions are being studied, the researcher has little control over events, and when the concentrate is on a current phenomenon within some real-life situation (Remenyi et al, 1998). Therefore, case study employed in this research was based mainly on quantitative and some qualitative data, which enables in-depth analysis of case studies.

5.6. Sample and data selection:

5.6.1. Study sample:

Methodological problems of the survey are divided into three broad groups: gathering information; the use of methods to collect; and how to process, analyse and interpret the information generated. The first step always is to define the population to be studied (Moser and Kalton, 1985). Hussey and Hussey (1997) illustrated that selecting a sample is a basic part of a positivistic study. A sample of some members of the population, which may refer to a group of people or any group of other items under consideration for research purposes, an excellent sample should be:

- Selected at random (every member of the population has to have a possibility of being selected).
- Large enough to satisfy the needs of the investigation being undertaken.
- Unbiased.

Therefore, the sample of this research was randomly selected so that every healthcare organisation had same chance of being included. Thus the society of the study was mainly from Healthcare sector and ten healthcare facilities in Tripoli, the capital of Libya, where the total number of personnel in such organisations amounted to 1781 persons. In the first questionnaire, 889 questionnaire sheets accounting for 49.92% of the total sample were sent and the number of sheets answered amounted to 399 a percentage of 22.40%. In the second questionnaire, the data and views collected from healthcare director in Tripoli Healthcare Sector in Libya and from nine decision-makers in the

organisations under investigation. In the third questionnaire, a total of 68 questionnaire sheets were sent to top management and middle management. A total of 39 questionnaire sheets were sent and received from top management with a percentage of 100 % and 29 questionnaire sheets were sent to the middle management and the number of questionnaire sheets answered amounted to 20 with a percentage of 68.96 %.

5.6.2. Data collection:

There are two main sources of data; secondary data and primary data. Data can be divided into two types, qualitative and quantitative (Collis and Hussey, 2003). In this research, secondary and primary data were carried out to provide quantitative and qualitative data.

5.6.2.1. Secondary data:

Secondary data is information that previously exists in some form or other, but which was not primarily collected, at least in the beginning, for the reason of the consultancy use at hand. It is frequently the start for data collection and the first kind of data to be collected. Data collection in the most generally starts with secondary data, since such data is often cheaper, faster and easier to contact (Lancaster, 2005). According to Collis and Hussey (2003), the word literature refers to every source of published data. The aim of literature search is to discover as many items of secondary data as possible; he listed some sources of secondary data, which include:

- Books
- Articles in journals, magazines and newspapers
- Conference papers

- Reports
- Documents
- Published statistics.
- Businesses' annual reports and accounts
- Organisations' inside records
- Newspapers
- Films, videos and airs
- Electronic databases
- The Internet

In this research, the secondary data was collected from books, articles in journals, conference papers, businesses' annual reports and documents.

5.6.2.2. Primary data:

Primary data often collects during techniques for example testing, interviewing, observation and surveys (Lancaster, 2005). The researcher himself should collect it. In this research, the following methods were used to collect the primary data:

5.6.2.2.1. Interviews:

Interviews are main group of techniques for collecting data during inquiring and are known as being one of the most effective techniques for collecting data in the social sciences (Lancaster, 2005). Interviews, which could be open-ended, focused, or in the form of surveys, are one of the most often used sources of verification, particularly for the business and management researcher (Remenyi et al, 1998). According to Saunders et

al, (2000) shows in Figure (5.2) qualitative interviews could be one to one or one to many.

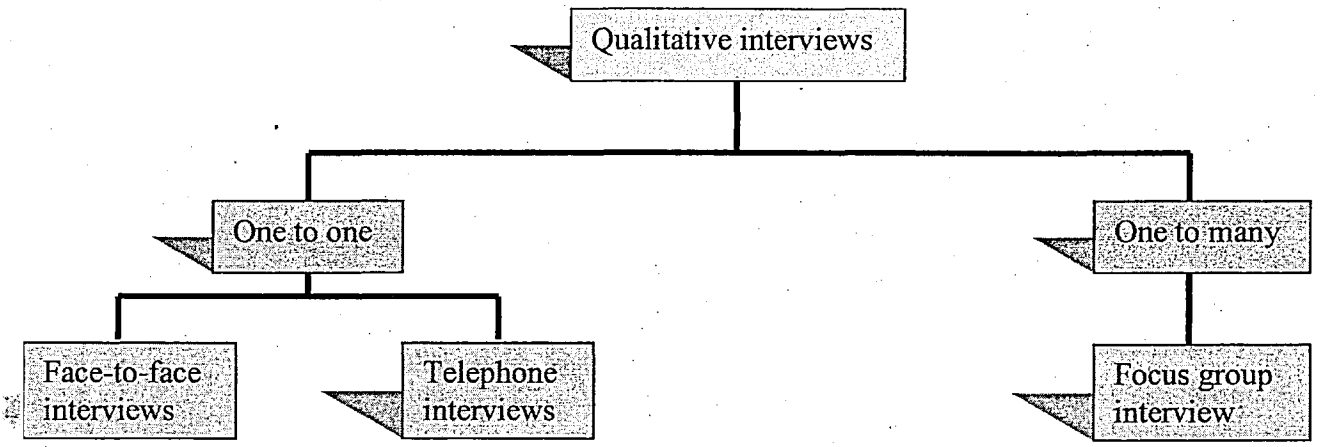


Figure (5.2) Types of qualitative interviews

In this research, both one to one and one to many interviews were employed through face-to-face and focus group interviews, together with director of Tripoli healthcare sector and the decision-makers of organisations under investigation.

5.6.2.2.1.1. Focus-Group Interview:

Focus groups used to collect data relating to the feeling and opinions of a group of individuals who are concerned in a common condition. Under the direction of a group leader, selected members are stimulated to discuss their opinions, feedbacks and feelings about a product, service, and types of situation or concept (Collis and Hussey, 2003). Focus groups are a useful approach for gaining evidence from experts in a powerful and concentrated way (Remenyi et al, 1998). In this research, a focus group was set up together with the director of Tripoli healthcare sector and the managers of organisations

under investigation, to explain the purpose and goal of the research, questionnaires, definition of TQM and its success factors and the advantage of the proposed TQM framework for achieving performance excellence in Libyan healthcare organisations. The meeting was successful and the focus group was happy with the outcome. After that the researcher kept continuity of communication with them during the data collection process, in order to reply to any inquiries or solve any problem that might arise during the data collection process.

5.6.2.2.1.2. Face-to-face Interview:

Interviews are connected with both qualitative and quantitative methodologies. Interviews could be face-to-face, voice-to-voice or screen-to-screen and conducted with one person or a group of people. It allows the researcher to ask extra complex questions and ask action questions which are not possible in a questionnaire. Also, it may allow a higher level of confidence in answers than questionnaire replies and can take into account non-verbal communications, for example the attitude and performance of the interviewee (Collis and Hussey, 2003). According to Remenyi et al, (1998) the personal interview allows the researcher to feel a level of confidence with the informant. It is becoming the most frequently used way of evidence collection by business and management researchers. In this research, the researcher held face-to face in-depth interviews with the Healthcare Director in Tripoli and highlighted the policy and difficulties in Tripoli healthcare.

5.6.2.2.1.3. Pilot study:

According to Collis and Hussey (2003) it is vital that you pilot or test your questionnaire as fully as possible before distributing it. At the very least, have classmates or friends study it, and engage in recreating the role of respondents, even if they know little about the topic. According to Saunders et al, (2000) the planning of the questionnaire will influence the reply rate, validity and reliability of data collection. Reply rate, validity and reliability can be maximised by:

- careful design of person questions;
- clear design of the questionnaire structure;
- clear description of the idea of the questionnaire;
- and pilot testing.

In this research, a pilot study had been done in order to test the validity of the questionnaires and to ensure that they are free from any unnecessary confusion. According to Saunders et al (2000) the aim of the pilot study is to clarify the questionnaire so that respondents will not have any problems in answering the questions or recording the data. In addition, it will help you to asses of the validity of the questions and the reliability of the data. He added that this will enable proposals to be made to the questionnaire and will assist establish content validity.

In this research, some suggestions and modifications had been made during the pilot study based on discussion with my supervisor and some PhD students from my country. The questionnaire was tested by twenty respondents from different levels and selected

randomly from the organisations under investigation. Only one out of twenty respondents refused to participate. In the second questionnaire ten managers selected randomly from Tripoli Healthcare Sector tested the questionnaire. Saunders et al (2000) indicated that the number of people who participate in the pilot study depends on your research questions, objectives, and the time and money resources available. He added that for most questionnaires, the minimum number for a pilot is 10. In addition, it is better to pilot test the questionnaire using friends or family than not at all, this will at least give you some suggestion of your questionnaire's face validity at to whether the questionnaire makes sense. In this research, the pilot study took ten days to complete. Based on the results collected, some modifications were made in the questionnaires based on the strategy implementation in Libyan healthcare (see chapter two). In the third questionnaire, ten managers from the organisations under investigation were selected randomly to obtain perfect feedback. The draft questionnaire contained four sections. In the second section, it was decided to use a five-point Likert scales ranging from strongly agree to strongly disagree to assess the organisations situation with regard to TQM and to discover which factors would be a barrier the implementation of TQM in the healthcare under investigation. However, after the pilot study and according to the respondents' wishes, the Likert scale was decreased and modified into three-point to make the questionnaire easier to complete. Saunders et al (2000) indicated that scale or rating questions are frequently employed to gather belief data. The most general technique is the Likert-style rating scale in which you ask the respondents how strongly they agree or disagree with a statement or series of statements, usually on a four- or five-point scale. On the other hand, the respondents accepted the other sections of the questionnaire without any modification.

In order to test the reliability of this research, and to ensure the reliability of respondents to answer questions in the questionnaires Cronbach's alpha was used to test the reliability in the first and third questionnaire and a priority weights and inconsistency ratio (IR) were used to achieve this purpose in the second questionnaire. The results indicated that the questionnaires were reliable. According to Saunders et al (2000) the reliability of questionnaire is regarded with the consistency of respondents to the questions. He indicated that three general techniques could assess reliability. They are: test re-test, internal consistency and alternative form. Internal consistency measures the consistency of respondents across either all the questions or a sub-group of the questions from the questionnaires. He added that Cronbach's alpha is one of the most commonly used methods for calculating internal consistency. Likewise, AHP provides a measure called the inconsistency ratio (IR) to verify the inconsistency of judgments. Badri and Abdulla (2004) indicated that one of the advantages of the AHP is that it has built-in methodical confirms on consistency of judgments. Expert Choice 2000, the software used, provides a measure of logical rationality, named the inconsistency ratio. If it is 0.10 or less the inconsistency is usually considered reliable.

5.6.2.2.2. Questionnaire survey:

Questionnaires are among one of the most commonly used and important means of data collection. A questionnaire is a series of questions planned to offer exact information from every member of the sample. Therefore, it should be clear and unbiased, simple to understand and should keep the respondents interest, and motivation (Lancaster, 2005). According to Remenyi et al, (1998) the major aim of a research questionnaire is to gather

information which cannot be simply observed, or already obtainable in written or computerised form. Collis and Hussey (2003) indicated that the goal of a questionnaire is to discover what a selected group of members do, think or feel. Questionnaires are not suitable for exploratory or other research that needs large numbers of open-ended questions. It could be used for descriptive or analytical research (Saunders et al, 2000).

According to Cassell and Symon (2004) the justification of using the questionnaires, which has several significant characteristics that make it a useable and dependable tool such as:

- The questionnaire is an economical, fast and less bias collection method.
- The questionnaire is a flexible technique to gain data from either a sample or a large group of people.
- The questionnaire is more anonymous than interview and therefore the respondents' feel free to answer questions.

In addition, Collis and Hussey (2003) indicated that questionnaires are a common technique for data collection. It is cheaper and less time-consuming than doing interviews, and very large samples could be taken. According to Saunders et al, (2000) Figure (5.3) shows that the design of questionnaires can be divided into two types; self-administered, and interviewer administered questionnaire. It be different according to how it is administered, especially the amount of contact you have with the respondents.

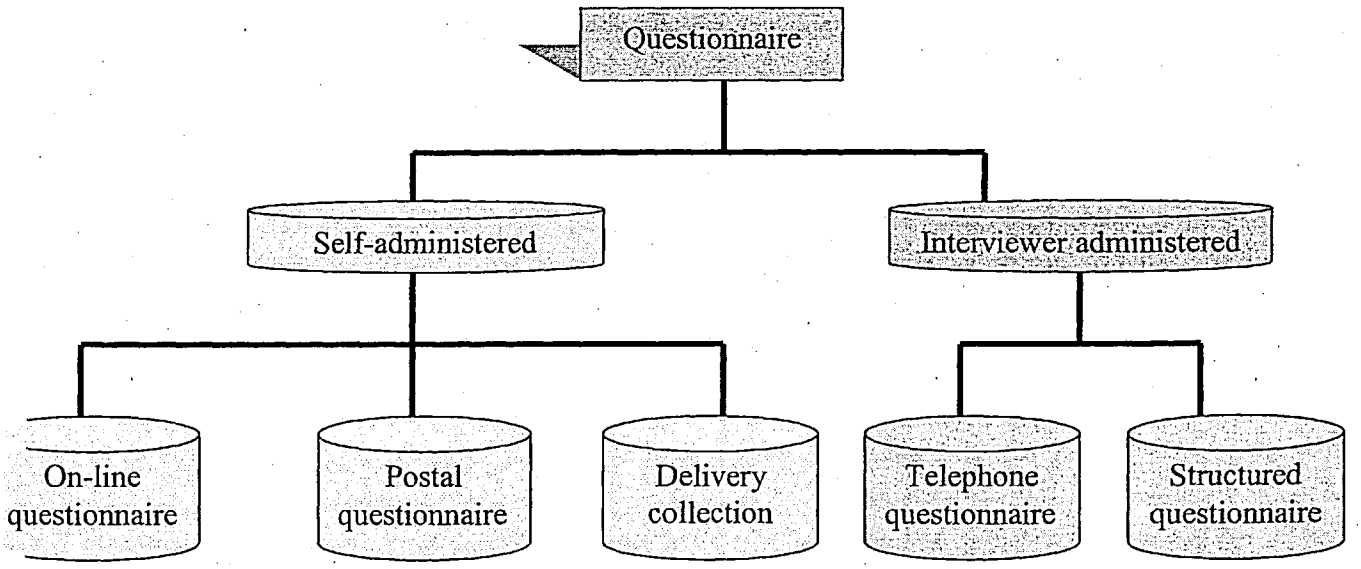


Figure (5.3) Types of questionnaires (Saunders et al, 2000)

In this research, self-administered questionnaires were used to collect data from the respondents by a delivery collection questionnaire. The justification for using self-administered is that they are not expensive to manage and also offer a message to respondents that the organisation is interested in listening to their views and, by suggestion, in improving the service provided. One disadvantage is that they do not realise how non-users feel about the service. In addition, there is no guarantee that the questionnaires completed are representative of all respondents (Moullin, 2002). However, in this research the researcher held a number of meetings with managers of organisations under investigation to explain the purposes and goals of the questionnaires. They were then asked to distribute the same on the research sample and receive respective answers. The researchers kept the continuity of communication with the secretary of people's

committee for health and managers of health organisations during the data collection process, in order to reply to any inquiries or solve any problem that might arise during the data collection process.

The questionnaires were designed for different purposes in order to gather the required data from managers, and employees from different levels in the organisations under investigation. Firstly the questionnaires were designed in English then translated into Arabic to make it easy to understand and to obtain perfect feedback from respondents and to ensure that the questionnaires were free from any unnecessary confusion. In addition, every questionnaire had a covering letter attached, which aimed to inform the respondents of the aims and objectives of the study, and how the questionnaire should be completed. According to Saunders et al (2000) commonly, self-administered questionnaires are accompanied by a covering letter that describes the aim of the study.

The first questionnaire, designed to develop a model to evaluate the performance of Leadership and to identify the organisational culture that currently exists within developing countries (Libyan healthcare organisations as a case study). The main deliverable are to identify the strengths and weakness points of leadership, which will help in creating the organisational culture that is required for implementation of TQM. This questionnaire consists of two sections, the first section designed to collect personal information from the respondents, which include gender, age, qualification, management level and name of organisations under in investigation. The second section consists of seven questions, designed to identify to what extent the factors and concepts of the proposed leadership model were practised within the organisations under in investigation. A self-explanatory survey questionnaire (on a five-point Likert scale ranging from

strongly agrees to strongly disagree) was used in this questionnaire to collect data from managers and employees at different management levels (see appendix 1).

The second questionnaire focused on the identification of the best practice of total quality management (TQM) factors that allow the organisations under in investigation to seize performance excellence and provide a benchmarking tool for these TQM factors. The questionnaire was structured into two sections. The first section considers five TQM factors namely: Leadership, Training and Education, Focus on customer, Process and measurement and Continuous Improvement which form the basis for the development of a model to measure the performance excellence of healthcare organisations. In the second section of the questionnaire, nine healthcare organisations are involved and the proposed Analytical Hierarchy Process (AHP) model used to provide pair wise comparison between these organisations and to also facilitate to carry out dynamic sensitivity analysis to test the priorities of alternative if less or more importance is given to a particular criterion. This helps to examine different scenarios and re-addresses the importance of TQM factors in a "what if" approach. (see appendix 2).

The third questionnaire designed in order to verify/validate the proposed TQM framework and its implementation procedure. The questionnaire was structured into four sections. The first section designed to collect personal information from the respondents; the second section designed to assess the organisations situation with regard to TQM. In this section, the researcher allowed the respondents to add their personal opinion about the factors that could be a barrier the implementation of TQM in the healthcare sector.

The goal of this section was to provide the decision-makers with more information about the existence of some problems and barriers that may work to reduce the performance of Tripoli healthcare sector. A self-explanatory survey questionnaire on a three-point Likert scale was used in this section to collect data from two levels in the organisations under investigation. The third section designed to identify to what extent the proposed framework factors are important for improving the quality performance of healthcare service in the organisations under investigation. A self-explanatory survey questionnaire (on a five-point Likert scale ranging from very important to not important at all) was used in this section to collect data from two levels in the organisations under investigation. The last section of the questionnaire is designed to discover to what extent the proposed framework stages will guide and facilitate successfully the implementation of total quality management in the organisations under investigation. Also, a self-explanatory survey questionnaire (on a five-point Likert scale ranging from very important to not important at all) was used in this section to collect data from two levels in the organisations under investigation.

5.7. Data analysis:

Mainly, the data in this research is based on questionnaires survey, which provided quantitative data and a little interview that provided qualitative data. However, the focus on this research was on analysis which is the quantitative data since the qualitative data was well defined see chapter 2. Quantitative analysis of data offers many advantages over qualitative analysis. In particular, quantitative analysis likely offers the advantage of increased objectivity in clarifying data, measures of validity and reliability and can be

employed to examine large volumes of data that in turn can be briefly presented in a way that is easily communicable to others (Lancaster, 2005).

All answers provided by the respondents through the first and third questionnaire are classified and statistical analyses were performed using a statistical package for social sciences (SPSS). In addition, statistical analyses were performed in the second questionnaire using Analytical Hierarchy Process (AHP).

The data was collected and then coded at different levels of numerical measurement. For example, the type of gender was coded from 1 to 2 as female and male respectively. The type of age was coded as 1 = (18-25), 2 = (26-40) and 3 = (41-65). In addition, for example in the second questionnaire, the organisations were coded from1 to 9. Likewise, in third questionnaire some factors was coded from 1 to 5 as very important to not important at all, to identify to what extent the proposed framework factors are important for improving the quality performance of healthcare service in the organisations under investigation. All data entered for computer analysis was as a data matrix to facilitate error checking. Tables and Figures were used to show specific values, highest and lowest values, proportions, and the relationship between variables. In addition, the mean, mode and standard deviation were used to describe the central tendency and the dispersion respectively. ANOVA was used to test whether groups are significantly different. Correlation is a statistical method used to inquire into the relationship between the management levels and leadership factors. In order to test the reliability and constancy of the questionnaires. Cronbach's alpha was used in the first and third questionnaire and inconsistency ratio (IR) was used to achieve this purpose in the second questionnaire. Dynamic sensitivity analysis was used in second questionnaire to test the priorities of

alternative if less or more importance is given to the criteria. This helps to examine different scenarios and re-addresses the importance of TQM factors in a "what if" approach.

5.8. Summary:

Research means different things to different people, this leads to different types of research. This chapter has outlined the common types of research available in literature. The researcher focused on main methodologies that can be used in business and management research. Therefore, the main research methodologies; quantitative and qualitative technique was discussed which several researchers call phenomenological and positivistic. Secondary and primary data were carried out to provide quantitative and qualitative data. Mainly, the data in this research is based on questionnaire survey, which provided quantitative data and a short interview that provided qualitative data. This research adopted a secondary data, which was collected from books, articles in journals, conference papers, businesses' annual reports and documents. In addition, primary data was collected from interviews and questionnaire survey. The data was analysed using a statistical package for social sciences (SPSS) and an Analytical Hierarchy Process (AHP). Moreover, tests for validity and reliability were noted.

Chapter six:

Evaluation of the leadership performance in total quality management

6.1. Introduction:

The aim of this chapter is to develop a model to evaluate the performance of leadership in total quality management (TQM) and to identify the organisational culture that currently exists. In this chapter seven leadership factors are chosen from vast literature reviewed. These factors are *Vision, Mission, Strategy, Communication, Empowerment, Trust and Team development.* These factors are used to develop a self-explanatory survey questionnaire to collect data from managers and employees at different management levels to validate the proposed model. Statistical analyses are performed using a Statistical Package for Social Sciences (SPSS) to analyse the collected data. The main deliverables are to identify the strengths and weakness points of leadership, which help in creating the organisational culture that is required for implementation of TQM. The chapter also provides a case study in which the proposed model is applied in one of the developing countries which proved that the model capable of evaluating leadership performance and help in identifying the areas that require immediate attention. Moreover, tests for validity and reliability were carried out.

6.2. Leadership Excellence of Successful Change:

According to Evans (2008) Leadership is the opinion of many experts as the sine qua non (if you don't have it, you have nothing) of quality and performance excellence. He added that effective leaders enable staff to assume ownership of problems or opportunities, and to be proactive in the implementation of improvements and take decisions in the interest of the organisation.

Leadership is an essential component to the success of TQM. It provides direction with vision and mission and supports the actions necessary to meet TQM aims. Strong leadership and commitment will bring significant successes. On the other hand, weak leadership may well bring partial or total failure (Hradesky, 1995). As is the case in most aspects of performance excellence, it should start with leadership (Evans, 2008). Therefore, leaders must take part as role models in the creation of strategies, systems, and methods for achieving excellence in quality. Juran indicated that stunning results couldn't be realised without the active and personal leadership of senior managers (Tummala and Tang, 1996). In addition, Oakland (1999) indicated that successful leadership is the key to organisational excellence. Evans (2008) indicated that leadership for quality is the responsibility of senior management. Top management must identify trends; create customer orientation, quality and clear values, and the great hopes that meet the needs of all stakeholders; and build it in the way the company operates. Senior leaders need to commit to the development of the entire employees, and should be encouraged to participate, learning and innovation, and creativity throughout the organisation.

6.3. The proposed leadership performance model in (TQM):

According to the available literature and based on the author's many visits and preliminary investigation, and also in spite of the limited differences between researchers in the field of total quality management on what the main key factors of leadership are, it has been found that the proposed model should have *Vision, Mission, Strategy, Communication; and Empowerment, Trust and Team development* as leadership factors

see Table (6.1). In addition, the culture change was found a core issue in the proposed model.

Table (6.1) List of leadership factors and literature support.

Vision	Thiagarajan and Zairi, 1997; Koch, 1993; Hradesky, 1995; Jackson, 2001; Thomas et al, 2001; Letza and Oakland, 1994;
Mission	Thiagarajan and Zairi, 1997; Hradesky, 1995; Letza and Oakland, 1994;
Strategy	Thiagarajan and Zairi, 1997; Burke and Jarratt, 2004; French at al 2004; Jackson, 2001; Bartoli and Hermel, 2004; Letza and Oakland, 1994;
Communication	Spinks and Wells, 1995; Letza and Oakland, 1994; Nguyen and Kleiner, 2003;
Empowerment	Thiagarajan et al, 1997; Russell et al, 2001; Letza and Oakland, 1994;
Trust	Russell et al, 2001; Mastrangelo et al, 2004; Thomas et al, 2001; Merkens and Spencer, 1998;
Team development	Hradesky, 1995; Hut and Molleman, 1998;

The researcher thinks that the model as shown in Figure (6.1) may assist the healthcare organisations in Libya to identify the strengths and weakness points of leaders in Libyan healthcare sector. It also helps to identify the organisational culture required for implementation of TQM. The following sub sections provide more details about these factors:

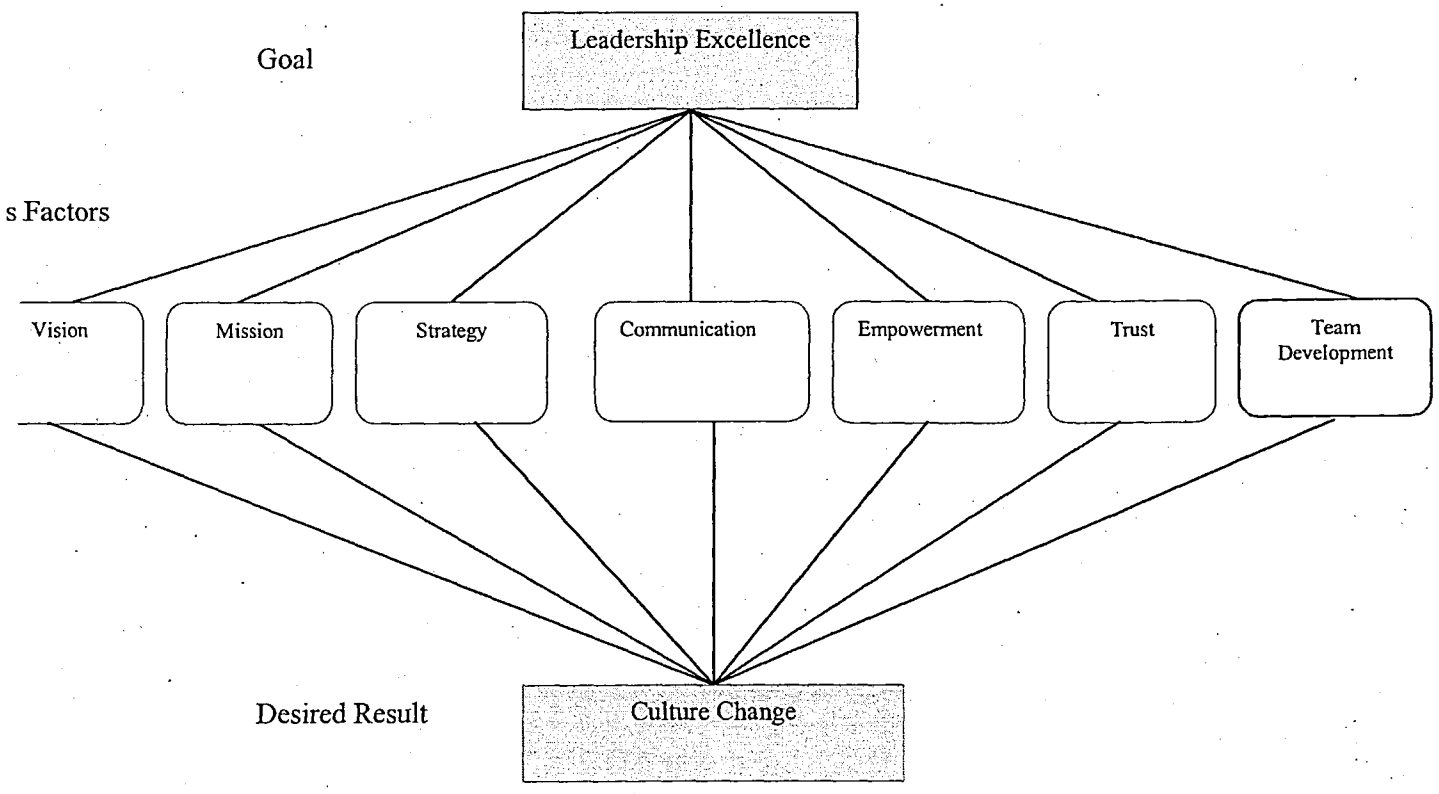


Fig (6.1): The proposed Leadership Excellence Model.

6.3.1. Culture change:

As previously studied in chapter four, the requirements and necessary factors for the implementation of total quality management, culture change is considered to be one of the most important desired results also culture change is one of the main core issues of this study and therefore the researcher has decided to present it in some detail. For organisations committed to pursuing performance excellence, change is a method of life. Organisational change is necessary for the implementation of quality plans. In the first phase, an effort should be mounted to start changing the culture of the organisation (Evans, 2008). The first requirement for culture change is based on which is the commitment of the organisation management team to change its organisational culture to meet total quality management philosophy. In other words, if we wish to implement the

total quality management successfully as a strategy, the managers need to understand their organisations culture and make their best efforts to confront it for the transference of that culture into the total quality culture (Hradesky, 1995). In addition, organisations are facing new challenges that are open again to change; leaders also have chances of establishing a new different value. The transformation to total quality management requires alterations in the structural culture of organisations so as to match the required structural culture for the implementation of total quality management. According to Evans (2008) a major strategic change that organisations should make is pursuing performance excellence is a change in culture which is the set of beliefs and values shared by the individuals in an organisation. He added that Leadership is important for the quality and performance excellence. He indicated that leaders establish plans and objectives for the organisation. If the plans and goals do not include quality or, worse yet, are contrary to the quality, the quality of the effort will die. Leaders help in the formation of a culture of the organization by taking major decisions and actions symbolic. If they help in the formation of a culture that puts convenience or short-term benefits of quality forward, it will die. He added that leaders distribute resources. If resources are showered on programs that reduce short-term costs while quality is starved of resources, and the quality will die. If they help in the formation of a culture that puts convenience or short-term benefits of quality forward, it will die. He added that the leaders of allocating resources. If resources on programmes that reduce the cost of short-term, while quality is starved of resources, the quality will die.

6.3.1.1. Comparison between modern and traditional culture:

The following Table provides a comparison between the organisation culture, which adopt the system of total quality management, and the organisations culture that adopt the traditional concepts of quality:

Table (6.2) Comparison between total quality management and the traditional concept (Koch, 1993 and Sharara, 2000)

Field of comparison	Traditional approach	Total quality management approach
Purpose and goals	Unsure and not discussed	Clear and corporate
Direction	Direction by producer	Direction by customer
Improvement	Not continuous	Continuous
Consumer requirement	Not priority	Priority
Managers	Administrators	Leaders
Works	Narrow, specialized individual efforts	Wide, general team work efforts
Decision making	From upper to lower	Teamwork
Quality responsibility	Inspection centres, quality control departments	Include every individual in the organisation
Suppliers	Not partners in achieving quality process	Partners in quality achieving process
Customer involvement	Irrelevant and too difficult	Customer driven

Juran and Gryna (1993) illustrated that employees in an organisation have opinions, beliefs, traditions, and practices associated with quality. Therefore, culture should be part of an organisation.

Organisational culture is defined as the general ideal which members of the organisation share in common, and that shape the behaviours, practices and other artefacts of the organisation that are easily observable (Prajogo and McDermott, 2005). Likewise, Rad (2006) illustrated that organisational culture consist of the beliefs, values, norms, customs

and practices of the organisation. On the other hand, an important question that needs to be addressed is, why change? Deming believed that basic change in organisations is necessary if TQM is to be adopted successfully; it is not enough simply to work with the existing systems (Short and Rahim, 1995). Most business leaders and writers agree that the traditional approaches of doing business are not likely to be successful competition. Organisations need to flexible and able to quickly changing. They must also create a culture that is committed to the organisation's articulated goals (Hradesky, 1995). In addition, change must be based on meeting the customer requirements and not on the values of the providers. TQM demands complete support of top management and meaningful participation from all workforces (Short and Rahim, 1995).

6.3.1.2. Requirements of changing the organisational culture:

The change of culture must be planned to avoid ambiguity and facilitate improvement; managers must learn to lead change (Dale, 2003) and the following Table provides useful advice by (Shararah, 2000) which show the requirements of changing the organisational culture:

Table (6.3) Requirements of changing the organisational culture (Sharara, 2000)

From	*To*
Rumors & confidentiality	Open communications
Fear & negative ness	Support & ambition
Controlling the personnel	Support & independency of the personnel
Proper actions	Improvement & development initiations
Focusing on rules	Focusing on internal and external customer
Endeavouring for stability	Endeavouring for continuous improvement & development
Relations of competition & rival	Relations of positive cooperation & interaction
Administration in blame	Administration in solving the problems root
Centralization	No complete centralization

6.3.2. Leadership factors:

As TQM really entails change within an organisation it is necessary to examine the factors that are essential in order to be successfully managing such organisational change:

6.3.2.1. Vision:

Vision is one of the key elements in transforming culture and making the change in the head of the unity and empowers staff to see the direction they are going and encourage them to help the unit get there (Koch, 1993). In addition, Hradesky, (1995) indicated that vision is the ability to see an end in mind or aims in complete form such as:

- Seeing the big picture, and imagine what can be achieved, and how to do it.
- Positive mental image of the desired outcomes or behaviours.
- Ability to communicate the vision with others.

6.3.2.2. Mission:

The mission describes: what products or services the organisation provides; who the customers are; what the major drives are in the future markets, and the suitable strategy for their products and services; what is characteristic about the organisation; how the organisation desires to be identified; and the organisation's goal in the market (Hradesky, 1995).

6.3.2.3. Strategy:

Strategy is the process of determining the organisation's long-term goals and objectives, to adopt a course of action and allocate sufficient resources. It is what the organisation does, much more than what it says it is going to do to compete in the marketplace. To assess individual capabilities, managers of major companies need to evaluate their classmates and senior managers in terms of their ability to understand how industry might change in the future (Burke and Jarratt, 2004). French at al (2004) indicated that strategy is central to the field of management. According to Evans (2008) Strategy is a pattern of decisions that define and reveal company objectives, policies, and plans to meet the need of its stakeholders.

6.3.2.4. Communication:

Communication is the lubricant used to turn the circle in any leadership role. Quality leadership can be implemented only during quality communication at all levels – higher, middle and lower – in organisations. If quality communication is in position, the organisation will reach delighted customers, empowered employees, higher revenues, and lower costs (Spinks and Wells, 1995).

6.3.2.5. Empowerment:

Empowerment is the key element in excellent leadership; it is particularly important in servant leadership, including authorising the workforce with the power and responsibility, as it emphasises the work of collectively and reflects the values of love and equality. The goal of empowerment is to create many leaders at all levels in the organisation. Also, leaders can influence and empower people by structuring their work environments in such a way that they feel more effective and motivated (Russell et al, 2001).

6.3.2.6. Trust:

Russell et al, (2001) illustrated that trust is a key element in the service of leadership, as well as in leadership styles. It provides the foundation for the people to follow their leaders with confidence and interest; and grows when people see leaders translate their personal honesty into organisational conformity. Likewise, Mastrangelo et al, (2004) indicated that trust is perceived as honesty, sincerity and reliability, which is a natural and essential relation.

6.3.2.7. Team development:

Hradesky, (1995) indicated that team development means the ability to create leadership, thought and action in your teams, spreading responsibility and credit for work by:

- Sharing responsibility.
- Decentralisation of authority.
- Allowing others to solve the problem.
- Being patient and allow for the preparation of the other.

6.4. Research Methodology:

This study focuses on the developing countries and in particular Libyan Healthcare Organisations. A questionnaire was designed for different purposes in order to gather the required data from managers, employees from different levels in the organisations under investigation. Firstly the questionnaire was developed in English after that translated into Arabic to make it easy to understand and to obtain perfect feedback from respondents and to ensure that the questionnaire is free from any unnecessary confusion. In addition, the questionnaire attached with a cover letter, which aims to tell the respondents the aims of the study, and how the questionnaire should be completed. A self-administrated questionnaire was used, to develop a model to evaluate the performance of Leadership and to identify the organisational culture that currently exists within Tripoli Healthcare Organisations as a case study. This questionnaire consists of two sections, the first section designed to collect personal information from the respondents, which include gender, age, qualification, management level and name of organisations under in investigation. The second section consists of seven questions, designed to identify to what extent the factors and concepts of the proposed leadership model were practised within the organisations under investigation. A self-explanatory survey questionnaire (on a five-point Likert scale ranging from strongly agrees to strongly disagree) was used in this questionnaire to collect data from managers and employees at different management levels.

6.5. Selection of sample:

In order to obtain reliable results, the capability of the selected sample needs to be considered. Hussey and Hussey (1997) indicated that a confident sample should be

unbiased, selected randomly, and as sizeable as possible to achieve the study's requirements. Therefore, the sample of this study was randomly selected so that every healthcare organisation had the same chance of being included. The researcher estimated that the full coverage for the research population (all health organisations in Tripoli) is impossible to be carried and due to shortage of capability. Thus, the study was mainly taken from ten healthcare facilities in Tripoli, the capital of Libya, which consists of four grouped clinics, three health centres and three healthcare units, for which the government has invested massively and are also selected because the services of these hospitals are connected with the citizens directly and are facing strong competition in the local market from private hospitals, and competition from neighbouring countries. Table (6.4) and Figure (6.2) below, shows that the total number of personnel in such organisations amount to 1781 persons, where the researcher decided that study samples would be 50% of each health organisation. In this questionnaire, a total of 889 questionnaire sheets, accounting for 49.92% of the total sample were sent and the number of questionnaire sheets answered amounted to 399 with a percentage of 22.40%.

Table (6.4) Distributed questionnaire and the response rate.

The population (employees)	**1781**	**100%**
Delivered questionnaires	889	49.92%
Returned questionnaires	399	22.40%

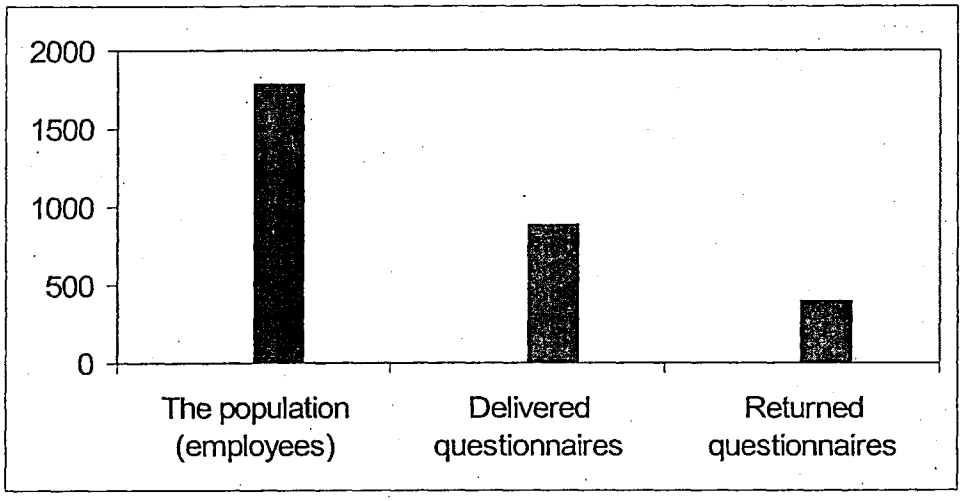


Figure (6.2) The response to the survey's questionnaire.

6.6. Data Collection:

The researcher, in data collection, followed and adopted the following: -

- The researcher held a meeting with managers of organisations under investigation to explain the purposes and goals of the questionnaire. After that asked them to distribute the same on the research sample and receive respective answers.
- The researcher kept the continuity of communication with the secretary of people's committee for health and managers of health organisations during the data collection process, in order to reply to any inquiries or solve any problem that might arise during the data collection process.

6.7. Data preparation for analysis purposes: -

- A review was made with respect to the list collection, to make sure of their validity for analysis. Where the researcher considered the list on which the person rendering the answer failed to answer more than one-fourth of its questions, this would be deemed to be an invalid list. All lists met these conditions.

- The sample was thereafter classified by gender, age, qualification, and administrative level and health organisations in order to define the features of the research sample.
- The researcher applied Statistical Package for the Social Sciences SPSS for data analysis.

6.8. Characteristics of the research sample: -

The sample was randomly selected and in the following is the sample distribution: -

6.8.1. The gender:

Each person completing a questionnaire was asked about his/her gender. Table (6.5a), Table (6.5b) and Figure (6.3) below classifies the investigated employees under this category:

Table (6.5a) Descriptive statistics for gender groups.

N	Valid	399
	Missing	0
Mean		1.7243
Mode		2.00
Std. Deviation		.44742
Minimum		1.00
Maximum		2.00

Table (6.5b) The gender groups of respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	110	27.6	27.6	27.6
	Male	289	72.4	72.4	100.0
	Total	399	100.0	100.0	

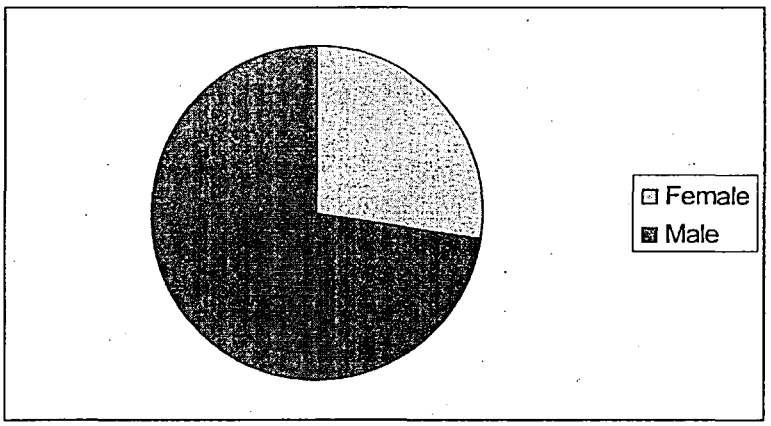


Figure (6.3) the respondents gender groups.

The first column in Table (6.5b) lists the different categories of the variables. The second column provides a frequency count for each of these categories and we can see from Figure (6.3) that 110 respondents are female, and 289 respondents are male. The third column transfers raw figures into percentages, so we can see that 27.6 per cent of respondents are female, 72.4 per cent are male. The fourth column titled (Valid Percent) missing values (if there are any) and provides a percentage breakdown of only those respondents who gave a valid answer to the question. The final column (Cumulative Percent) totals the percentages cumulatively. Table (6.5a) shows that there were 399 valid respondents and no missing values and then reports the various summary statistics that are requested. The mean (average gender) is 1.7243. The mode (the one that occurs most frequently) is 2.00 also standard deviation is .44742.

6.8.2. The age groups.

The age of the respondents was the second question on the questionnaire each person completing the questionnaire was asked about his/her age. Table (6.6a), (6.6b) and Figure (6.4) below classifies the investigated employees under this category:

Table (6.6a) Descriptive statistics for age groups.

N	Valid	399
	Missing	0
Mean		1.9348
Mode		2.00
Std. Deviation		.77054
Minimum		1.00
Maximum		3.00

Table (6.6b) The age groups of respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	132	33.1	33.1	33.1
	26-40	161	40.4	40.4	73.4
	41-65	106	26.6	26.6	100.0
	Total	399	100.0	100.0	

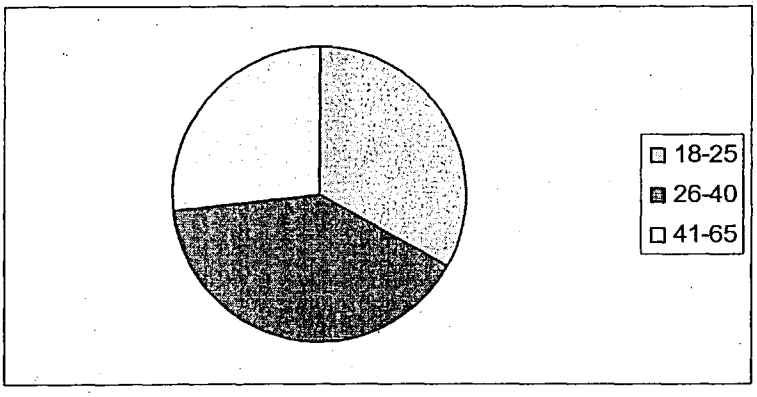


Figure (6.4) the respondents age groups.

Table (6.6b) and Figure (6.4) show that 132 respondents (33.1%) are aged between 18 - 25 years, 161 respondents (40.4%) are aged between 26 - 40 years and 106 respondents (26.6%) are between 41 and 65. In addition Table (6.6a) shows that there were 399 valid respondents and no missing values and then reports the various summary statistics that

requested. The mean (average age) is 1.9348. The mode (the one that occurs most frequently) is quite close to mean average at 2.00 and standard deviation is .77054.

6.8.3. Qualifications:

The qualification of the respondents was the third question on the questionnaire. Each person completing a questionnaire was asked about his/her qualifications to classify different kind's backgrounds and experiences. Table (6.7a), (6.7b) and Figure (6.5) below classified the investigated employees under this category:

Table (6.7a) Descriptive statistics for qualifications.

N	Valid	399
	Missing	0
Mean		2.2406
Mode		2.00
Std. Deviation		.72101
Minimum		1.00
Maximum		3.00

Table (6.7b) The qualifications of respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Postgraduate	67	16.8	16.8	16.8
	Graduate	169	42.4	42.4	59.1
	Others	163	40.9	40.9	100.0
	Total	399	100.0	100.0	

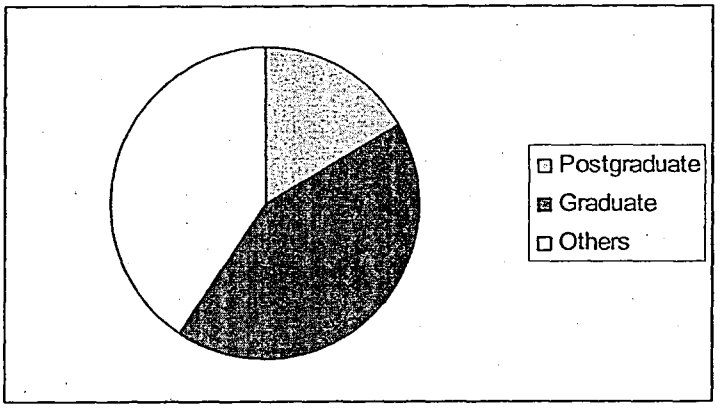


Figure (6.5) the respondents qualifications.

Table (6.7b) and Figure (6.5) show that 67 respondents (16.8%) are postgraduate, 169 respondents (42.4%) are graduates and 163 respondents (40.9%) had other qualifications such as some experience in same jobs or another diplomas but not a University degree. Table (6.7a) shows that there were 399 valid respondents and no missing values and then reports the various summary statistics that requested. The mean is 2.2406. The mode is 2.00 and standard deviation is .72101.

6.8.4. Management Level:

The respondents were then asked to specify their current level in the healthcare organisations under investigation. The importance of this question will come into view later at the analysis stage as it can provide some results relating to different answers at different levels. Table (6.8b) and Figure (6.6) shows that 20 respondents (5.0%) are employed in top management. In middle management there were 214 respondents who sum up to (53.6%), whereas 165 respondents (41.4%) were in lower management. Table (6.8a) shows that there were 399 valid respondents and no missing values and then reports the various summary statistics that requested. The mean is 2.3634. The mode is 2.00 and standard deviation is 0.57656

Table (6.8a) Descriptive statistics for management level

N	Valid	399
	Missing	0
Mean		2.3634
Mode		2.00
Std. Deviation		.57656
Minimum		1.00
Maximum		3.00

Table (6.8b) The management level of respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Top Management	20	5.0	5.0	5.0
	Middle Management	214	53.6	53.6	58.6
	Lower Management	165	41.4	41.4	100.0
	Total	399	100.0	100.0	

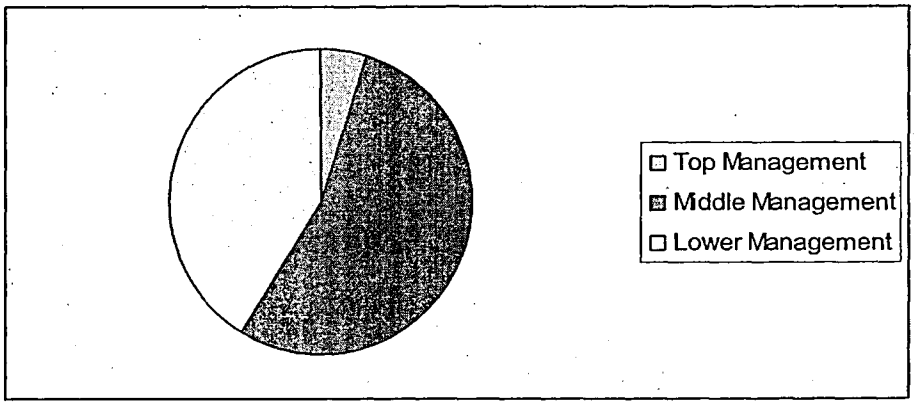


Figure (6.6) the respondents management level.

6.8.5. Tripoli Healthcare Organisations under investigation:

The study was conducted mainly from ten healthcare facilities in Tripoli, the capital of Libya. There are four grouped clinics, three health centres and three healthcares. Table

(6.9a), (6.9b) and Figure (6.7) show that there were 399 valid respondents and no missing values, the mean is 5.4035 and the mode (the one that occurs most frequently) is 10.00, which is the largest sample at 70 respondents (17.5%) that was in organisation number 10. On the other hand, the lowest was in organisation number 2 by 15 respondents with rate of (3.8%).

Table (6.9a) Descriptive statistics for Tripoli Healthcare Organisations

N	Valid	399
	Missing	0
Mean		5.4035
Mode		10.00
Minimum		1.00
Maximum		10.00

Table (6.9b) Tripoli Healthcare Organisations of respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1.00	61	15.3	15.3	15.3
	2.00	15	3.8	3.8	19.0
	3.00	58	14.5	14.5	33.6
	4.00	60	15.0	15.0	48.6
	5.00	17	4.3	4.3	52.9
	6.00	32	8.0	8.0	60.9
	7.00	30	7.5	7.5	68.4
	8.00	40	10.0	10.0	78.4
	9.00	16	4.0	4.0	82.5
	10.00	70	17.5	17.5	100.0
	Total	399	100.0	100.0	

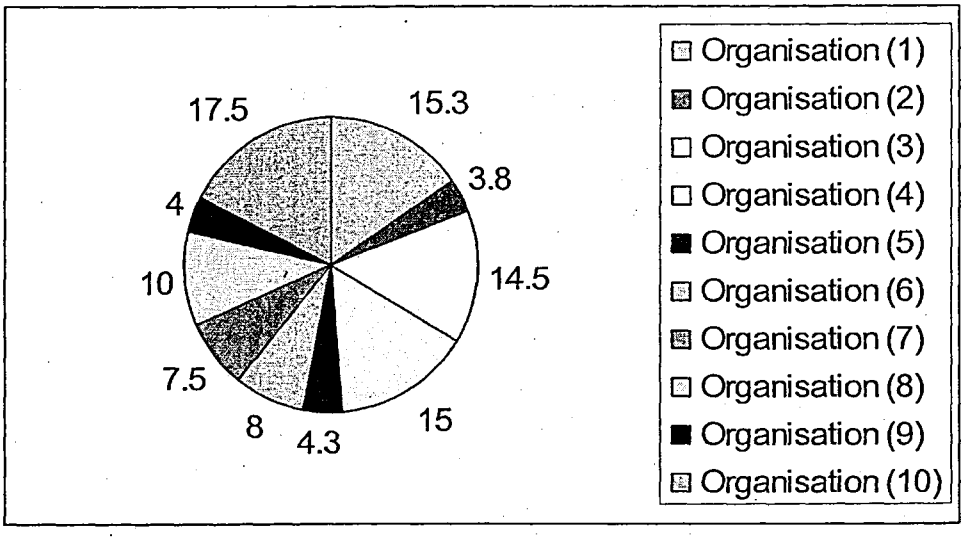


Figure (6.7) the respondents Tripoli Healthcare Organisations.

Table (6.10) Descriptive Statistics of Leadership factors.

	N	Minimum	Maximum	Mean	Std. Deviation
Vision	399	1.00	5.00	3.4637	.98637
Mission	399	1.00	5.00	2.3283	1.12083
Strategy	399	1.00	5.00	3.8797	1.14548
Communication	399	1.00	5.00	3.3008	1.18185
Empowerment	399	1.00	5.00	3.6090	1.18301
Trust	399	1.00	5.00	3.5514	1.11262
Team.D	399	1.00	5.00	3.6516	1.18255
Valid N (listwise)	399				

6.9. Descriptive Statistics:

The researcher used SPSS to show descriptive statistics of Leadership factors. SPSS is a computer software package, which is specifically designed to achieve statistical action and facilitate data analysis, and is by far the most common statistical package used by

social scientist (Miller et al, 2002, Pavkov et al, 2003, Green et al, 2004). The Descriptive Statistics table provides summary statistics for continuous, numeric variables.

Summary statistics include measures of central tendency such as the mean and measures of dispersion (spread of the distribution) such as the standard deviation. The first column of Table (6.10) lists the different categories of the variables of leadership. The second column provides number 399 respondents. The third and fourth column shows minimum and maximum answers between (1-5). The fifth column indicates that the mean is between 2.3283 and 3.8797. The final column illustrates that Standard Deviation is between 0.98637 and 1.18301.

6.10. Analysis of Variance (ANOVA):

It might be important to test the invisible null hypothesis of "there is no difference in the level of satisfaction with regard to leadership factors at all management level".

ANOVA compares the average values or levels of one variable (the means of the dependent variable) vary significantly across the categories of other variable or variables (the independent variable) (Kinnear et al, 1999, Miller et al, 2002, Sweet et al, 2003).

It evaluates the extent of differences between the perceptions of the respondents groups (top, middle and lower management) in determining aggregate mean value (Green et al, 2004). Descriptive Table (6.11a) and the ANOVA Table (6.11 b), both of which offer relevant information to assess the relationship between leadership factors and management levels. Leadership factors consist of seven factors that are: - (*Vision, Mission, Strategy, Communication, Empowerment, Trust and Team development*). While management levels were dividing the sample into three groups of levels, *top management, middle management and lower management.*

ANOVA compares the variance between groups with the variance within groups, to attain a number called the F-ratio. The larger value of the F-ratio, the larger variance among groups so, F-ratio illustrate whenever the difference between groups is significant (Miller et al, 2002).

Table (6.11a) one-way ANOVA output Descriptive.

		N	Mean	Std. Deviation	Std. Error	95% Confidence Interval for Mean	
						Lower Bound	Upper Bound
Vision	Top Management	20	1.1000	.30779	.06882	.9559	1.2441
	Middle Management	214	3.0841	.70039	.04788	2.9897	3.1785
	Lower Management	165	4.2424	.48328	.03762	4.1681	4.3167
	Total	399	3.4637	.98637	.04938	3.3666	3.5607
Mission	Top Management	20	1.0500	.22361	.05000	.9453	1.1547
	Middle Management	214	1.7850	.72550	.04959	1.6873	1.8828
	Lower Management	165	3.1879	1.01566	.07907	3.0318	3.3440
	Total	399	2.3283	1.12083	.05611	2.2180	2.4386
Strategy	Top Management	20	1.1500	.36635	.08192	.9785	1.3215
	Middle Management	214	3.5327	.96237	.06579	3.4030	3.6624
	Lower Management	165	4.6606	.53530	.04167	4.5783	4.7429
	Total	399	3.8797	1.14548	.05735	3.7670	3.9924
Communication	Top Management	20	1.0500	.22361	.05000	.9453	1.1547
	Middle Management	214	2.9439	1.01474	.06937	2.8072	3.0807
	Lower Management	165	4.0364	.84746	.06597	3.9061	4.1666
	Total	399	3.3008	1.18185	.05917	3.1844	3.4171
Empowerment	Top Management	20	1.1000	.44721	.10000	.8907	1.3093
	Middle Management	214	3.5187	1.16568	.07968	3.3616	3.6758
	Lower Management	165	4.0303	.80716	.06284	3.9062	4.1544
	Total	399	3.6090	1.18301	.05922	3.4926	3.7255
Trust	Top Management	20	1.7000	.57124	.12773	1.4327	1.9673
	Middle Management	214	3.2150	.99791	.06822	3.0805	3.3494
	Lower Management	165	4.2121	.81740	.06363	4.0865	4.3378
	Total	399	3.5514	1.11262	.05570	3.4419	3.6609
Team.D	Top Management	20	1.4000	.75394	.16859	1.0471	1.7529
	Middle Management	214	3.3318	1.06026	.07248	3.1889	3.4746
	Lower Management	165	4.3394	.80013	.06229	4.2164	4.4624
	Total	399	3.6516	1.18255	.05920	3.5352	3.7680

Table (6.11b) ANOVA output.

		Sum of Squares	df	Mean Square	F	Sig.
Vision	Between Groups	242.634	2	121.317	332.263	.000
	Within Groups	144.589	396	.365		
	Total	387.223	398			
Mission	Between Groups	217.752	2	108.876	152.761	.000
	Within Groups	282.238	396	.713		
	Total	499.990	398			
Strategy	Between Groups	275.411	2	137.705	220.940	.000
	Within Groups	246.815	396	.623		
	Total	522.226	398			
Communication	Between Groups	217.851	2	108.925	127.595	.000
	Within Groups	338.059	396	.854		
	Total	555.910	398			
Empowerment	Between Groups	156.934	2	78.467	77.668	.000
	Within Groups	400.074	396	1.010		
	Total	557.008	398			
Trust	Between Groups	164.809	2	82.404	99.522	.000
	Within Groups	327.888	396	.828		
	Total	492.697	398			
Team.D	Between Groups	201.339	2	100.669	112.221	.000
	Within Groups	355.238	396	.897		
	Total	556.576	398			

Descriptive Table (6.11a) and the ANOVA Table (6.11b) show the aggregate differences between the mean levels of satisfaction with leadership factors. For example, for satisfaction levels of effective the Vision, top management respondents score a mean of 1.1000 (standard deviation = .30779), middle management respondents score a mean of 3.0841 (standard deviation = .70039) and lower management score a mean of 4.2424

(standard deviation =. 48328). The tables above indicate the total differences between the mean levels of satisfaction with Vision, it can be seen that lower management score higher on the level of dissatisfaction with their Vision than middle management and top management, and middle management score higher than top management on dissatisfaction with Vision. In addition, Table (6.11b) shows that F is 332.263; the significance of F is .000, as this level of significance means that there is less than one in 1000 chance that the difference between management groups came about by chance. Likewise, the descriptive table gives the number of cases in each group, which illustrates that, the lower management score higher on the level of dissatisfaction with all leadership factors than the other groups. The Standard deviation for top management respondents in all factors is a smaller score than other levels of management. The ANOVA results (see Table 6.11b), are the most significant of all factors equal (0.000), since $p<0.0005$ and the mean value of a very small, therefore we can reject the invisible null hypothesis "there is no difference in the level of satisfaction with regard to leadership factors in all management levels" which mean that satisfaction with the leadership factors, differ in all management levels.

6.11. Correlation Analysis:

Correlation is a statistical method that researchers use to inquire into the relationship between two variables (Pavkov et al, 2003, Sweet et al, 2003, Coakes, 2005). The correlations table displays Pearson correlation coefficients, significance values, and the number of cases with non-missing values. The researcher measured the relationship between the management levels and leadership factors. A perfect relationship is one in

which all respondents gave the same ratings to the overall system and a particular component. A measure of relationship is just a number which degree tells you how strongly two variables are related. In general, measures of relationship range in absolute value from 0 to 1, the larger the absolute value of the measure, the stronger the relationship between two variables (Norusis, 2004).

Table (6.12) Output for the Pearson Correlation.

		Manag.Level
Manag.Level	Pearson Correlation	1
	N	399
Vision	Pearson Correlation	.777(**)
	Sig. (2-tailed)	.000
	N	399
Mission	Pearson Correlation	.651(**)
	Sig. (2-tailed)	.000
	N	399
Strategy	Pearson Correlation	.698(**)
	Sig. (2-tailed)	.000
	N	399
Communication	Pearson Correlation	.614(**)
	Sig. (2-tailed)	.000
	N	399
Empowerment	Pearson Correlation	.441(**)
	Sig. (2-tailed)	.000
	N	399
Trust	Pearson Correlation	.572(**)
	Sig. (2-tailed)	.000
	N	399
Team.D	Pearson Correlation	.584(**)
	Sig. (2-tailed)	.000
	N	399

** Correlation is significant at the 0.01 level (2-tailed).

Table (6.12) shows a correlation of r = .777 between management levels and vision within the 399 employees examined. The positive correlation infers that management levels and vision go in the same direction with moderate relationship. Also the results indicate a significant positive correlation between management levels and vision with a relatively conservative criterion of p = .000. It is important to state that when SPSS put on record a significance level of .000 this should be read as .0005 or less, rather than zero (Miller et al, 2002). Likewise, the relationship between management levels and mission, strategy and Communication correlation of r = (.651, .698 and .614) are also moderate relationships. The positive correlation shows that management levels and these factors jointly in the same way. The significance level or p-value is 0.000, which indicate that p<. 001. The small significance level illustrated that management levels and these factors are significantly positively correlated. On the other hand, the relationship between management levels, empowerment, trust and team development correlation of r = (.441, .572 and .584) are slight relationships; this indicates that management levels and some leadership factors are not strongly correlated.

6.12. Reliability Analysis:

Table (6.13) shows that a brief of respondents by the participants and provides information regarding the Mean and Std. Deviation for respondents to each question and a report stating how many participants completed the question.

Table (6.13) Item Statistics

	Mean	Std. Deviation	N
Vision	3.4637	.98637	399
Mission	2.3283	1.12083	399
Strategy	3.8797	1.14548	399
Communication	3.3008	1.18185	399
Empowerment	3.6090	1.18301	399
Trust	3.5514	1.11262	399
Team.D	3.6516	1.18255	399

Scale Mean if Item Deleted in The Table (6.14) below shows that the effects on the overall mean of the scale if an individual question is deleted. For example Table (6.14) shows that if question number one were deleted from the final version of the questionnaire, the overall mean of the scale would fall from 23.7845 to 20.3208. Likewise, effects can be seen from examining the Scale Variance if Item deleted column. In addition, Table (6.15) below shows that results for the whole questionnaire, when the total scores of the questionnaire are examined, participants scored a mean of 23.7845; with a Variance of 45.195, and Std. Deviation of 6.72270. The small Std. Deviation thus indicates that there are not large variations in the scores of participants for the overall total score on the questionnaire. Finally, Table (6.16) below shows that reliability coefficients (Alpha .935) and (Standardized Items alpha = .936) for all 7 factors. Pallant (2003) indicated that Cronbach-alpha coefficient of scale should be above 0.7. Thus,

Table (6.14) and Table (6.16) provides evidence that the values are nearly the same and an alpha score above 0.7, which indicate that measurement model, is reliable.

Table (6.14) 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
Vision	20.3208	34.590	.830	.773	.922
Mission	21.4561	34.279	.736	.730	.930
Strategy	19.9048	32.343	.886	.833	.916
Communication	20.4837	33.160	.782	.673	.926
Empowerment	20.1754	34.301	.685	.624	.935
Trust	20.2331	33.330	.827	.763	.921
Team.D	20.1328	32.945	.799	.744	.924

Table (6.15) Scale Statistics

Mean	Variance	Std. Deviation	N of Items
23.7845	45.195	6.72270	7

Table (6.16) Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.935	.936	7

6.13. Evaluation of Leadership in Tripoli Healthcare Organisations:

The exploration conducted in Tripoli healthcare indicates that the level of healthcare is falling back. Therefore, the questionnaire is designed to discuss the roles and requirements of leadership excellence in the Tripoli healthcare sector. Seven leadership factors have been selected from many literature reviews, these items were used for developing a self-explanatory survey questionnaire (on a five-point Likert scale ranging from strongly agree to strongly disagree) to collect data from managers and employees in different management levels which consist of seven factors (*Vision, Mission, Strategy, Communication, Empowerment, Trust and Team development*) structural model for measuring leadership excellence developed and tested in the Tripoli healthcare sector. Table (6.17) and (6.18) show the brief, overall evaluation of respondents with regard to Leadership Excellence.

Table (6.17) Evaluation of Leadership in Tripoli Healthcare Organisations

Leadership Factors	S.Agree	Agree	Neutral	Disagree	S.Disagree	Total Score
	100	80	60	40	20	%
Vision	19	38	130	163	49	50.72
Mission	93	174	61	50	21	73.43
Strategy	17	50	36	157	139	42.40
Communication	24	82	125	86	82	53.98
Empowerment	27	49	78	144	101	47.81
Trust	24	39	115	135	86	48.97
Team development	17	62	84	116	120	46.96
Total Score						52.03

Table (6.17) displays the respondents opinion about the evaluation of leadership factors and its total score. For example, vision has been seen as strongly agree by 19 people and seen as agree by 38-person etc. this in total will be:

$19 + 38(0.80) + 130(0.60) + 163(0.40) + 49(0.20) = 202.4/399 = 50.7\%$

To evaluate the excellence of suitability of the model, the values of score in all factors are examined, Table (6.17) and (6.18) illustrated that the percentage of difference strengths and weaknesses points of leaders in the Libyan healthcare sector by the factors involved in each structural equation in the questionnaire.

Table (6.18) Measuring (LE) in Tripoli Healthcare Organisations.

Factors and core concepts of the Model	Score (%)
L1: Vision	50.72
L2: Mission	73.43
L3: Strategy	42.40
L4: Communication	53.98
L5: Empowerment	47.81
L6: Trust	48.97
L7: Team development	46.96
LE: Leadership Excellence (LE)	52.03

Each person that filled in a questionnaire was asked about his/her levels of satisfaction with leadership factors. This will facilitate creating an organisational culture that is required for implementation of TQM and illustrating strengths and weakness points of leaders in the Libyan healthcare sector. According to Evans (2008) understanding one of strengths and opportunities for improvement make a basis for evolving toward higher levels of performance. Table (6.17), Table (6.18) above and Figure (6.8) below classifies the investigated employees under these categories. Table (6.17), (6.18) and Figure (6.8) indicated that the total differences between levels of satisfaction with leadership factors, it can be seen that the highest level of leadership effective factors was (73.43%)

performable by the mission (L2), after that the communication (L4) at (53.98%), then vision (L1) with (50.72%). On the other hand, the lowest level of leadership effective factors was (42.40%) performable by the strategy (L3).

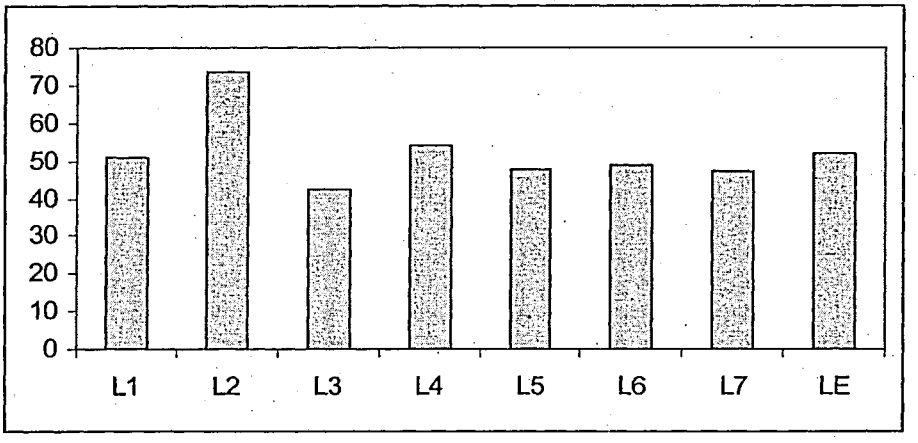


Figure (6.8) Leadership Excellence in Libyan Healthcare Organisations.

In addition, Table (6.19) and Figure (6.9) show that the strengths and weakness points of leadership in Tripoli healthcare sector by dividing these areas into three parts, the lowest area that includes three factors which are, Strategy (L3) with (42.40%), (L7) Team development with (46.96%) and Empowerment (L5) of (47.81%). However, the medium is not very far from the lowest area on the average 48.97%, 50.72% and 53.98% successively Trust (L6), Vision (L1) and Communication (L4). On the other hand, the highest effective factor is Mission (L2) with (73.43%).

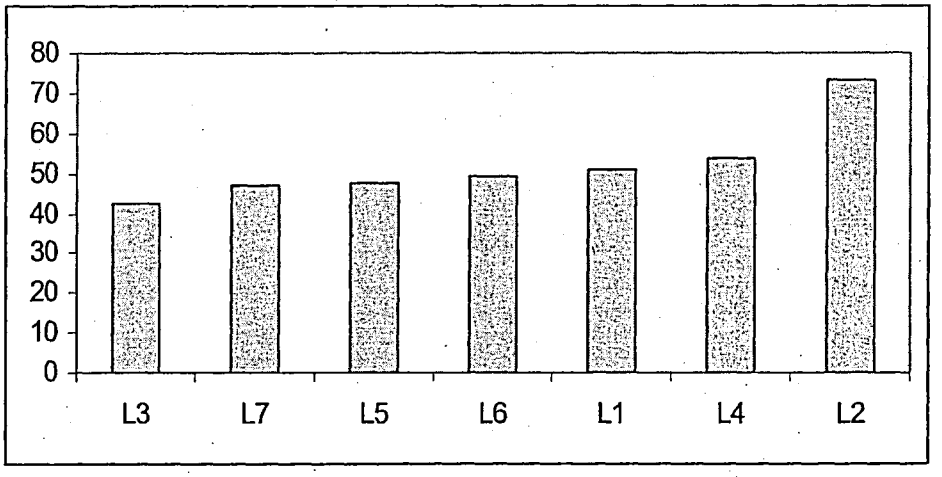


Figure (6.9) The strengths and weaknesses points of leadership in Tripoli healthcare

Table (6.19) The strengths and weaknesses points of leadership in Tripoli healthcare

Factors of the Model	Score (%)	Order of the factors values
L3: Strategy	42.40	
L7: Team development	46.96	The lowest
L5: Empowerment	47.81	
L6: Trust	48.97	
L1: Vision	50.72	The medium
L4: Communication	53.98	
L2: Mission	73.43	The highest

6.14. The results and discussion:

From the field study a result it has been noted that the big numbers of the means in Table (6.11a) means that the employees are dissatisfied with effectiveness of leadership factors. Therefore, the field study results revealed that the degrees average of the strategy (L3) is about (3.87) see Table (6.11a) which is the lowest effective factor of leadership with (42.40%) see Table (6.19) this means it is not positive in the organisation culture, the degrees average was differentiated as in Table (6.11a) with the difference of management level. It has been found that the biggest degrees average (4.6606%) was representing the view of the lower management, whereas the medium and top management (3.5327%) and (1.1500%), it can be seen that the lower management scored higher on the level of dissatisfaction with their strategy (L3) than middle management and top management. On the other hand, it can be seen that the top management scored higher on the level of satisfaction with their strategy (L3) than middle management and lower management. This is logical because the top management is trying to improve the image, which is of concern. This factor in general is not positive and needs treatment to apply the total quality management, the following are the reasons mentioned by the sample persons, as justifications to evaluate this element:

- There are no attempts to know how to transfer and study to find customers wishes.
- Work system has been the same for a long time.
- Most employees do not know any thing about quality.
- Healthcare organisations have not received any quality certificates, and far too many improvements are needed

- Weakness of strategic thinking by leaders as a result of carelessness in paying the employees salaries.

Likewise, in Table (6.11a) it has been noted that the top management answers for Team development (L7) were about (1.4000), that is higher on level of satisfaction with their Team development (L7) than middle management and lower management. Also, it has been found that the biggest degrees average (4.3394%) representing the view of the lower management while the medium management was (3.3318%). The degrees average of the Team development (L7) is (3.6516) see Table (6.11a) which, is also one of the lowest effective factor of leadership compared with the mission (L2) with only (46.96%) see Table (6.19). The following are the reasons mentioned by the sample persons as justifications to evaluate this element:

- The low quality of service in top management, due to employees' low performance.
- Top management deals with problems and tries to find reasons for punishment.
- Top management does not motivate the employees' to carry the responsibility.

It has been found that the answers from top management tend to recommend administrative aspects concerning management of the organisation and it is logical that the top management is trying to improve the image of belonging. In all the answers it has been discovered that top management fully satisfied all the factors that make effective leadership. Middle and lower management responses were more reflective of the nature of the culture of these organisations because they are far removed from the organisational hierarchy, and participate in the development of policies within these organisations, which is reflected in the attitude and the degree of satisfaction within the working

climate. In addition, the middle and lower management feel the reflection of top management practices are more of a vision of the top management

The least degree average in the view of the middle and the lower management is the mission (L2), which is (1.7850%) and (3.1879%) with score (73.43%) which is the highest effective factor in Libyan healthcare organisations. This means it is positive in the organisation culture because the employees appreciate that the mission and purpose for any healthcare should be clear. Also they recognise that the leaders always identify the organisations purpose and all the employees have a clear idea about the mission of the healthcare organisations, which is built on the principle of providing health services for every body that has been approved by the General Congresses, which is the legislative authority in Libya.

In addition, Table (6.11a) and Table (6.19) show that communication (L4) is positive in the organisation culture compared with the mission (L2) with score (53.98%) at total mean (3.3008%) see Table (6.11a) which is also the highest effective factor of leadership, the degrees average was differentiated as in Table (6.11a) with the difference of management level. It has been discovered that the biggest degrees average (4.0364%) was representing the view of the lower management, while the medium and top management (2.9439%) and (1.0500%). The following are the reasons mentioned by the sample persons as justification to evaluate this element:

- There is cooperation between employees.
- Employees try to improve their skills.
- Most employees acknowledge the importance of quality improvement.
- Top management sometimes listens and assents to the employees needs.

6.15. Summary:

After the analytical study of the field research data which enabled the author to measure the leadership excellence that currently exist within Libyan healthcare organisations and to identify the organisational culture that is required for implementation of TQM. It can be said that:

- The X theory concepts are still acceptable from the leaders of Libyan healthcare organisations, in which they kept practicing their job according to their elements. A Theory X manager believes that his or her employees do not really want to work, that they would rather avoid responsibility. Employees were considered passive because they disliked responsibility and work; they lacked ambition, were resistant to change and preferred to be led (Carson, 2005). Therefore, the administration interfered extensively in details, and this lost the work flexibility, and zealousness, thus the work becomes routine.
- The leadership of Libyan healthcare organisations has a fear of taking the responsibility of making changes to create a quality culture, it seems to be absolutely centralised, and still needs to understand the importance of the participation.
- The leadership of Libyan healthcare organisations has a narrower view on quality concept; it believes that only focusing on employees, by emphasis on procedures and blaming them to reduce mistakes could acquire the quality. So in their opinion the employees must be responsible for weakness of quality.
- The leadership of Libyan healthcare sector is positive in some factors, such as the mission and communication. However, it is passive from other aspects that need treatment to apply the total quality management. In addition, the management in

Libyan healthcare sector has to learn the difference between management and leadership style, because the management style is still following the traditional quality concept.

In this chapter, a questionnaire survey method was adopted to gather the data and information, which form the basis for the development of the proposed TQM framework. Moreover, the role and requirements of leadership excellence that currently exist within Libyan healthcare organisations, which required implementing TQM was discussed and conceptualised. The model was validated using ten healthcare organisations through questionnaires. In addition, strengths and weakness points of leadership in Libyan healthcare sector were illustrated. The model is expected to help decision-makers to identify the performance of leadership with a view to addressing which areas that require immediate attention and to develop strategies for the performance excellence. Healthcare managers will be able to use these results to evaluate their organisations in order to improve areas that require immediate attention.

Finally, this part of the thesis has been used to achieve the following objectives:

- Review the current healthcare system in Libya.
- Review the literature comprehensively to identify and develop appropriate research method(s) in order to identify the weakness in the current system.
- Identify the organisational culture that is required for implementation of TQM and to compare this with the situation that currently exists within Libyan healthcare.

In the next chapter questionnaire survey will be used; the first section of the questionnaire will be designed to discover which areas require immediate improvement and which is

more important with respect to excellence performance and by what scale using five quality factors namely: *Leadership, Training and Education, Focus on Customer, Process and Measurement and Continuous Improvement.* Data and views will be collected from Director of health sector in Tripoli and from managers in the organisations under investigation. The second section will be designed to compare healthcare organisations in Tripoli-Libya to clarify which alternative is preferred, with respect to above five factors and by what scale. The main deliverable of the next chapter is to identify best practices of TQM factors with respect to excellence performance in Libyan healthcare organisations and benchmarking the performance between Libyan healthcare organisations with a view to clarify which organisation is out performed with respect to the identified TQM factors. This will help in identifying the areas that require immediate attention.

Chapter seven:

Performance Excellence in Healthcare Organisations

7.1. Introduction:

There is an enormous pressure on healthcare organisations managers to improve their performance and find out the most appropriate design and operational policies that allow these organisations to be ready for today's challenges. This chapter focuses on the identification of the best practice of total quality management (TQM) factors that allow these organisations to seize performance excellence and provide a benchmarking tool for these TQM factors. This chapter considers five TQM factors namely: *Leadership, Training and Education, Focus on customer, Process and measurement and Continuous Improvement* which form the basis for the development of a model to measure the performance excellence of healthcare organisations. Analytical Hierarchy Process (AHP) is used to implement the proposed performance excellence model which has been validated through questionnaires within healthcare organisations in the developing countries and in particular Libyan Healthcare Organisations. Nine healthcare organisations are involved in this questionnaires and the proposed AHP model used to provide pair-wise comparison between these organisations and also facilitate to carry out dynamic sensitivity analysis to test the priorities of alternative if less or more importance is given to a particular criterion. This helps to examine different scenarios and re-addresses the importance of TQM factors in a "what if" approach. The decision maker could use the results to establish which factor and which organisation should be improved to realise a competitive advantage. With this understanding, healthcare managers will be able to use the results to evaluate their organisations in order to improve areas that require immediate attention.

7.2. Performance Excellence:

Delivering excellence in health and social care needs commitment from all concerned, including government ministers and local councillors. Actually excellence as a word suffers from several of the ambiguities associated with word 'quality'. Quality is defined in Webster's dictionary and the Oxford dictionary as the 'degree of excellence'. In addition, to deliver excellence, organisations require objective ways to measure how well they are doing and to observe changes over time in order to find out which part of performance still need immediate attention (Moullin, 2002). McNealy (1993) indicated that quality like "excellence" which can mean many things to many people.

According to Evans (2008) Quality must be the value inherent in how the organisation managed. If good management practices are designed and implemented, then good results should follow. This leads to the concept of performance excellence. He added that the performance excellence refers to an integrated approach to organisational performance management that results in the delivery ever - to enhance the value of customers and stakeholders, and contribute to organisational sustainability; improve the overall efficiency and organisational ability; and organisational and personal learning. Performance excellence is a characteristic of today's most excellent organisations, and is a requisite for providing high quality goods and services.

Moullin (2002) stated that 'excellence' means excellence in everything. He added that while quality tends to be defined in word of outcomes (such as customer satisfaction) excellence also contains process and further results outcomes including financial and society results. Evans (2008) indicated that organisations make the decision to adopt a performance excellence philosophy for two vital reasons:

- A firm reacts to competition that is a threat to the survival of lucrative resort to quality.
- Performance excellence represents a chance to improve.

Moullin (2002) illustrated that there is a relationship between achieving excellence and performance measurement. Without performance measurement it is not possible to evaluate the extent to which recognises the value and achieve excellence:

- Excellence is wonderful practice in managing organisations and delivering advantage for customers and other stakeholders.
- Performance measurement is assessing how well organisations are managed and the advantage they deliver for customers and other stakeholders.

Performance measures are usually used in three ways:

- Review historical performance, and to answer the questions how well did we do and what we need to improve;
- To encourage an improvement in performance, and when used in conjunction with the reward structure;
- Directly for change, because the person monitoring performance within their control is likely to become a substantially motivated to improve performance.

Evans (2008) indicated that during the 1990s, healthcare, government, and education started to pay increased attention to quality. As more public and focus the government's attention on the nation's health care system, which in turn provides a means to achieve quality performance better and cost less. He added that the most successful organisations have discovered that the basic principles of total quality are vital to effective management

practice, and continue to represent a sound approach for realising business success. The real challenge today is to make sure that managers do not lose sight of the essential principles on which quality management and performance excellence are based.

7.3. Benchmarking:

Benchmarking is the means by which the objectives, priorities and processes could be established which would lead to competitive advantage. The word ' benchmarking' is a reference or standard measurement used for comparison, the benchmarking is a continuous process to identify and understand and adapt the best practices and processes that would lead to superior performance (Oakland, 1999). Moullin (2002) indicated that Benchmarking is structured learning of the practice of others. It can be defined as constantly measuring and comparing one in similar operations against the operations in leading organisations to obtain information that would assist the organisation in identifying and implementing improvements. Oakland (1999) presented that organisations use benchmarking usually as a motivation to continue or get ahead and as a means of managing the changes needed to maximize the benefits. The main aim of benchmarking is to:

- Change the views of executives and managers;
- Compare business exercises with those of first-class organisations;
- Challenge present practices and procedures;
- Create better aims and practices.

Moreover, he added the links between benchmarking and excellence is clear, establishing objectives based on best practice should directly give to better meeting of the internal and external customer needs. The benefits of benchmarking can be many but include:

- Creating a better understanding of the current situation.
- Heighten sensitivity to changing customer requirements.
- Encouraging innovation.
- Developing realistic aims.
- Establishing realistic action plans.

In addition, Moullin (2002) indicated that benchmarking opens up opportunities for creative thinking, instead of being concentrated persons affected by the fact that 'we have always done it this way'. Helps make a real step changes and offers the possibility of transforming a poor performing area into one of the best. He added that benchmarking could take place at a number of levels:

- Internal: comparisons between different departments or areas within an organisation.
- Competitive: comparison of performance with similar organisations or departments.
- Functional: comparison of one's own performance with other organisations performing similar functions within health and social care.
- Generic: comparison of one's own performance with others performs similar functions outside health and social care.

7.4. Evaluation performance excellence using AHP:

Analytical Hierarchy Process AHP (Saaty, 1980) will be used to identify and prioritise the TQM factors and measure the performance in Libyan healthcare organisations.

7.4.1. Analytical Hierarchy Process (AHP):

The Analytical Hierarchy Process (AHP) is a generic theory of measurement. It is a technique that can be employed to establish measures in both the physical and social fields (Saaty, 1988). The AHP method that was developed by Saaty (1980, 1990, and 1994) uses a process of pair-wise comparisons to specify the relative importance and thus the priority of alternatives in a multi-criteria decision-making problem. It is includes decomposing a complex and unstructured problem into a set of variables that are organised into a hierarchy (Chow and Luk, 2005). Chin et al (2002) illustrated that AHP is a powerful approach in solving fuzzy and complex decision problems. In addition, Saad and Gindy (2007) indicated that AHP could be useful for decision-making process by allowing decision makers to evaluate the significance of the objectives (criteria) and finding alternatives. For more than two decades, AHP may be studied as part of the curriculum includes techniques of decision-making in the faculties of engineering and business. Empirical evidence measurements practice has evolved since the late 1970s. It is clear that measurements had a significant impact on the exercise of decision-making. It is a problem-solving framework and a systematic procedure for representing the elements of any problem (Shahin and Mahbod, 2007). Moreover, Udo (2000) indicated that the AHP technique has been adopted in many applications such as business performance evaluation, project selection, auditing, public policy, marketing, health care, transportation and many other areas.

The AHP approach is constructed generally from three essential steps. Shahin and Mahbod (2007) illustrated that the following three steps that can be guidelines and helpful:

1. Start structuring top down and then determine first objective criteria and the alternatives that affect the goal or will help to achieve that goal.

2. Comparison analysis – Once the hierarchy has been structured, the second step are to identify the ratio of the priorities of each place in the hierarchy. This is done through pair-wise comparisons of the child items below a parent node. The comparisons are done with respect to the importance or contribution of the item to the parent node and also provide its relative importance. Since those priorities reflect the relative importance of the items held only without pain, and called the local weights.

3. Total local weights to the priorities of this compound are the last step, through the principle of hierarchic composition that first multiplies local weights by the product of all higher-level priorities. Within the hierarchy of this process turns local to global loads measured the importance of each held in a pyramid. This is the global weights and then summed up the specific alternative to the composite influence of priority measures all of the criteria. Then, the alternative with the highest composite weight is selected.

AHP provides a measure called the inconsistency ratio (IR) to check the inconsistency of judgments. The inconsistency of pair-wise is measured comparisons of the expense priority automatically after each component model. In general, a value less than 0.10 are generally considered acceptable. Badri and Abdulla (2004) indicated that one of the most

advantages of the AHP is that it has built-in methodical confirms on consistency of judgments. Expert Choice 2000, the software used, provides a measure of logical rationality, named the inconsistency ratio. If it is 0.10 or less the inconsistency is usually considered reliable. Udo (2000) presented that an overview regarding Expert Choice, which is a multi-attribute decision support software tool, based on the AHP methodology. This tool is able to assist the decision makers to examine and determine problems involving many evaluation criteria and assess the desirability of alternatives. The Expert Choice software supports the user in all stages of the problem-solving process, from model formulation to last report output. The structuring module quality assists users in creating an AHP model of the decision problem.

7.4.2. Justification for using AHP:

According to Zanakis et al (1998) several methods have been found for solving multi-attribute decision-making problems (MADM). The different methods might give different results when applied to the same problem. They examined the performance of eight methods: ELECTRE, TOPSIS, Multiplicative Exponential Weighting (MEW), Simple Additive Weighting (SAW), and four versions of Analytic Hierarchic Process (AHP). SAW was selected as the basis to which to compare the other methods, because its simplicity makes it used a lot by practitioners. Generally, all AHP versions behave similarly and closer to SAW than the other methods. Likewise, Mohanty and Venkataraman (1993) indicated that an advantage of the AHP over other methods is that it is designed to deal with tangible as well as non-tangible criteria, especially those in which the subjective judgements of persons constitute an important part of the decision

process. In addition, based on Davies (2001), (Water and Vries, 2006) and (Shahin and Mahbod, 2007) the researcher indicated that the following Table (7.1) with literature support regarding the application of the AHP model which justify why the researcher used AHP for this study.

Table (7.1) Justification for using AHP with literature support (Davies, 2001, Vries, 2006, Shahin and Mahbod, 2007)

-The AHP model is a structured method to get the preferences of managers and decision makers in an easy to understand way.	(Saaty, 2000; Yang, 1997)
- The AHP model encourages the process of learning and debate.	(Vries, 2006)
-The hierarchical structure of the model provides decision makers with the possibility to decide whether criteria at all levels of the same system.	(Yang, 1997)
-Several commercial software packages based on the AHP approach is available (e.g. Expert Choice)	(Vries, 2006)
- By means of the AHP model, it is possible to verify the consistency of options.	(Saaty, 1994, 2000; Belton, 1986)
- The AHP model can be used as an tool to reach group consensus.	(Al-Subhi Al-Harbi, 2001)
- The AHP model is a robust model compared to other multiple criteria decision models.	(Santana, in Salomon, 2001)

-In the case of AHP the size of the matrices increases with the number of levels and number of alternatives. For this reason the software tool to be applied is an important issue when the AHP model is used in a large decision-making setting.	(Vries, 2006)
- Projects correlation ownership limits for alternatives to a difficult integration into a fine approach.	(Lee, 2001)
- AHP can deal with the different types of data in many ways, such as the merging of intangible with tangible data or qualitative with quantitative factors.	(Vargas and Saaty, 1981; Calantone et al., 1999; Ghodsypour and O'Brien, 1998; Ghodsypour and O'Brien, 1998; Dyer et al., 1992)
-The AHP model combines together qualitative and quantitative factors in an included decision-making framework and can be considered as a helpful tool for difficult decision-making processes. It reduces complex decisions to a series of one on one comparison.	(Vries, 2006)
- AHP allows a number of persons and groups to share equally in the decision-making process. The analytical process can provide an important link for developing trust and true group participation.	(Shahin and Mahbod, 2007)

7.5. The proposed performance excellence model:

The main aim of this evaluation is to develop a model to measure the performance in Libyan healthcare. Under this aim, the main deliverable are to identify best practices of TQM factors with respect to performance excellence and benchmarking the performance between Libyan healthcare organisations with a view to clarify which healthcare organisation is out performed with respect to the identified TQM factors which will help in identifying the areas that require immediate attention. In addition, develop a TQM framework that is appropriate for Libyan healthcare sector.

In total nine healthcare organisations were chosen in Tripoli healthcare sector. The study has gone through three stages, including:

1. Structuring a hierarchy model for performance excellence.
2. Implementation of a hierarchy model in Tripoli healthcare sector.
3. Results and discussion.

7.5.1. Structuring a hierarchy model for performance excellence.

For this model, the performance excellence was chosen to be the main goal to achieve. The model was structured into a three-level hierarchy as shown in Figure (7.1). The top level of the hierarchy states the goal of the model (performance excellence). Moullin (2002) indicated that measurement of performance have to be clearly related to the organisation's strategy. It is also vital that the measures selected are seen as logical by employees. As it has been mentioned in chapter four that in spite of the limited differences between researchers in the field of total quality management on what the key factors of the total quality management systems, the researcher chosen of the most important of those factors that are generally accepted by many researchers which related

to the strategy in Libyan healthcare. For that reason, the second level consists of five TQM factors (*Leadership, Training and Education, Focus on customer, Process and measurement and Continuous Improvement*). The third level lists of nine healthcare organisations in Tripoli health sector.

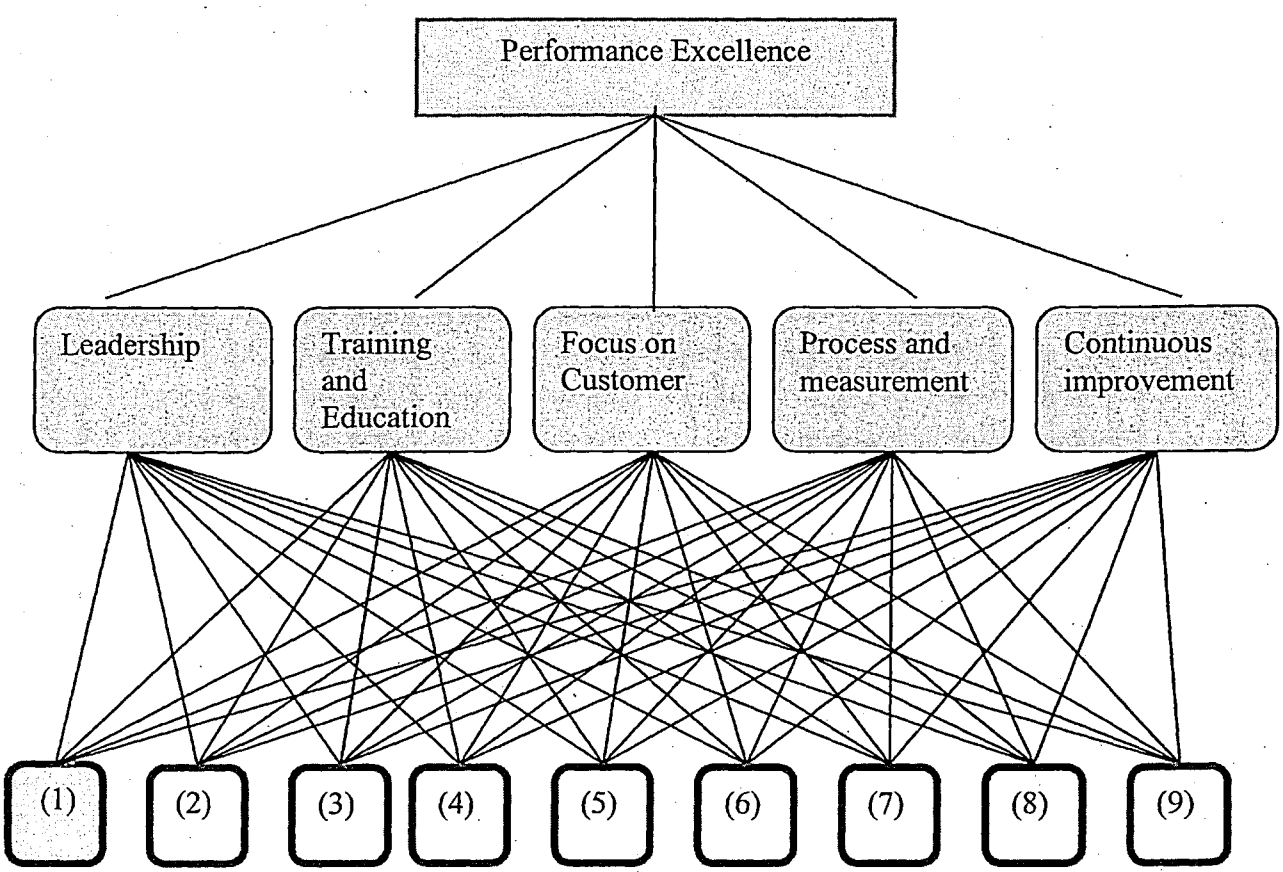


Figure (7.1) The proposed performance excellence AHP model of Tripoli healthcare organisations.

7.5.2. Implementation of a hierarchy model of Tripoli healthcare sector.

In order to validate the model, nine healthcare organisations were chosen in Tripoli healthcare sector that are three grouped clinics, three health centres and three healthcare

units. The proposed model implemented to measure the performance in Libyan healthcare sector through the following:

In accordance with the model described above, the questionnaire was structured into two sections. The first section designed to discover which areas require immediate improvement on which alternative is more important with respect to performance excellence and by what scale using five quality factors. Data and views collected from nine senior managers in the organisations under investigation.

The second section of the questionnaire (related to the third level of the hierarchy) designed to compare nine healthcare organisations in Tripoli-Libya to clarify which alternative is more performed with respect to above five factors and by what scale. A structured questionnaire was designed for this purpose (see Appendix 2).

Statistically this sample size is not enough, however, it has been found that these nine senior managers and director of healthcare sector are fully aware of the Healthcare system and their opinion will provide enough and high quality information as they are the decision makers in the organisations involved in the questionnaire. Also, this particular questionnaire wouldn't be suitable for other employees because of the nature of the questions asked which need decision makers to answer and there are not many of these levels in the selected organisations.

The judgments were based on a nine-point fundamental scale, which used in AHP for making the pair-wise comparison judgments see Table (7.2) that shows detailed description on how to use the scale in order to complete a pair-wise comparison of the criteria with respect to the goal.

Meeting was made together with director of Tripoli healthcare sector and managers of organisations under investigation for explaining purposes and goals of the questionnaire, definition of TQM and its success factors. In addition, the explanation of advantage of the proposed TQM framework for achieving performance excellence in Libyan healthcare organisations, which can be used for:

- Developing a new system to measure performance in Libyan healthcare.
- Continuous improvement.
- Identifying a culture that strongly focuses on quality performance.
- Helping in developing and modernising service performance measures.

Table (7.2) Comparison scale (Ta and Har, 2000)

Intensity of Importance	Definition	Explanation
1	Equal importance	Two activities contribute equally to the objective
2	Weak	
3	Moderate importance	Experience and judgment slightly favor one activity over another
4	Moderate plus	
5	Strong importance	Experience and judgment strongly favor one activity over another
6	Strong plus	
7	Very strong or demonstrated importance	An activity is favored very strongly over another: its dominance demonstrated in practice
8	Very, very strong	
9	Extreme importance	The evidence favoring one activity over another is of the highest possible order of affirmation
Reciprocals		Reciprocals for inverse comparison

The questionnaire was used because the respondents needed time to complete the pair-wise comparisons of the five TQM factors and the pair-wise comparisons of the nine healthcare organisations with respect to each of the five TQM factors.

The researcher used Expert Choice, which is a multi-attribute decision support software tool, based on the AHP methodology. The software is able to carry out each part of the evaluation and after that synthesise these judgments. Moreover, it is able to test the consistency ratio for the pair-wise comparisons of every level automatically.

7.5.3. Results and discussion.

To clarify importance of the critical factors and identifying the areas that require immediate attention with respect to performance excellence; the results could reflect the general status of prioritisation the relative importance of these factors in Libyan healthcare organisation. The pair-wise comparison for the second level shows TQM factors at the top and on the left see Table (7.3). Based on the judgments of the respondents, the matrix shows numerical values (based on the nine-point importance scales) indicating the importance of the TQM factors on the left relative to the importance of the TQM factors at the top. A high value indicates that the TQM factors on the lift are more important than the TQM factors at the top.

Table (7.3) Pair-wise comparison matrix for TQM factors.

TQM factors	Training and Education	Focus on Customer	Process and measurement	Continuous improvement
Leadership	1.4	1.1	1.1	1
Training and Education		1.3	1.1	1
Focus on Customer			1.6	1.1
Process and measurement				1.2

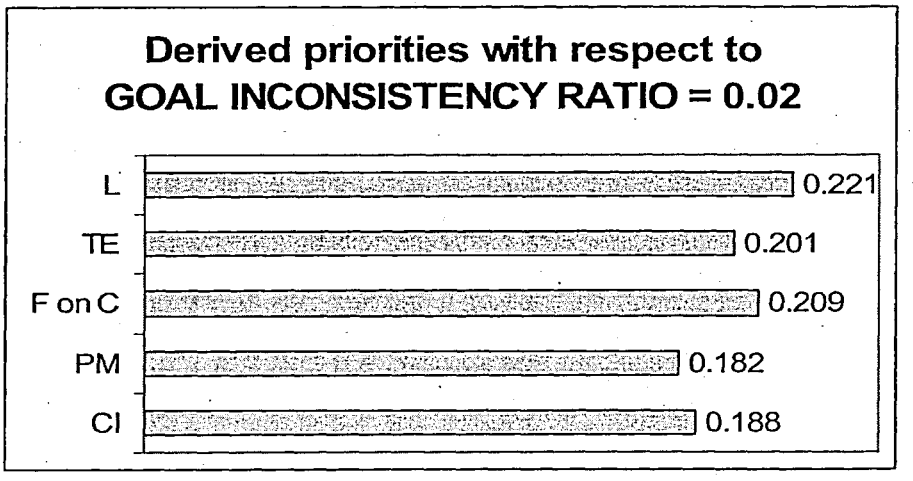
The researcher used Microsoft Excel to collect the mean respondents of nine senior managers as explained in Table (7.4) below and then used it in the Expert Choice as explained in Table (7.3) above.

Table (7.4) Mean respondents of nine senior managers using Microsoft Excel.

Factor	Factor	O1	O2	O3	O4	O5	O6	O7	O8	O9	Times	POWER(L2,(1/9))	IF(M2<1,1/M2,M2)	ROUND(N2,1)
L	TE	1	3	1	1	1	2	1	2	2	24	1.423498	1.4235	1.4
L	FC	1	1	1	1	0.5	1	1	4	1	2	1.08006	1.0801	1.1
L	PM	3	1	0.333	1	1	2	1	1	1	1.998	1.07994	1.0799	1.1
L	CI	1	1	0.5	0.5	2	2	1	1	1	1	1	1.0000	1.0
TE	FC	2	0.5	2	0.5	1	3	2	2	1	12	1.317981	1.3180	1.3
TE	PM	1	0.5	1	2	1	1	1	3	1	3	1.129831	1.1298	1.1
TE	CI	0.5	0.333	1	1	2	2	2	0.5	1	0.666	0.955842	1.0462	1.0
FC	PM	2	1	1	2	3	2	1	3	1	72	1.608312	1.6083	1.6
FC	CI	1	1	1	2	2	1	1	0.5	1	2	1.08006	1.0801	1.1
PM	CI	2	1	3	1	1	0.5	0.5	3	1	4.5	1.181896	1.1819	1.2

The evaluation procedure started at the second level. The scales identified using interview and questionnaire and then the researcher used an AHP software package. The performance measures were compared pair-wise to prioritise TQM factors and to discover which areas require immediate attention on which alternative is more important

with respect to performance excellence. Figure (7.2) shows that the priority weights of TQM factors and the inconsistency ratio (IR) for this level were 0.02.



Node	Definition
GOAL	Performance Excellence
L	Leadership
TE	Training and Education
F on C	Focus on Customer
PM	Process and measurement
CI	Continuous improvement

Figure (7.2)The priority weights of TQM factors

As shown in Table (7.3) and Figure (7.2) Leadership was the most important factor with a weight of 0.221 in the second hierarchy level. Hereunder, the details:

- Leadership is 1.4 times (equally) more important than training and education.
- Leadership is 1.1 times (equally) more important than focus on customer.
- Leadership is 1.1 times (equally) more important than process and measurement.
- Leadership is as important as continuous improvement.

The second important factor in the second hierarchy level was focusing on customer with a weight of 0.209 after that training and education with a weight of 0.201 and then

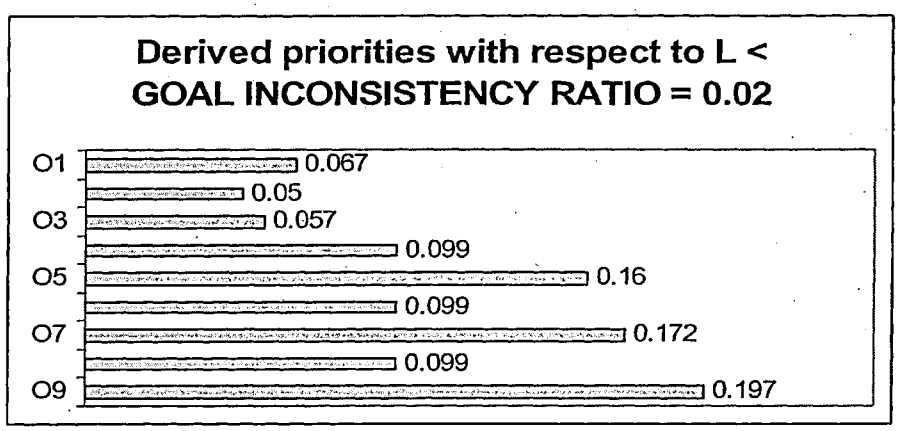
continuous improvement with a weight of 0.188 and finally process and measurement with a weight of 0.182. As regards to Table (7.3) stated the following:

- Training and education is 1.3 times (equally) more important than focus on customer.
- Training and education is 1.1 times (equally) more important than process and measurement.
- Training and education is as important as continuous improvement.
- Focus on customer is 1.6 times (equally to moderating) more important than process and measurement.
- Focus on customer is 1.1 times (equally) more important than continuous improvement.
- Process and measurement is 1.2 times (equally) more important than continuous improvement.

It has been mentioned that Leadership is the most important factor with respect to performance excellence. This is not surprising because one of the reasons is all senior managers have to take part in the creation of strategies, system, and methods for realising excellence in quality. In addition, dramatic results couldn't be recognised without the dynamic and personal leadership of senior managers (Tummala and Tang, 1996). Moreover, this is logical that the senior managers are trying to improve the image of belonging. The high priority also reflects the importance role of leadership to create quality culture that focuses on performance excellence. What is perhaps surprising outcome from the results is the relative importance related with the focus on customer, which is the second important factor in the second hierarchy level with a weight of 0.209.

This is probably a reflection that the senior managers studies and recognised that the importance of this factor with respect to performance excellence.

Regarding the third hierarchy level, the director of Tripoli healthcare sector was asked to make pair-wise comparisons of the nine healthcare organisations with respect to each the five criteria. Figure (7.3, 7.4, 7.5, 7.6 and 7.7) show the priority weights of level three which presented the relative preference of the nine healthcare organisations with respect to each the five criteria in level two. Moreover, the inconsistency ratio (IR) for this level that is less than 0.1. In addition, Figure (7.8) and Table (7.5) show the details of the total evaluation results.



Node	Definition
GOAL	Leadership
O1	Organisation (1)
O2	Organisation (2)
O3	Organisation (3)
O4	Organisation (4)
O5	Organisation (5)
O6	Organisation (6)
O7	Organisation (7)
O8	Organisation (8)
O9	Organisation (9)

Figure (7.3) The priority weights of the nine healthcare organisations with respect to Leadership

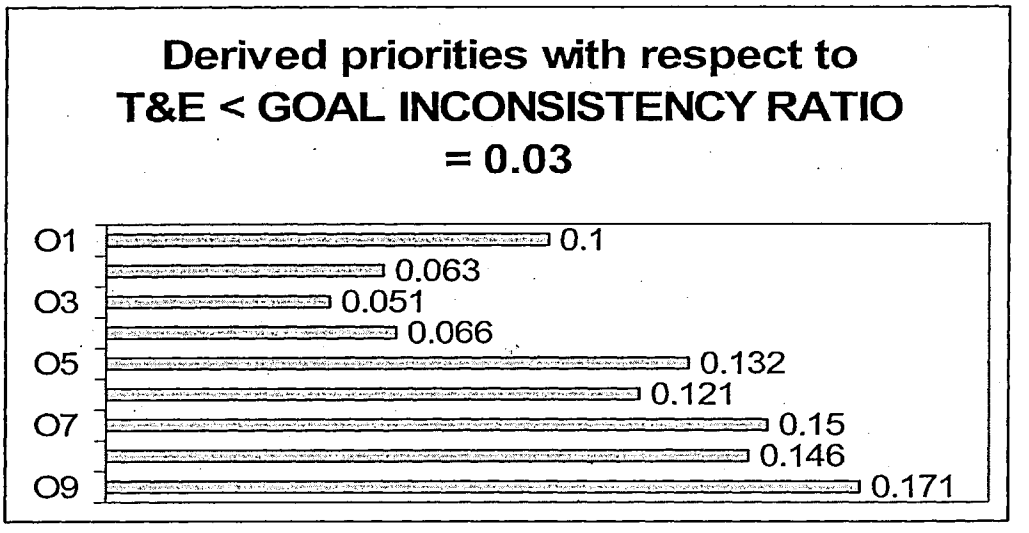


Figure (7.4) The priority weights of the nine healthcare organisations with respect to Training and Education

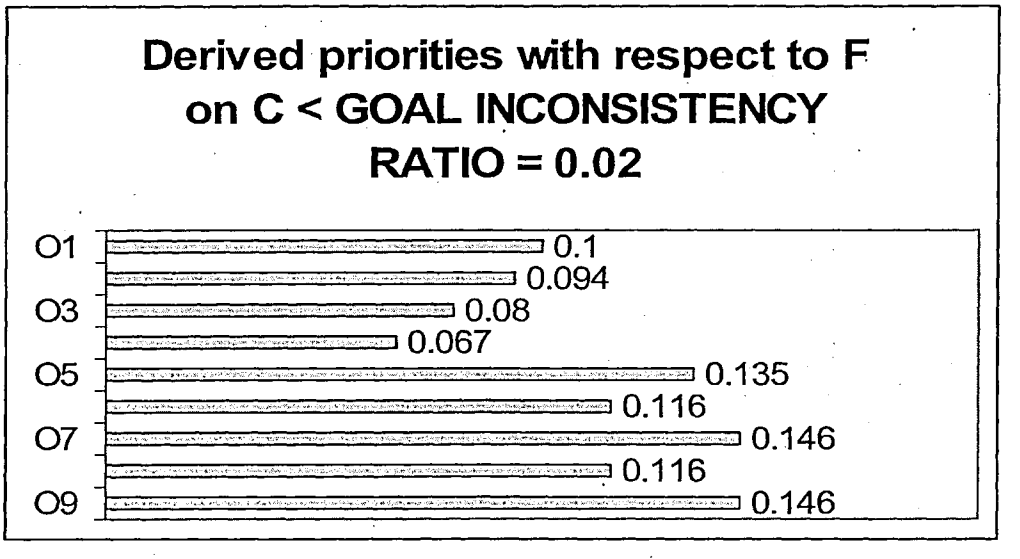


Figure (7.5) The priority weights of the nine healthcare organisations with respect to Focus on Customer

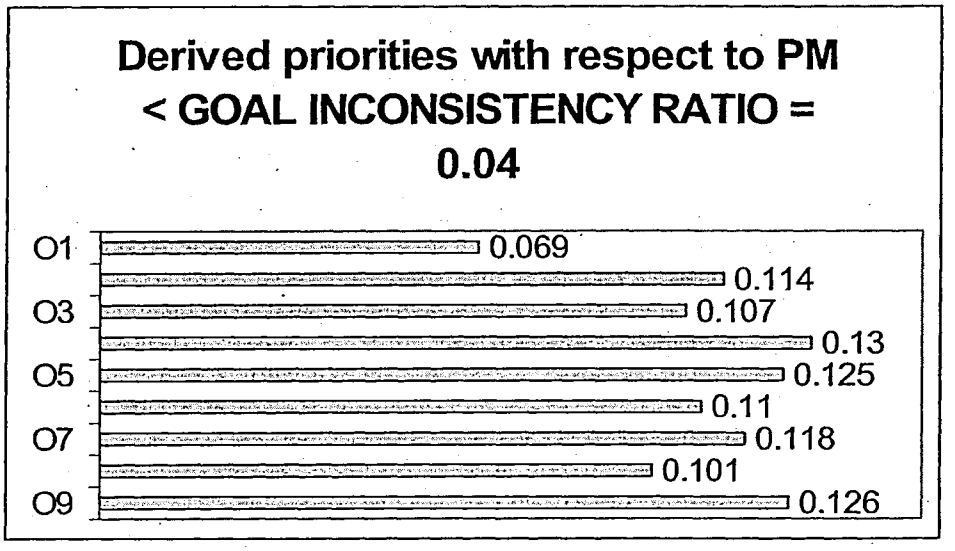


Figure (7.6) The priority weights of the nine healthcare organisations with respect to Process and measurement

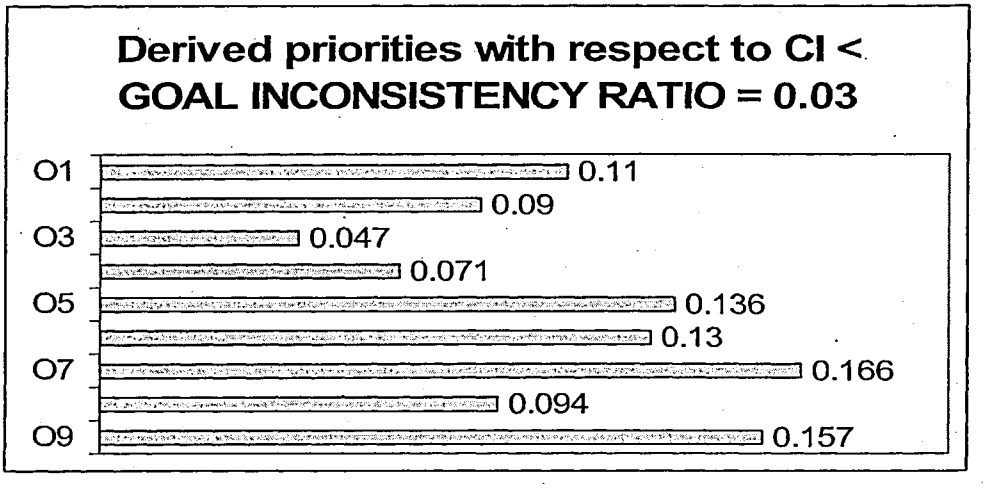


Figure (7.7) The priority weights of the nine healthcare organisations with respect to Continuous improvement

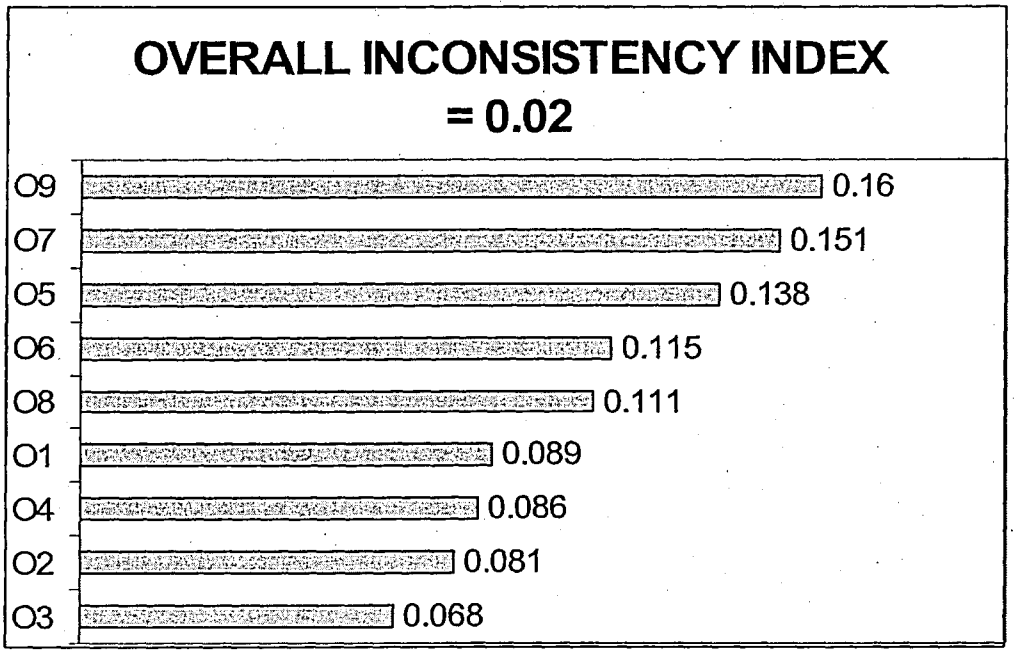


Figure (7.8) Distributive summary of the evaluation results

Table (7.5) Priority details for decision hierarchy.

TQM Factors	Level 2	Healthcare	Level 3
L	Priorities	Organisations	Priorities
	0.221		
		O9	0.043
		O7	0.038
		O5	0.035
		O4	0.022
		O6	0.022
		O8	0.022
		O1	0.015
		O3	0.013
		O2	0.011
FO	0.209		
		O7	0.031
		O9	0.031
		O5	0.028
		O6	0.024
		O8	0.024
		O1	0.021
		O2	0.02
		O3	0.017
		O4	0.014
T&E	0.201		

		O9	0.034
		O7	0.03
		O8	0.029
		O5	0.027
		O6	0.024
		O1	0.02
		O4	0.013
		O2	0.013
		O3	0.01
CI	0.188		
		O7	0.031
		O9	0.029
		O5	0.025
		O6	0.024
		O1	0.021
		O8	0.018
		O2	0.017
		O4	0.013
		O3	0.009
P&M	0.182		
		O4	0.024
		O9	0.023
		O5	0.023
		O7	0.021
		O2	0.021
		O6	0.02
		O3	0.019
		O8	0.018
		O1	0.013

From the priorities of the level three in Tables (7.5) and Figure (7.8), it has been proven that organisation number (9) is the most preferred healthcare organisation for three out of the five selection criteria. These are leadership with weight of 0.043, training and education with weight of 0.034 and focus on customer jointly with organisation number (7) with weight of 0.031. On the other hand, the organisation number (7) is most preferred on two out of the five selection criteria. These are focus on customer with weight of 0.031 and continuous improvement with weight of 0,031. These results provide the detailed feature on which each organisation is the most or least preferred, and the areas that require immediate attention.

7.6. Sensitivity Analysis:

Sensitivity analysis examines the sensitivity of the outcome to modify in the priorities of the criteria. This may help the decision making process to improve the service. The sensitivity analysis of AHP is mainly useful in that it offers real-time, interactive, graphical display of the ranking of the alternative as the decision makers compare different situation and possibilities (Udo, 2000). Saad and Gindy (2007) indicated that the approach allows examining different situations and finding out how a change in the importance of one criterion may influence other choice. With this approach, the decision-making procedure can be time after time repeated and documented while sensitivity analysis can be presented on the best selection before any action is taken (Udo, 2000). The following sections provide sensitivity analysis for evaluation of TQM factors and nine healthcare organisations:

Table (7.5) above and Figure (7.9) and (7.10) below have been shown that priority details for decision hierarchy for TQM factors and nine healthcare organisations.

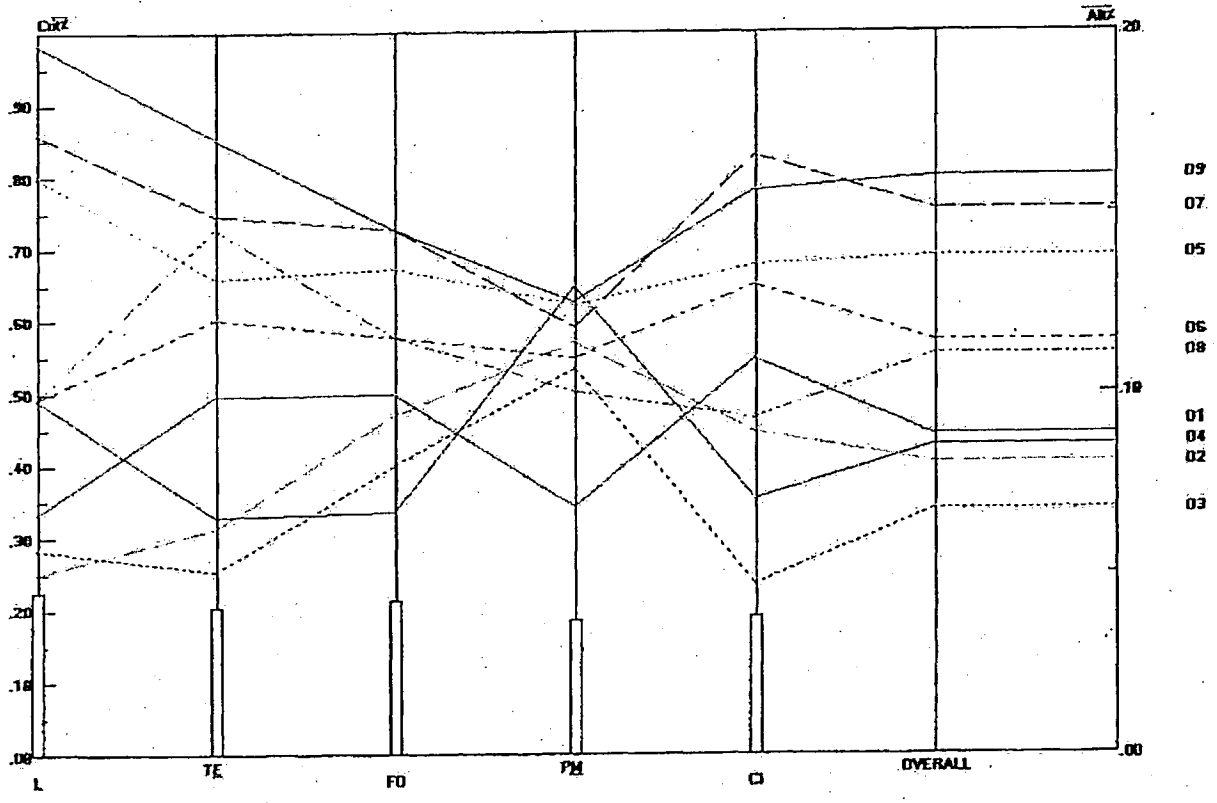


Figure (7.9) Performance sensitivity for performance excellence in Tripoli healthcare organisations.

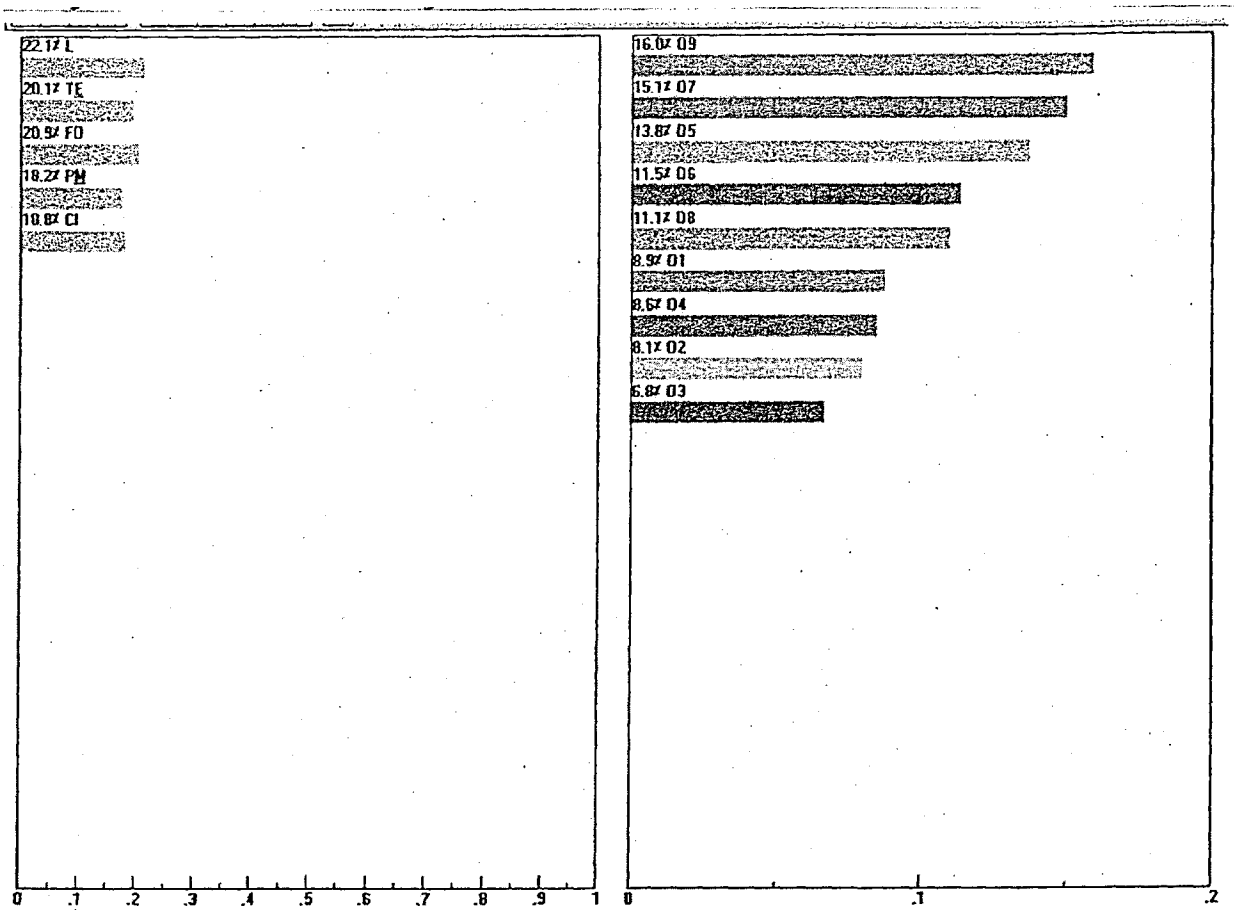


Figure (7.10) The dynamic sensitivity for performance excellence in Tripoli healthcare organisations (original situation).

Table (7.5) and Figure (7.9) and (7.10) have been mentioned that organisation number (9), (7) and (5) is the most preferred healthcare organisation in Tripoli healthcare sector with priority of 0.160, 0.151, and 0.138 respectively. Likewise, Figure (7.9) and (7.10) show that in general, alternative of organisation number (9) is prevailing. The results indicated that the organisation number (9) could do well and even better than other organisations. On the other hand, organisation number (3) is the least preferred with overall weight of 0.068. However, it should be noted that organisation number (9) was not preferred healthcare organisation for all TQM factors. For example, organisation (9)

with respect to process and measurement, and continuous improvement is considered to be lower from organisation number (4) and (7) respectively see Figure (7.9).

It might be important to test the priorities of alternative if less importance or more importance is given to the criteria. Dynamic sensitivity analysis will be used to test the variation of alternative priorities. Badri and Abdulla (2004) indicated that dynamic sensitivity analysis is used to discover how these changes affect the priorities of the alternative choices. Figures (7.11 - 7.14) will helps to examine different situations and re-addresses the importance of TQM factors in a "what if" approach. For example, if the decision maker believes that the factor of leadership should be less important than 22.1% down to 12.3%, organisation number (9), (7) and (5) is still the most preferred healthcare organisation in Tripoli healthcare sector. Likewise, organisation number (3) is still the least preferred healthcare organisation. However, when the importance of leadership was decreased the position of priority between organisation number (2) and organisation number (4) was changed up to 8.5% for organisation number (2) and organisation number (4) was decreased down to 8.4%. In the second situation, when the importance of focus on customer was increased up to 69.4% the least preferred healthcare organisation becomes organisation number (4) with weight of 7.5%. On the other hand, the organisation number (9) is still the most preferred healthcare organisation. In the next situation, when the importance of process and measurement was increased up to 75% the priority of most three preferred healthcare organisation in Tripoli healthcare sector was changed from organisation number (9, 7 and 5) to (9, 5 and 7) with weight of 13.6%, 12.9% and 12.8% respectively. On the other hand, the least preferred healthcare organisation becomes organisation number (1) with weight of 7.5%. The final situation,

only when the importance of continuous improvement was increased from 18.8% to 65.1%, organisation number (7) turned out to be the most preferred healthcare organisation, while organisation number (9) turned back to be the second preferred healthcare organisation.

In general, the sensitivity analysis indicated that the organisation number (9) is prevailing and top three most preferred alternatives stay their favourite situation in the top. It can be noticed that top three most preferred organisation are not sensitive to change. Therefore, the decision maker could use these results to establish which factor and which organisation should be improved to realize a competitive advantage. In other words, the findings reflect the strengths and weaknesses of the organisations. Likewise, this information is significant importance to the decision maker who needs to improve the service and identify best practices of TQM factors with respect to performance excellence in Libyan healthcare organisations. In addition, this information is significant importance to the decision maker who desires to benchmark the performance healthcare organisations with a view to clarify which organisation is out performed with respect to the identified TQM factors. With this understanding, the organisations could better position themselves and create strategies to gain a competitive advantage.

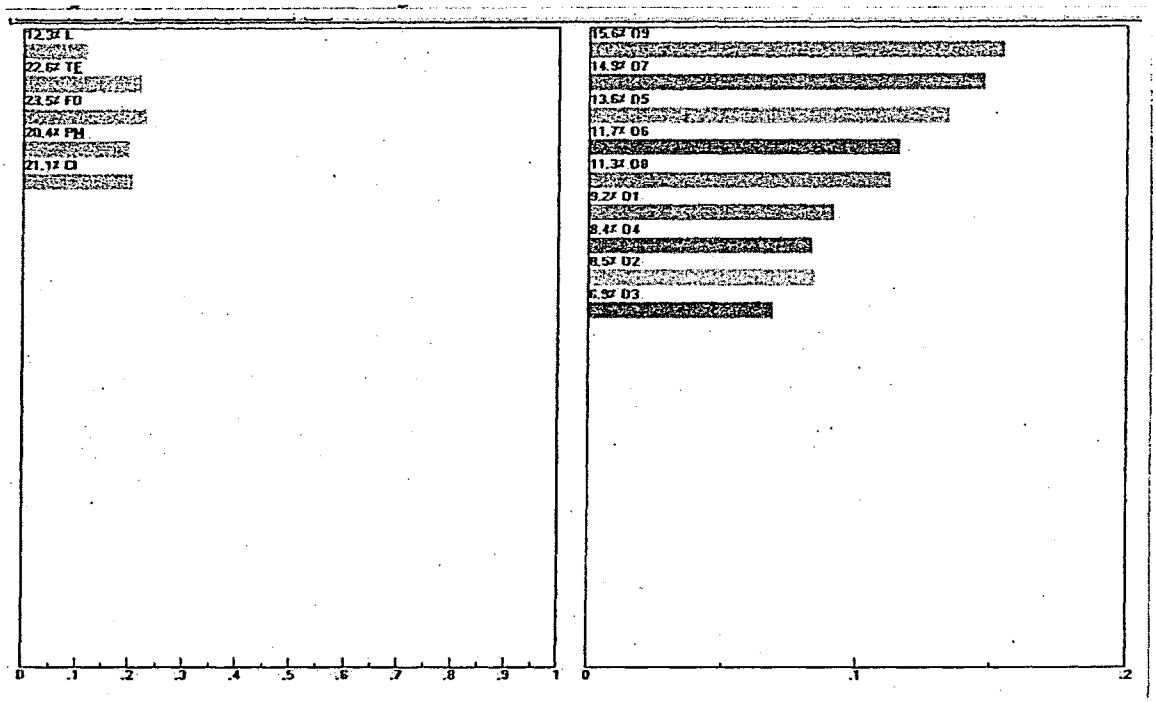


Figure (7.11) Dynamic sensitivity analysis – first situation.

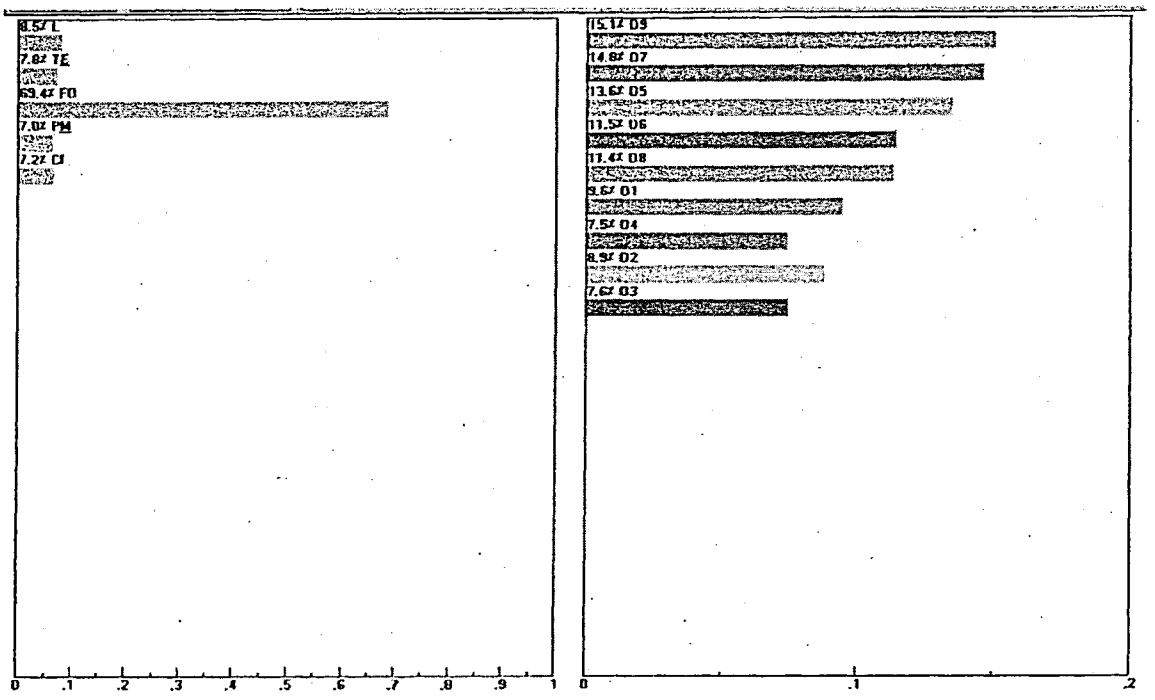


Figure (7.12) Dynamic sensitivity analysis – second situation.

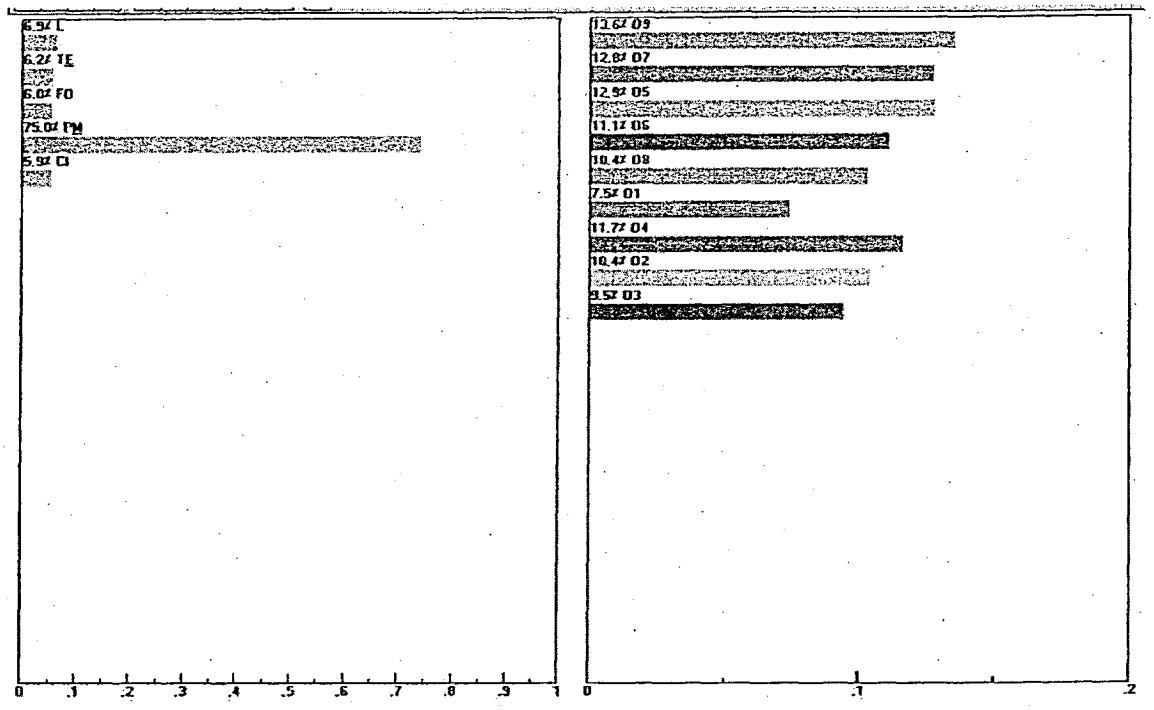


Figure (7.13) Dynamic sensitivity analysis – third situation.

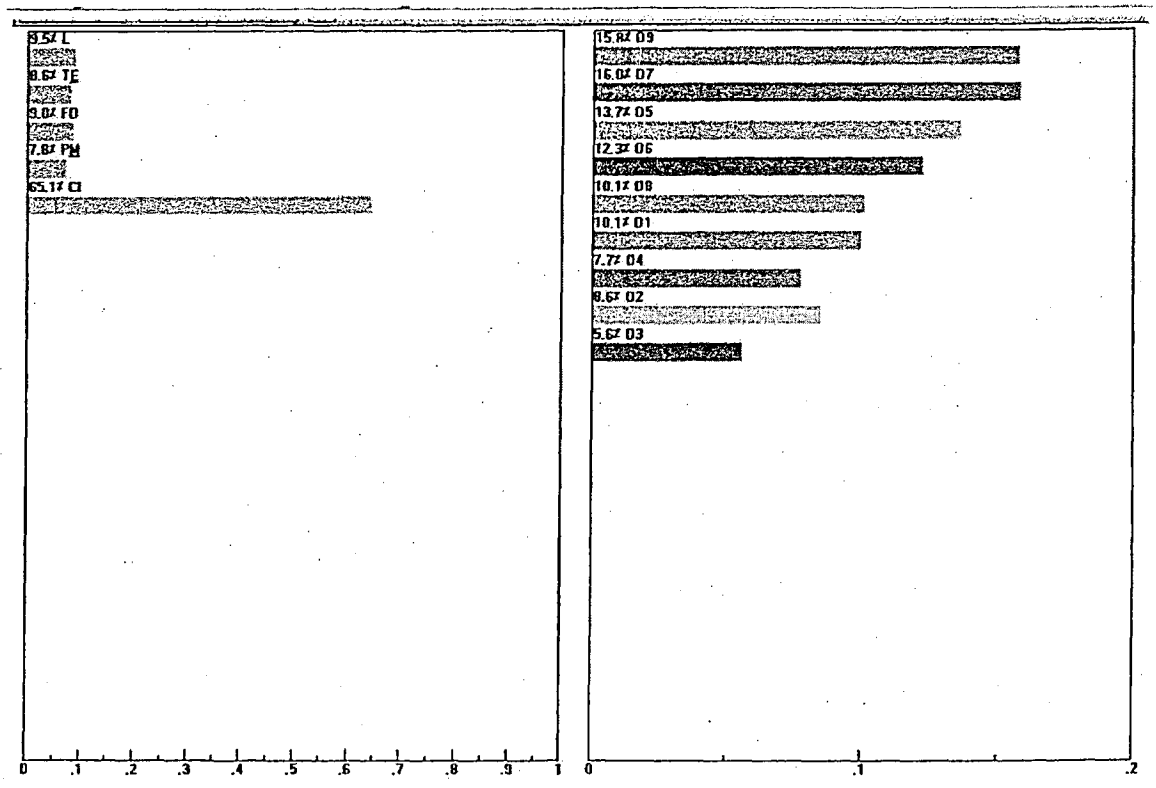


Figure (7.14) Dynamic sensitivity analysis – fourth situation.

7.7. Summary:

A model to measure the performance excellence of healthcare organisations was developed using AHP. Adopting the AHP methodology could be supported the managers to address on which each organisation the most or least is preferred, and the areas that require immediate attention. Questionnaire survey method has been adopted to obtain information regarding an identified problem. The model has been validated using nine healthcare organisations using questionnaires. The AHP based model could offer effective framework for decision-making. Healthcare managers will be able to use these results to evaluate their organisations in order to improvement areas that require immediate attention. In addition, the model expected to help Libyan healthcare sector to benchmarking the performance of healthcare organisations with a view to clarify which organisation is out performed with respect to the identified TQM factors.

After measuring the quality of service in the chapter six and seven the proposed framework and implementation procedure will be developed in the next chapter.

Chapter eight:

Framework for the implementation of TQM

8.1. Introduction:

This chapter provides steps and stages to implement the proposed TQM framework which start from awareness of top management of the need to change and the need to continuous improvement. In fact, TQM is not a fast management repair; it is about changing the method in which things are done within the organisation's lifetime (Kanji and Asher, 1996). The main deliverable of this chapter is a proposed TQM framework for achieving performance excellence in Libyan healthcare organisations and provides an implementation procedure.

8.2. Overview the organisational structure of Tripoli healthcare sector:

The outcome from the researcher's visits to health sectors in Tripoli and series of interviews with the director of healthcare sectors, it has been found that there are no procedures in place to take care of quality, see Figure (8.1). Weeks, et al (1995) indicated that the success of the unit which is responsible for quality administration with respect to its performance, it must get the attention and care by the higher administration, support, and incentives which are inclusive in enough authorities to enable it to play its role in the ideal way. Support and attention should start from the top management to prepare the causes for success total quality management. In addition, Brashier, et al (1996) illustrated that most healthcare administration recognises the need to take action to change is very important for the organisation if they want to improve before someone outside will be imposed to do it for them. However, the top management (Tripoli healthcare sector) does not discuss the proposals and recommendations submitted by the office which consider being responsible for quality developers, because the role of quality function is to be inspector, controller and writing the reports on the result of the diagnosis within the healthcare organisations. In addition, influence of this department is limited to consultation and not to implementation. Therefore, it cannot play the role required. Moreover, the reaction of managers and the staff working in health organisations to the quality plans and suggestion is weak.

In fact, the quality administration function is one of the main functions of the higher administration, however the department of control and inspection which carries out the tasks of quality administration, is unable to play its role required because again, it is far from the power centre.

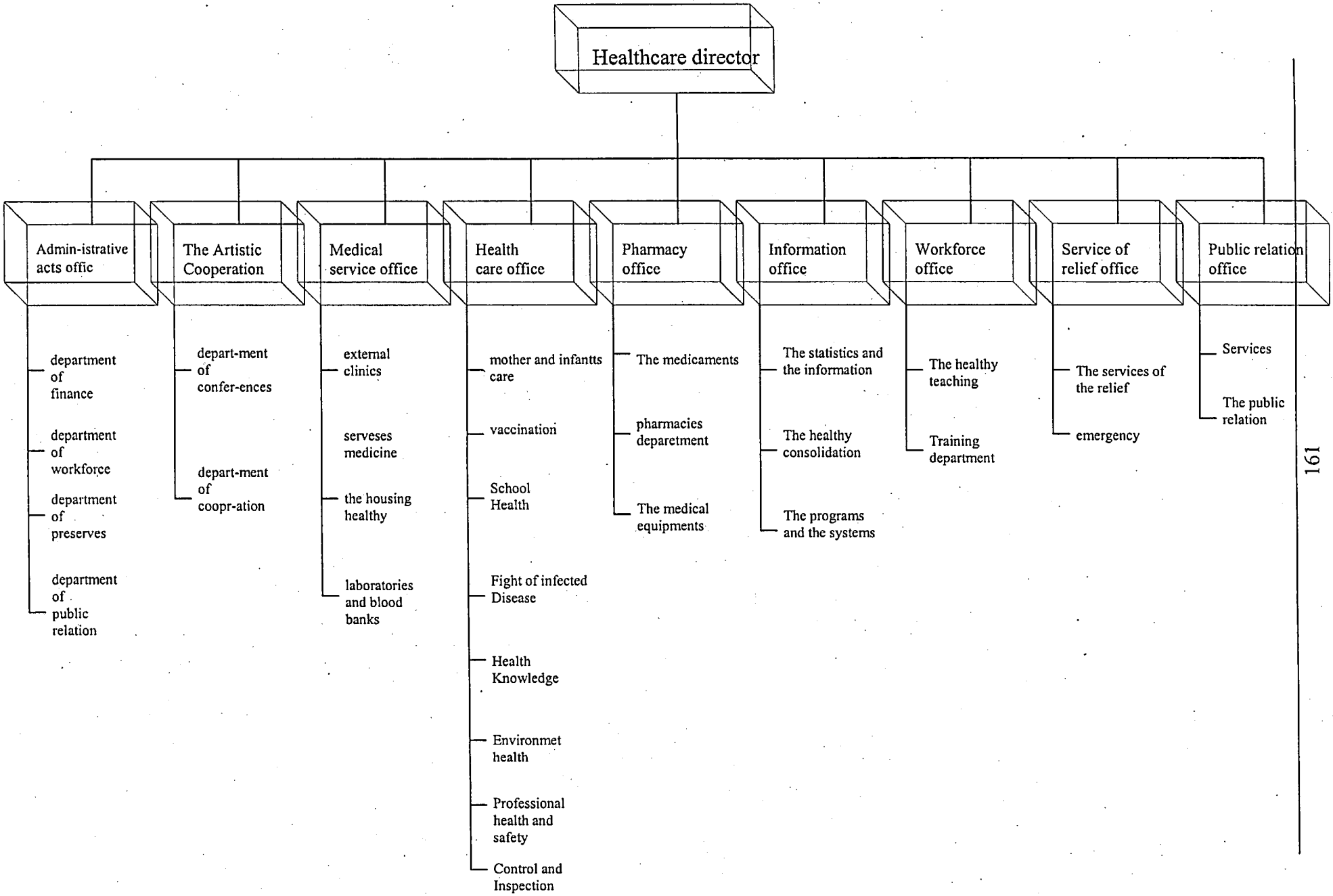


Figure (8.1) Organisational structure of Tripoli healthcare sector

Short et al (1995) indicated that quality control administration required cooperation and unification between all administrations and departments, and working in a unified way from the beginning and usually before planning. This should be the case because quality administration helps the hospitals to solve the problems that confront them and helps to develop the relationship between internal and external customers.

From what has been discussed above, the following can be concluded: -

- The role of the quality activity is confined for investigation, inspection and supervision to determine the extent to which the work has been performed. In addition, its role includes preparation of the reports on the weaknesses only and as such it does not try to solve those problems in order to avoid them in future and improve the performance.
- No cooperation between those who are responsible of the quality function and other sections and administrations. Thus, the big picture of the people who are responsible for quality as an inspector instead of helping these departments to avoid quality problems.

8.3. Framework for the implementation of TQM:

The process of setting out framework for total quality management to be implemented requires a number of steps and stages which will contribute in the preparation of the organisation culture for the creation of appropriate culture for the acceptance of total quality management philosophy. For the aim of this research and due to the adoption of total quality management it requires a framework for the implementation and being committed to it and continuously adjusts and evaluate its performance from time to time. However, the quality gurus have never agreed about a specific framework or implementation procedure. Moreover, there is no one size fits all models offered by experts. Oakland et al (1995) indicated that a comparison between the gurus approaches see Table (8.1). In addition, (Haigh et al, 1998) indicated that there is lack of a generic model in health care, and there is no clear agreement as to the way in which TQM should be implemented in a health care sector.

On the other hand, Chin et al (2002) illustrated that there are six general approaches, which could be used to develop and/or implement TQM. Whereas every one of these approaches works, the most positive TQM implementation plan is an integrated blend of them. They are:

1. Guru approach. The writings of Deming's 14-point model, Crosby's 14-steps and Juran's trilogy can be used for analysis and implementation.

2. Japanese model approach. The writings of Japanese writers for example Ishikawa and the educational guidelines of the Union of Japanese Scientists and Engineers can be used.

3. Total quality element approach. Elements (e.g. quality circles, statistical process control and quality function deployment) of continuous improvement rather than full implementation can be used.

4. Hoshin planning approach. This focuses on successful planning, deployment and execution and diagnosis of quality practices and performance measurement.

5. Quality awards/business excellence criteria approach. This can include such criteria as the Malcolm Baldrige National Award in the USA, the European Quality Award in Europe, Australia Quality Award in Australia, and alike quality awards in Hong Kong, to recognise areas for improvement.

6. Industrial company/leader model approach. Leaders from one organisation can visit an organisation using TQM, identify its system and put together this information by their own notes to make a customised approach. Visiting and learning from the quality/excellence award winners is an example of this approach.

Table (8.1) comparison of the American quality gurus (Oakland, 1995)

	Crosby	Deming	Juran
Definition of quality	Conformance to requirements	A predictable degree of uniformity and dependability at low cost and suited to the market.	Fitness for use
Degree of senior	Responsible for quality	Responsible for 94% of quality problems	Less than 20% of quality problems are due to workers
Performance	Zero defects	Quality has many scales. Use statistics to measure performance in all areas. Critical of zero defects	A void campaigns to do perfect work
General approach	Prevention, not inspection	Reduce variability by continuous	General management approach to quality especially human elements
Structure	Fourteen steps to quality improvement	Fourteen points for management	Ten steps to quality improvement
Statistical process	Rejects statistically acceptable levels of quality	Statistical methods of quality control must be used	Recommends SPC but warns that it can lead to tool-driven approach
Improvement basis	A 'process', not a programme. Improvement goals	Continuous to reduce variation. Eliminate goals without methods	Project-by project team approach. Set goals
Teamwork	Quality improvements teams. Quality councils	Employee participation in decision-making. Break down barriers between departments	Team and quality circle approach
Costs of quality	Cost of non-conformance. Quality is free	No optimum-continuous improvement	Quality is not free-there is an optimum
Purchasing and	State requirements. Supplier is extension of business. Most faults due to purchasers themselves	Inspection too late. Statistical evidence and control charts required	Problems are complex. Carry out formal surveys
Vendor rating	Yes and buyers. Quality audits useless	No - critical of most systems	Yes, but help supplier improve
Single sources of supply		Yes	No - can neglect to sharpen competitive edge.

Table (8.2) below shows that Juran's contributions expressed in his quality trilogy (Juran, 1989)

Table (8.2) Juran's contributions expressed in his quality trilogy (Juran, 1989)

Quality Planning	Quality Control	Quality Improvement
Determine who the customers are.	Evaluate actual product performance.	Establish the infrastructure.
Determine the needs of the customers.	Compare actual performance to product goals.	Identify the improvement projects.
Develop product features that respond to customers' needs.	Act on the difference	Establish project teams.
Develop processes able to produce the product features.		Provide the teams with resources; training, and motivation to:
Transfer the plans to the operating forces.		· Diagnose the causes.
		· Stimulate remedies.
		· Establish controls to hold the gains.

In addition, Brannan (1997) indicated that Quality in Daily Work (QIDW), which has been implemented at Bellin Hospital in Green Bay, Wisconsin USA, is a perfect example of how to implement TQM successfully. He illustrated that QIDW takes the Juran trilogy and divided it into sequential elements see Figure (8.2).

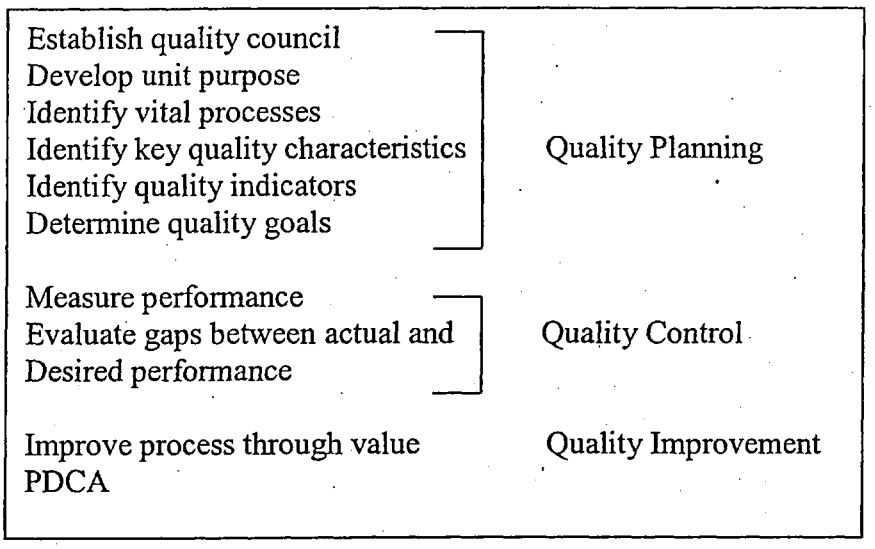


Figure (8.2) Quality in Daily Work (QIDW) Brannan (1997)

The researcher thinks that the success of total quality management system in some industrial countries does not mean that these models can be imitated in other countries. The success stories that reached global organisations in the implementation of total quality management do not mean at all that it is a model to be copied. In general, each organisation has internal and external conditions. Real success of this management philosophy can be achieved through determination and perseverance in the implementation, in accordance with the conditions of each organisation, which makes it difficult to achieve success through copies of a replica of the experiences of others. According to Evans (2008) the existence of a culture and values necessary for achieving performance excellence does not mean that all organisations that desire to implement total quality should have a similar culture. Several aspects of culture differ very much from one quality-oriented company to another.

In spite of the fact that there is not any clear agreement as to the way in which TQM should be implemented in a health care context and from what has been discussed above. Moreover, according to the available literature and based on my many visits to the organisations under investigation and based on stages of QIDW, Juran trilogy, Deming's

wheel of Plan-Do-Check-Act cycle and the policy of Libyan healthcare the researcher provides a proposed TQM framework for achieving performance excellence in Libyan healthcare organisations Figure (8.3).

8.4. The stages of the proposed TQM:

8.4.1. Quality Planning (QP):

Quality planning includes the following:

8.4.1.1. Adaptation and preparation:

This stage is to convince the administration to adopt the philosophy of total quality management, which is the most important stage in the implementation of total quality management as the administration, decides the implementation of this introduction. At this stage the administrator should understand TQM by highlighting the important features and perspectives related to implementing TQM in hospitals and healthcare. At the same time managers should attend training programmes that help them to know how to formulate the vision and objectives of the organisation and allocate the necessary resources. Moreover, managers receive training programmes about the system concept and its significance and requirements and then transfer the senior management ideas to staff of the organisation. The following steps are necessary for the appropriate implementation of total quality management:

- Culture of all hospital personnel and administrators must be changed to improve the quality and the significant of satisfying the customer (patients) as the main and essential goal in providing health services. In other words culture is the motive to implement quality programs, and carrying out of these programs gives positive results to both patients and personnel themselves.

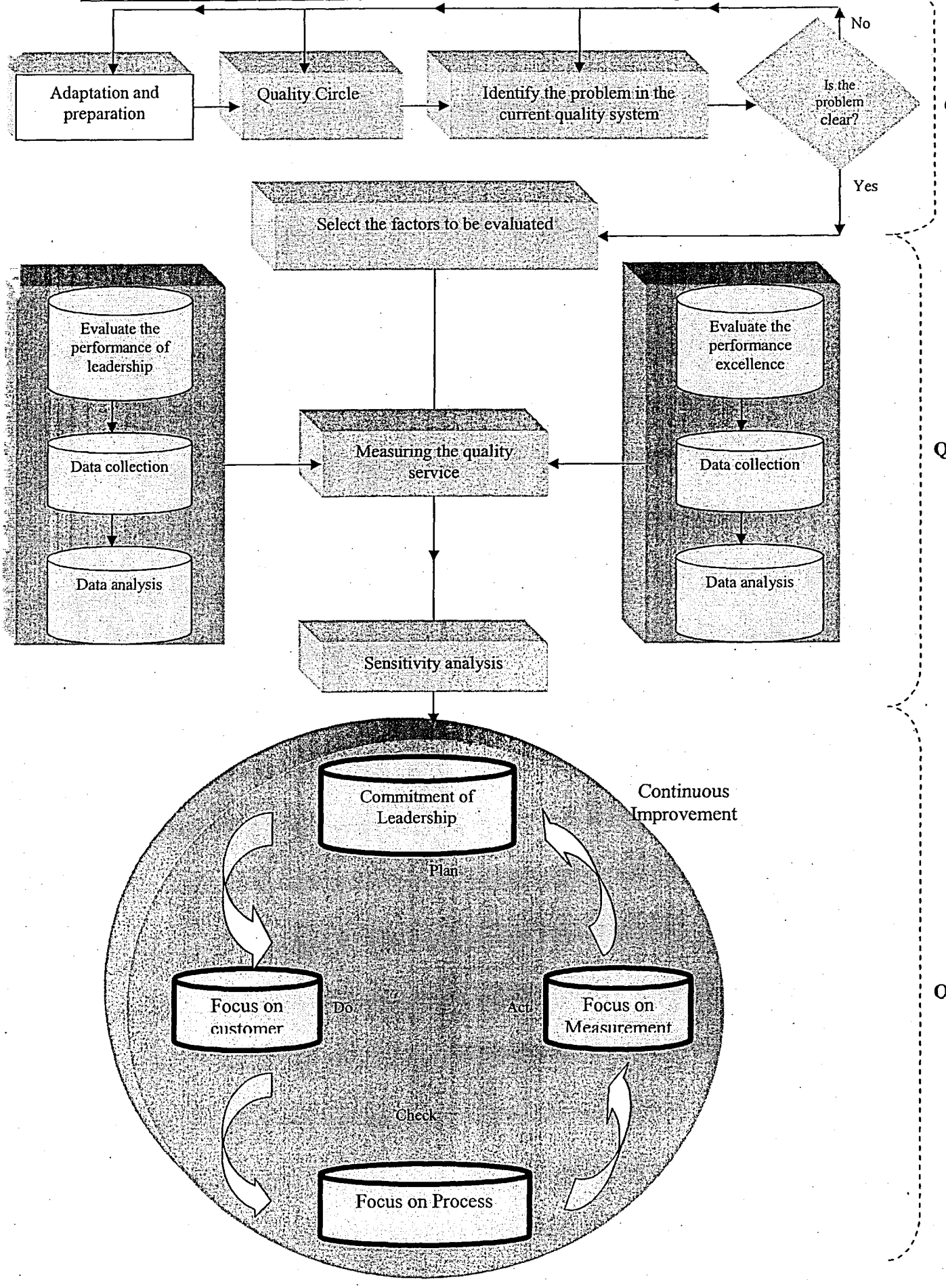


Figure (8.3) The proposed TQM framework for Libyan healthcare sector

- The concept of all departments in the hospital must be unified towards the comprehensive quality and its main components.

- Acting collectively to break down barriers between different departments, which provid health services.

8.4.1.2. Quality Circle:

In the literature, many alternative methods for TQM can be found which could be used at this stage of the proposed TQM framework in Libyan Healthcare, for example, Quality Circles, Teamwork, Contingency planning and Consensus reaching.

According to Kanji and Asher (1996) adopting the right kind of technique require careful consideration and clear understanding. They illustrated that the purpose of Teamwork is to organise activity, which needs a group of people to collaborate and work together for a common aim. It assists to develop a quality strategy or to achieve solutions to a problem that is vital to the company. Whereas the purpose of Contingency planning is to avoid fire fighting and waste of resources by planning for contingencies in the completion of a plan. In addition, the purpose of Consensus reaching is to provide a team with a methodical way of examining alternatives to attain a collective conclusion, which all team members can accept.

On the other hand, Quality Circles are very different from these methods, which are initiated by management to resolve a specific difficulty and are disbanded when that problem has been resolved. Quality Circles are formed and trained; after that they identify their own problems. When those problems have been solved, the circle remains in place and identifies additional problems to solve. Therefore, the researcher used Quality Circles at this stage of the proposed TQM framework (Kanji and Asher, 1996).

A Quality Circle (QC*) consists of a small group of people that meet on a regular basis, to discuss problems, search for solutions, and cooperate with administration in the implementation of those solutions. In addition, QC* employ organised approaches to problem solving and function on the principle that employee participation in decision-making and problem solving improves the quality of work (Venkatraman, 2007). Metri (2006) indicated that QC concept has three main features:

(1) QC* is a form of participation management;

(2) QC* is a workforce development technique; and

(3) QC* is a problem solving technique.

He added that it is a people-building philosophy, providing self-motivation and happiness in improving situation without any force or financial benefits. Therefore, while it has been found that no administration for health takes care of quality in Libyan Healthcare Sector. Thus, the researcher thinks that it is necessary to create a Quality Circles Team Unit, which will be responsible for quality cycle in Libyan Healthcare Sector see Figure (8.4). That means providing a general concept of total quality management with general objectives and quality required to be achieved through applying this system and consequences targeted, method and way of implementation over different sections. Moreover, to determine human, material and financial resources that are necessary to carry out the plan and time required achieving each stage. Therefore, establishment committee (Quality Circles Team) is vital by entrusted top management in order to supervise the implementation of total quality management, and to make decisions to secure activation of all concerned parties and fast implementation, and to follow up different sections to assure that services are provided as required. This unit as shown in Figure (8.4) should be led by a Quality Coordinator to manage the unit's responsibility regarding three main issues:

- Planning team.

- Evaluation and follow up team.
- Documentation and information team.

Next section provides more details regarding this proposed unit.

Healthcare director
Quality Circles Team
Admin-istrative acts offic
The Artistic Cooperation
Medical service office
Health care office
Pharmacy office
Information office
Workforce office
Service of relief office
Public relation office
department of finance
department of workforce
department of preserves
department of public relation
depart-ment of confer-ences
depart-ment of coopr-ation
external clinics
serveses medicine
the housing healthy
laboratories and blood banks
mother and infantts care
vaccination
School Health
Fight of infected Disease
Health Knowledge
Environmet health
Professional health and safety
Control and Inspection
The medicaments
pharmacies deparetment
The medical equipments
The statistics and the information
The healthy consolidation
The programs and the systems
The healthy teaching
Training department
The services of the relief
emergency
Services
The public relation
Quality coordinator
Evaluation and follow up team
Planning team
Documentation and information team

8.4.1.2.1. Quality Circles Team in health sector:

As a result of understanding that total quality management system is responsible for everyone and depends on teamwork system to improve the health services. Therefore, it is required to establish a section, committee or quality circles team within the administration of health sector related to quality management to evaluate study and analyse the work system to make a plan to correct the weak points. In addition, creation of training programmes to enable employees to improve their abilities to understand the new job system would be needed.

Quality Circles Team in health sector should consist of coordinator of quality, department heads and managers of healthcare organisations, headed by the Director of Health Sector; three teams should be formed to identify periodic meetings for these teams. These teams are:

1- Planning team: to develop and implement plans.

2- Evaluation and follow up team: to follow up the implementation of the plan and analyse the proposals and provide the necessary suggestion.

3- Documentation and information team: to collect data and information for submission to the planning team, as well as documenting the processes taking place within the sector.

The Quality Circles Team proposal approves the overall and detailed plans and specifies the functions and responsibilities of each team, select the leader of each team and continue their functions. In addition, the functions of quality coordinator in the sector are as follows:

1. Participating in the meetings and development of detailed plans.
2. Preparation of periodic reports on the effectiveness of the implementation of the quality system and developing proposals for successful implementation.
3. The link between quality teams and health organisations.

4. Tools designed to measure the degree of satisfaction of patients and employees and to ensure efficient work.
5. Proposed training programs needed by workers.

In general the function of Quality Circles Team could be the following:

- Select members of the Quality teams.
- Selection of Quality Coordinator.
- Training each of the members of the quality teams and quality coordinator and prepare training programs for employees to provide them with the necessary skills to develop abilities to implement this system.
- Approval of the Plan implementation and offer the necessary resources for that.
- Setting goals and important processes.
- Clarify the duties and responsibilities of each team.
- Assist the department heads and managers of healthcare organisations to implement the quality improvement system.
- Achieve coordination and integration between sections, quality teams and top management.
- Help top management as to the strategy of quality improvement.

8.4.1.3. Identify the problem in the current quality system:

At this stage, data and information regarding policies, features, difficulties and quality system in the field of healthcare should be collected in order to identify the problems in the current quality system. This means providing a general concept of total quality management and identifying general objectives and quality necessary to apply this system, consequences targeted, and method of implementation over different sections. Moreover, identify human, material and financial resources which are necessary to carry out the plan and time program to achieve each stage. In addition, identify the relationship between total quality management and other administrative positions, policies, administrative and medical procedures.

- In this study; data and information about policies, features, difficulties and quality system in Tripoli healthcare sector was collected.

8.4.1.4. Select the factors to be evaluated:

The selection should be based on the information collected, which includes the difficulties in the quality system and the areas that require immediate attention. In this study; based on the information collected in the previous stage and based on the strategy implementation in Libyan healthcare, which depends on the following: -

- Development of health administration, training of its cadre, improvement of health information system and medical documentation.
- Focus on national workforce.
- Modernisation and maintenance of health facilities and taking care of their equipment and revolution of the whole process.
- Improvement of supply channels.
- Cooperation with international, regional and Arab organisations.
- Development of financial resources.

Moreover, in spite of the limited differences between researchers in the field of total quality management on what are the key factors of the total quality management systems, the most important factors were chosen as follows: *Leadership, Training and Education, Focus on customer, Process and measurement and Continuous Improvement.*

Finally in QP stage there are some errors and difficulties that may appear such as:

- Start a journey of TQM without suitable preparation.
- Failure to understand the word "total" of the overall total quality management.
- System rewards and incentives do not encourage participation in the comprehensive quality.
- Activities Quality Circles Team uncoordinated.

8.4.2. Quality Control (QC):

Quality control includes the following:

8.4.2.1. Measuring the quality service:

At this stage the performance of leadership should be evaluated in order to identify and prioritise the strengths and weakness points of leadership systems and identifies the organisational culture that is appropriate for TQM. In this study; leadership excellence in Tripoli healthcare organisations has been evaluated using leadership excellence model (see chapter six). The model expected to help the decision-maker to identify the strengths and weakness points of leadership system and identify the organisational culture that is appropriate for TQM Libyan healthcare organisations. Questionnaire survey has been used to collect data through top, middle and lower management level and SPSS software used to analyse data collected.

The next step at this stage the performance excellence should be evaluated. The main deliverable is to identify and priorities best practices of TQM factors with respect to

performance excellence and benchmarking the performance between healthcare organisations.

In this study; performance excellence in Tripoli healthcare organisations has been evaluated using performance excellence model (see chapter seven). The model expected to help decision-makers to identify and priorities best practices of TQM factors and benchmarking the performance between Tripoli healthcare organisations. The model could assist the director of Tripoli healthcare sector and senior managers to improve the service quality. In addition, a questionnaire survey has been used to collect data through Healthcare Director and top management level in the organisations under investigation. Likewise, AHP software used to analyse data collected.

8.4.2.2. Sensitivity analysis:

At this stage sensitivity analysis should be used to examine the impact of changing the priority of the criteria on the outcomes. This may help the decision making process to improve the service. At this stage the Quality Circle Team could compare different scenarios and possibilities. This information is of significant importance to the decision-maker who needs to improve the service. In this study; sensitivity analysis has been carried out to examine the sensitivity of TQM factors and nine healthcare organisations using AHP technique. This approach allows the examination of different scenarios and finding out how a change in the importance of one criterion may influence other choices (See chapter seven).

8.4.4. Quality Improvement (QI):

Quality improvement includes the following:

8.4.4.1. Plan-Do-Check-Act stage:

After benchmarking the performance of healthcare organisations and identifying the strengths and weaknesses of the organisations, the adoption of Plan-Do-Check-Act stage could help the Quality Circle Team to develop strategies for continuous improvement.

The proposed TQM framework should be built upon a set of core values and concepts. These values and concepts provide the foundation for integrating the key performance requirements within the quality framework (Venkatraman, 2007). Therefore, the quality circles team should be directly involved with the five core factors of a TQM framework as in Figure (8.3).

The roles of the five core factors of the proposed TQM framework are described below:

This proposed framework adopts Deming's Plan-Do-Check-Act Cycle. The proposed framework includes five key factors associated with each other. Every stages of the proposed framework has several activities.

8.4.4.1.1. The planning stage:

It has been illustrated that leadership is the engine of this framework and requires activity and determination to implement this system. Measuring the performance of leadership, which has been illustrated in chapter six is expected to help the quality circles team to: identify and prioritise the strengths and weakness points of leadership system and identify the excellence of culture organisational. Therefore, the key role of Quality Circles Team is to lay a plan to change the culture of workforce about the importance of total quality

management, which in turn will have a positive impact on the next factors. In addition, culture of all healthcare organisations must be changed to the importance of improving quality system and satisfying the customer.

Another action at this stage, the Quality Circles Team should identify: who is the customer, the customer's requirements and expectations and the current service in order to develop a plan for continuous improvement. Naturally, this will never take place in a moment but it will only happen in one case when the decision-makers listen to the Quality Circles Team and when the workforce feels its participation in the procedures. The preliminary steps for implementation procedures is characterised by slowness and it will take time to make the necessary energy available for such change, and for removal of the barriers that exist between the management and workforce through granting more confidence. Indeed that cooperation between management and workforce immediately appear when the implementation of TQM starts. Moreover, Quality Circles Team will be able to use the results which have been illustrated in QC stage to evaluate their organisations in order to address which organisation is the most or least preferred, along with the areas that require immediate attention and then lay a plan to improve these areas and develop strategies for the performance excellence.

8.4.4.1.2. The do stage:

Supporting workforce (internal customers) with training and education in order to have a better understanding of their work performance will lead to successful change. Implementation of total quality management in any sector is the responsibility for all members of the workforce, which means that they (internal customers) are the foundation stone when improving quality through their contributions and support the decisions making to improve quality. Oakland, (1995) indicated that each part of an organisation has

customers, whether internal or external, and are required to identify what the customer needs are, and then set about meeting them, form the core of total quality approach. Focus on customers (internal and external) should be the centre of all activities of the organisation and acting to collectively break down barriers between different departments that provided health services, because each department within the hospital is considered as a customer to another department. Moreover, training and education are very important for this framework, because the workforce contribution is essential to improve work plans and service levels. Oakland, (1995) indicated that every person in the organisation, from top to bottom, from administrative centre to technical service, from control centre to local sites, should play their part. Therefore, it is essential to train all employees on how to use the tools needed and procedures of TQM, how to solve problems, and how to work in teams.

At this stage quality teams in healthcare organisations should be established. Each team should consist of: Quality Coordinator and the health department heads in the health care organisation. The supervision should be done by the manager of healthcare organisation and should set this team monthly meetings in order to ascertain how to implement the plans and document processes in the organisation of health and submission to the Director of Healthcare Organisation. This should then be submitted to the meeting of Quality Circles Team in health sector.

Similarly in the do stage there are some errors and difficulties which may appear such as:

- Failure to choose good quality teams in healthcare organisations
- Failure to choose suitable training programmes.

8.4.4.1.3. The check stage:

Processes are necessary because quality should be considered in every stage, it should not be confirmed only to the final finishing of service. Because the customer could not evaluate the quality results, he may still be able to realise quality process relating to the way service should be given upon certain consideration.

This stage should be to identify the barriers that improve the quality service face, or that make quality improvement difficult. During the check stage, organisations should draw their attention to the following points:

1. The haste of management to achieve quick results:

The implementation of total quality management requires time. However, the importance given by most of the Libyan organisations to obtain the certificate of ISO 9000, without the total implementation of total quality management, indicates that the haste of the organisations in achieving tangible result. Some of these organisations have succeeded in obtaining the ISO certificate in few months, and those organisations started to use that as advertisement material for the customer, to give the impression that its products or services are of high quality. While, Gotzamani et al (2006) indicated that the certificate can be regarded as a good first step to total quality management. It does, not however, guarantee the continuous improvement and there is the fear that the focus could be on the process and losing view of the purpose, which is the satisfaction of customers needs. He added that implementation of the standards could not be regarded as a signal of top management's commitment to quality.

Talha (2004) indicated that ISO 9000 is an attempt to focus the world's manufacturers on an agreement about the stage of quality and standards in products. It is divided into many elements which make up the guidelines for quality.

2. Decide the implementation before preparation of the appropriate environment: -

To require people to change their habits and attitudes is a difficult task, and the human being by their very nature, is resistant to change and always tends to adhere to the familiar and avoid change. The adoption of TQM requires change in the concepts and directions, which they have been accustomed to by these organisations. Therefore, Quality Circles Team should focus on how to change the individual culture and conduct to understand the concept of total quality management, which is obligatory for all employees in this field.

3. The incorrect evaluation of the importance of human resource: -

Some people think that the importance of technology is more important than human resources, but in fact human resources plays the greater role, so the implementation of total quality management is required to keep a balance between human resources and technology.

4. Do the correct work the first time:

This means that it should be made to specifically ensure that services provided are done so correctly, and then adopted and implemented by all employees in quality system. In case of failure, the dissuasion by quality team is possible to find reasons for failure. In addition, providing services correctly from the start will lead to a reduction in cost and increase confidence in the health service.

It is important at this stage, to set standards for:

- Meeting customer requirements and expectations.
- Culture organisation and performance excellence.
- Tools and programmes of medical service.
- Supervision, revision and performance evaluation system.
- Training programs.
- Tangible and moral incentive.

8.4.4.1.4. The action stage:

The first action is to measure and examine the progress procedure against the above standard in order to find the extent to which the improvement is meeting the customers requirements and performance excellence. In addition, the Quality Circle Team should study how to monitor and adapt the new behaviour to maintain the change-sensitive environment. Oakland, (1995) indicated that there would come a time to change those administrators and also workers who cannot function in new organisation, after they have had a good chance to implement the changes. This is not easy task, but it will happen when individuals start to recognise what kind of manager and workers the new organisation need, and this often develops slowly and from the experience of seeing individuals succeed and fail, they should then start to understand the need to replace or move individuals to other parts of the organisation.

8.4.4.1.5. Continuous improvement:

Continuous improvement of the process is considered to be a basic function of this framework; it means the acceptance of additional small gains as a step towards total quality management. This proposed framework recommends that the workforce must use their skills, with support from leadership, in realising small gains in order to improve the service. This matter will require training and education for the workforce and employ teamwork (quality circles) so that they are able to realise the improvement taking place in quality system. Continuous improvement of services will be the logical outcome of the implementation of the previous five factors and thus reach the final goal that is performance excellence. Moreover, implementation of this proposed framework requires a department or committee (Quality Circle Team) that should be at the top of the organisational hierarchy see Figure (8.4) and supported by involving everyone. **8.5.**

Summary:

It has been noticed that measuring the quality of service does not mean the implementation of total quality management, but makes the system able to be implemented it in order to support the strengths and remove weaknesses points. In addition, there is lack of a generic model in health care; also there is no clear agreement as to the way in which TQM should be implemented in a health care context. The success stories that reached global organisations in the implementation of total quality management do not mean at all that it is a model to be copied. In general, each organisation has internal and external conditions. Therefore, the proposed TQM framework could assist the decision-makers in Libyan healthcare sector in implementing TQM, which could support the development of managers and employees at different levels in the organisation and achieving performance excellence in Libyan healthcare organisations. In the next chapter an additional questionnaire will be used to verify and validate the proposed TQM framework and its implementation procedure. Through this process the framework can be modified if necessary and will increase the researcher's confidence level in the developed framework and its implementation procedure.

Chapter nine:

Verification / validation the proposed TQM framework

9.1. Introduction:

The main aim of this chapter is to study and discuss the data collected during the survey and to verify/validate the proposed TQM framework and its implementation procedure. This will allow modifying of the framework if necessary, and increase the researcher confidence level in the developed framework and its implementation procedure. All answers provided by the respondents through the questionnaire are classified and statistical analyses were performed using a statistical package for social sciences (SPSS). Moreover, tests for validity and reliability were carried out.

9.2. Design of the proposed questionnaire:

- The first section of the questionnaire was designed to collect personal information from the respondents.
- The second section of the questionnaire was designed to assess the organisations situation with regard to TQM and to discover which factors could barrier the implementation of TQM in the healthcare sector.
- The third section of the questionnaire was designed to identify to what extent the proposed framework factors are important for improving the quality performance of healthcare service in the organisations under investigation.
- The fourth section of the questionnaire was designed to discover to what extent the proposed framework stages will guide and successfully facilitate the implementation of total quality management in the organisations under investigation.

9.3. Selection of sample:

9.3.1. Pilot stage:

Tripoli Healthcare Sector and ten Healthcare organisations were selected to present the survey results. The pilot study included ten managers from the organisations under investigation, selected randomly to obtain perfect feedback and to ensure that the questionnaire is free from any unnecessary confusion. The draft questionnaire consists of four sections, the first section is designed to collect personal information from the respondents. In the second section, it was decided to use five-point Likert scales ranging from strongly agree to strongly disagree, to assess the organisations situation with regard to TQM and to discover which factors may would barrier the implementation of TQM in the healthcare under investigation. However, after the pilot study and according to the respondents' wishes, the Likert scale was decreased and modified into three-points to make the questionnaire easier to complete. On the other hand, the respondents accepted the other sections of the questionnaire without any modification. After this procedure, the researcher divided the respondents into two levels; top management and middle management.

9.3.2. Development of the final questionnaire:

Enclosed in the questionnaire packages was a covering letter that briefly explained the aim of the study. A self-explanatory survey questionnaire was carried out to collect data from two levels in the organisations under investigation. The top management consisted of 39 decision-makers in the Director of Health Sector, two decision-makers from each department in Tripoli Health Sector and two managers from each healthcare organisation under investigation. The middle management consists of 29 unit heads, which involve all

the units of Tripoli Health Sector. Therefore, a total of 68 questionnaire sheets were sent to top and middle management. A total of 39 questionnaire sheets were sent and received from top management with a percentage of 100 % and 29 questionnaire sheets were sent to the middle management and the number of questionnaire sheets answered amounted to 20 with a percentage of 68.96 %.

9.4.Details of the proposed questionnaire:

Appendix (3) is the first section of the questionnaire designed to collect personal information from the respondents.

9.4.1. The gender:

Each person completing a questionnaire was asked about his/her gender. Table (9.1a), Table (9.1b) and Figure (9.1) below classifies the investigated employees under this category:

Table (9.1a) Descriptive statistics for gender groups.

N	Valid	59
	Missing	0
Mean		1.8814
Mode		2.00
Std. Deviation		.32614
Minimum		1.00
Maximum		2.00

Table (9.1b) The gender groups of respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	7	11.9	11.9	11.9
	Male	52	88.1	88.1	100.0
	Total	59	100.0	100.0	

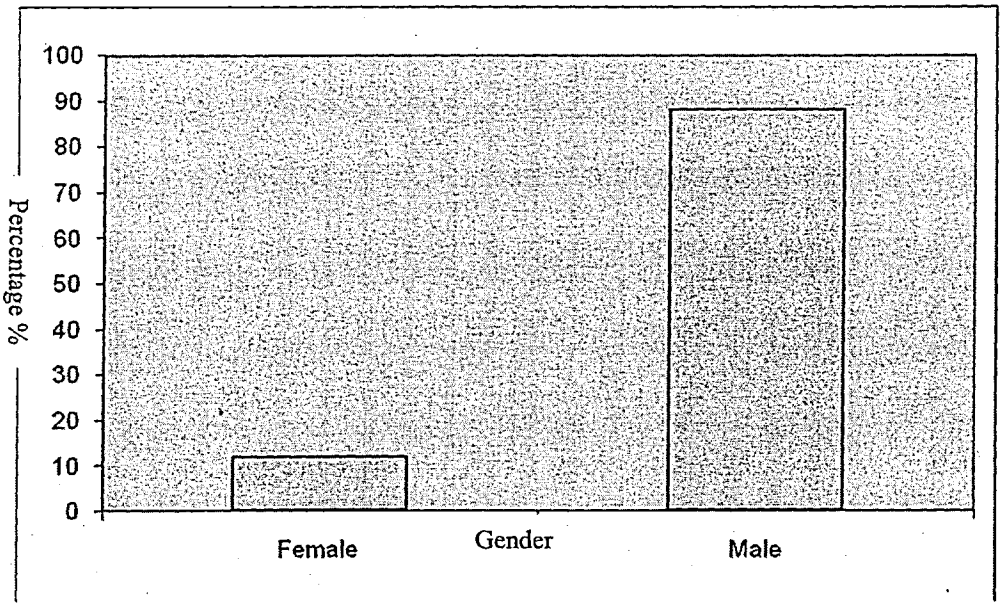


Figure (9.1) The respondents gender groups.

Table (9.1a) shows that there were 59 valid respondents and no missing values and then reports the various summary statistics that are requested. The mean (average gender) is 1.8814. The mode (the one that occurs most frequently) is 2.00, standard deviation is 0.32614. It can be seen from Figure (9.1) and Table (9.1b) that 7 respondents are female with 11.9 % and 52 respondents are male with 88.1 %.

This shows a lack of interest from leaders to give women the opportunity to occupy leadership positions in the organisations under investigation. We can say that the characteristics of the study sample included males and females; therefore, we can depend on the answers of the sample because it involves the differences that can arise from the difference in gender.

9.4.2. The age groups:

Each person completing the questionnaire was asked about his/her age. Table (9.2a), (9.2b) and Figure (9.2) below classifies the investigated employees under this category:

Table (9.2a) Descriptive statistics for age groups.

N	Valid	59
	Missing	0
Mean		2.4068
Mode		3.00
Std. Deviation		.72203
Minimum		1.00
Maximum		3.00

Table (9.2b) The age groups of respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	18-25	8	13.6	13.6	13.6
	26-40	19	32.2	32.2	45.8
	41-65	32	54.2	54.2	100.0
	Total	59	100.0	100.0	

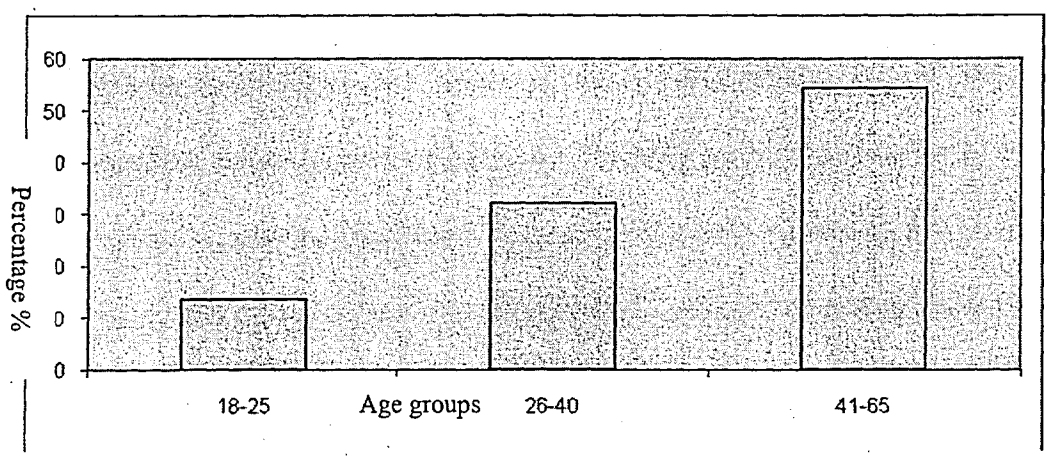


Figure (9.2) The respondents age groups.

Table (9.2a) shows that there were 59 valid respondents and no missing values and then reports the various summary statistics that requested. The mean (average age) is 2.4068. The mode is 3.00 and standard deviation is 0.72203. In addition, Table (9.2b) and Figure

(9.2) show that 8 respondents (13.6 %) are aged between 18 - 25 years, 19 respondents (32.2 %) are aged between 26 - 40 years and 32 respondents (54.2 %) are between 41 and 65. It can be said that the age groups considered in this study were appropriate and can be relied on their opinion to gather the required information to help in achieving the goal of the study..

9.4.3. Qualifications:

Each person completing a questionnaire was asked about his/her qualifications to classify different kind's backgrounds and experiences. Table (9.3a), (9.3b) and Figure (9.3) classified the investigated employees under this category:

Table (9.3a) Descriptive statistics for qualifications.

N	Valid	59
	Missing	0
Mean		1.5424
Mode		1.00
Std. Deviation		.70275
Minimum		1.00
Maximum		3.00

Table (9.3b) The qualifications of respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Postgraduate	34	57.6	57.6	57.6
	Graduate	18	30.5	30.5	88.1
	Others	7	11.9	11.9	100.0
	Total	59	100.0	100.0	

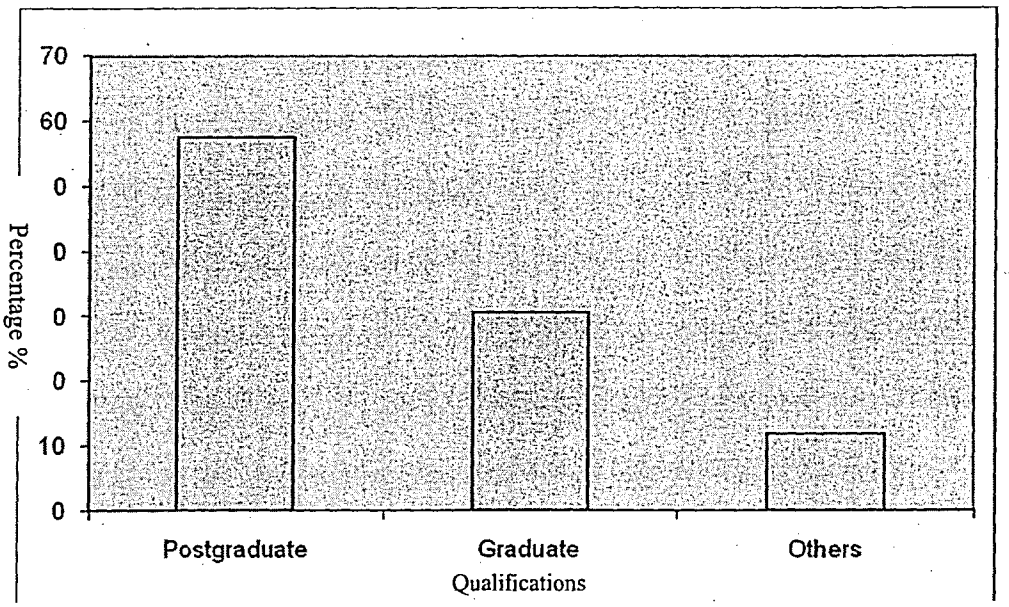


Figure (9.3) The respondents qualifications.

Table (9.3a) shows that there were 59 valid respondents and no missing values and then reports the various summary statistics that requested. The mean is 1.5424. The mode is 1.00 and standard deviation is 0.70275. Moreover, Table (9.3b) and Figure (9.3) show that 34 respondents (57.6%) are postgraduate, 18 respondents (30.5%) are graduates and 7 respondents (11.9%) had other qualifications such as some experience in same jobs or another diplomas, but not a University degree.

From the qualifications of the personnel available, it can depend on the views of the sample to reach the results that serve the goal of the study.

9.4.4. Management Level:

Table (9.4a) shows that there were 59 valid respondents and no missing values and then reports the various summary statistics that requested. The mean is 1.3390. The mode is 1.00 and standard deviation is 0.47743.

Table (9.4b) and Figure (9.4) shows that 39 respondents (66.1%) are employed in top management. In middle management there were 20 respondents who sum up to (33.9%).

Table (9.4a) Descriptive statistics for management level

N	Valid	59
	Missing	0
Mean		1.3390
Mode		1.00
Std. Deviation		.47743
Minimum		1.00
Maximum		2.00

Table (9.4b) The management level of respondents.

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Top Management	39	66.1	66.1	66.1
	Middle Management	20	33.9	33.9	100.0
	Total	59	100.0	100.0	

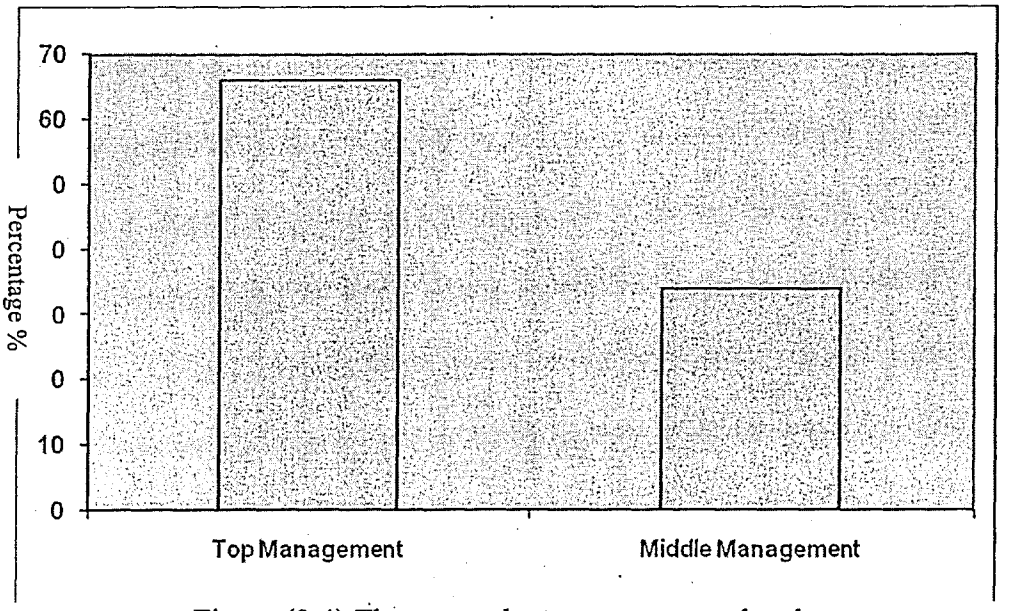


Figure (9.4) The respondents management level.

It can be said that in general the administrative levels of the research sample was adequate and should have the required knowledge to provide valid and useful information and data needed for the research.

9.5. Results, analysis and discussion:

9.5.1. Reliability Analysis

9.5.1.1. Reliability Analysis for the second section of the questionnaire:

In order to test the reliability and consistency of the questionnaire and to ensure the reliability of respondents to answer questions in the questionnaire, Cronbach's alpha was used to achieve this purpose. Field (2005) indicated that reliability analysis can be applied to measure the consistency of a questionnaire, Cronbach's alpha shows the overall reliability of a questionnaire and values around 0.8 or 0.7 are good. Likewise, Pallant (2003) and Rad (2005) indicated that an alpha value of 0.70 or higher was considered as acceptable reliability. Table (9.5) shows simple statistics regarding the people involved in the questionnaires including the Mean, Standard Deviation and the sample size.

Table (9.5) Item Statistic

	Mean	Std. Deviation	N
Q1	1.8475	.92501	59
Q2	1.4407	.74905	59
Q3	1.9661	.88991	59
Q4	1.9153	.89612	59
Q5	2.0678	.92596	59
Q6	1.5254	.75100	59
Q7	1.8136	.88033	59
Q8	1.7797	.87233	59
Q9	2.1695	.93131	59
Q10	1.3729	.69228	59
Q11	1.8305	.91260	59

Q12	1.3898	.69523	59
Q13	2.1695	.87400	59

Scale Mean if Item Deleted in The Table (9.6) below shows that the effects on the overall mean of the scale if an individual question is deleted. For example, if question number one was deleted from the final version of the second section of the questionnaire, the overall mean of the scale would fall from 23.2881 to 21.4407 as shown in Table 9.6 and 9.7. Likewise, effects can be seen by examining the "Scale Variance if Item Deleted" column. The values in Corrected Item-Total Correlation are the correlation between each item and the total score from the questionnaire. Field (2005) and Pallant (2007) indicated that if any of these values are less than around 0.3 then you have got difficulties because it means that a particular item does not associate very well with the scale overall. For these data, all data have item-total correlations above 0.3, which is encouraging. "Alpha if Item Deleted" is the value of the overall alpha if that item is not included in the calculation, they reflect the change in Cronbach's alpha that would be seen if a particular item were deleted (Field, 2005). The overall alpha is 0.839 and therefore all values in this column should be around that same value. The overall alpha is 0.839, and none of all items would increase the reliability if they were deleted because all values of alpha are not greater than the overall alpha, see Table (9.6). This indicated that all items are positively contributing to the overall reliability.

Table (9.6) 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
Q1	21.4407	34.940	.530	.756	.824

Q2	21.8475	36.373	.515	.905	.826
Q3	21.3220	36.084	.441	.330	.831
Q4	21.3729	34.272	.621	.651	.817
Q5	21.2203	35.589	.465	.518	.829
Q6	21.7627	36.977	.443	.883	.830
Q7	21.4746	36.461	.409	.475	.833
Q8	21.5085	35.013	.563	.627	.822
Q9	21.1186	35.141	.505	.912	.826
Q10	21.9153	36.838	.508	.910	.827
Q11	21.4576	36.252	.410	.712	.833
Q12	21.8983	36.714	.521	.908	.826
Q13	21.1186	36.210	.439	.896	.831

In addition, Table (9.7) below shows that results for the whole of the second section of the questionnaire, when the total scores of the questionnaire are examined, participants scored a mean of 23.2881; with a Variance of 41.588, and Standard Deviation of 6.44887. The small Std. Deviation indicates that there are no large variations in the scores of participants for the overall total score on the questionnaire.

Table (9.7) Scale Statistics

Mean	Variance	Std. Deviation	N of Items
23.2881	41.588	6.44887	13

Finally, Table (9.8) below shows that reliability coefficients (Alpha .839) and (Standardized Items alpha = .842) for all 13 question. Therefore, Table (9.6) and Table (9.8) provide evidence that the alpha score above 0.7, which indicate that measurement is reliable.

Table (9.8) Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items

.839	.842	13

The reliability alpha has been tested on the second section of the questionnaire that is designed to assess the organisations situation with regard to TQM in Tripoli Healthcare Sector, which consists of thirteen questions distributed to members of the sample. It has been found that the value of alpha was (0.839). This shows that the obtained results are reliable and the opinions collected during the questionnaire are considers acceptable statistically. Therefore, it could depend on these data without any deletion of the items to reach significant results in this study.

9.5.1.2. Reliability Analysis for the third section of questionnaire:

Table (9.9) shows simple statistics regarding the people involved in the questionnaires including the Mean, Standard Deviation and the sample size.

Table (9.9) Item Statistics

	Mean	Std. Deviation	N
Vision	2.0678	.76258	59
Mission	2.2034	.76066	59
Strategy	2.1695	.72284	59
Communication	2.2373	.81662	59
Empowerment	1.5424	.75022	59
Trust	2.4068	.85336	59
Team.D	2.3220	.75294	59
Leadership	2.1017	.78113	59
TE	2.2712	.76182	59
FC	2.2034	.84649	59
PM	2.4576	.70275	59
CI	2.2034	.73765	59

Scale mean if item deleted in the Table (9.10) below shows that the effects on the overall mean of the scale if an individual question is deleted. For example Table (9.10) shows

that if question number one were deleted from the final version of the third section of the questionnaire, the overall mean of the scale would fall from 26.1864 to 24.1186 as shown in Table 9.10 and 9.11. Likewise, effects can be seen from examining the Scale variance if item deleted column. The values in Corrected Item-Total Correlation are the correlation between each item and the total score from the questionnaire. For these data, all data have item-total correlations above 0.3, which is also encouraging. In addition, the overall alpha is 0.924 and thus all values in the column Cronbach's Alpha if Item Deleted should be around that same value. The overall alpha is 0.924; the worst offender is question (*Empowerment*): deleting this question would increase alpha from 0.924 to 0.928. Pallant (2007) indicated that if your alpha value was low (less than 0.7) you have to remove the item which higher than the final alpha value. However, this increase is not dramatic and both values reflect a reasonable degree of reliability. This indicated that all items are positively contributing to the overall reliability.

Table (9.10) 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
Vision	24.1186	40.934	.550	.640	.923
Mission	23.9831	40.465	.603	.475	.921
Strategy	24.0169	40.120	.681	.730	.918
Communication	23.9492	38.118	.803	.730	.913
Empowerment	24.6441	42.026	.441	.300	.928
Trust	23.7797	38.106	.764	.719	.915
Team.D	23.8644	39.499	.720	.622	.917
Leadership	24.0847	39.389	.702	.856	.917
TE	23.9153	39.734	.683	.606	.918
FC	23.9831	38.086	.773	.688	.914
PM	23.7288	40.511	.657	.567	.919
CI	23.9831	38.948	.802	.902	.913

In addition, Table (9.11) below shows that results for the whole of the third section of the questionnaire, when the total scores of the questionnaire were examined, participants scored a mean of 26.1864; with a Variance of 46.878, and Standard Deviation of 6.84678. The small Std. Deviation thus indicates that there are not large variations in the scores of participants for the overall total score on the questionnaire.

Table (9.11) Scale Statistics

Mean	Variance	Std. Deviation	N of Items
26.1864	46.878	6.84678	12

Finally, Table (9.12) below shows that reliability coefficients (Alpha .924) and (Standardized Items alpha = .924) for all 12 question. Therefore, Table (9.10) and Table (9.12) provide evidence that the alpha score above 0.7, which indicate that measurement is reliable.

Table (9.12) Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.924	.924	12

The reliability alpha has been tested on the third section of the questionnaire designed to identify to what extent the proposed framework factors are important for improving the quality performance of healthcare service in the organisations under investigation, consisting of twelve questions distributed to members of the sample. It has been found that the value of alpha was (.924). This shows that the obtained results are reliable and the opinions collected during the questionnaire are considers acceptable statistically.

Therefore it could depend on these data without any deletion of the items to reach significant results in this study.

9.5.1.3. Reliability Analysis for the fourth section of questionnaire:

Table (9.13) shows simple statistics regarding the people involved in the questionnaires including the Mean, Standard Deviation and the sample size.

Table (9.13) Item Statistics

	Mean	Std. Deviation	N
AP	2.2542	.68464	59
QCT	2.1695	.91260	59
IPCQS	2.2881	.83151	59
CF	1.7966	.94284	59
MQ	2.3390	.77926	59
SA	2.2034	.76066	59
PCDA	2.1695	.74631	59

Scale mean if item deleted in the Table (9.14) below shows that the effects on the overall mean of the scale if an individual question is deleted. For example Table (9.14) shows that if question number one were deleted from the final version of the fourth section of the questionnaire, the overall mean of the scale would fall from 15.2203 to 12.9661. Likewise, effects can be seen from examining the Scale variance if item deleted column. The values in Corrected Item-Total Correlation are the correlation between each item and the total score from the questionnaire. For these data, all data have item-total correlations above 0.3, which is also encouraging. In addition, the overall alpha is 0.884 and thus all values in the column Cronbach's Alpha if Item Deleted should be around that same value. The overall alpha is 0.884; the worst offender is question (*QCT*): deleting this question would increase alpha from 0.884 to 0.898 see Table (9.14). Nevertheless, this increase is

not dramatic and both values reflect a reasonable degree of reliability. This indicates that all items are positively contributing to the overall reliability.

Table (9.14) 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
AP	12.9661	14.206	.852	.906	.849
QCT	13.0508	15.049	.450	.427	.898
IPCQS	12.9322	13.582	.783	.934	.852
CF	13.4237	13.869	.614	.509	.877
MQ	12.8814	13.796	.806	.939	.851
SA	13.0169	15.258	.544	.446	.882
PCDA	13.0508	14.222	.763	.870	.857

In addition, Table (9.15) below shows that results for the whole of the fourth section of the questionnaire, when the total scores are examined, participants scored a mean of 15.2203; with a Variance of 19.071, and Standard Deviation of 4.36707. The small Std. Deviation thus indicates that there are not large variations in the scores of participants for the overall total score on the questionnaire.

Table (9.15) Scale Statistics

Mean	Variance	Std. Deviation	N of Items
15.2203	19.071	4.36707	7

Finally, Table (9.16) below shows that reliability coefficients (Alpha .884) and (Standardized Items alpha = .892) for all 7 questions. Therefore, Table (9.14) and Table (9.16) provide evidence that the alpha score above 0.7, which indicate that measurement is reliable.

Table (9.16) Reliability Statistics

Cronbach's Alpha	Cronbach's Alpha Based on Standardized Items	N of Items
.884	.892	7

The reliability alpha has been tested on the fourth section of the questionnaire that designed to discover to what extent the proposed framework stages will guide and facilitate successfully the implementation of total quality management in the organisations under investigation, which consist of seven questions distributed to members of the sample. It has been found that the value of alpha was (0.884). This shows that the obtained results are reliable and the opinions collected during the questionnaire are considered acceptable statistically.

9.5.2. Section 2: Descriptive statistics of the organisations situation.

The second section of the questionnaire (appendix 3) was designed to assess the organisations situation with regard to TQM. The goal of this section was to provide the decision-makers with more information about the existence of some problems and barriers that may work to reduce the performance of Tripoli healthcare sector.

The first column of Table (9.17) lists the different questions with regard to the organisations situation. The second column provides 59 respondents. The third and fourth columns show minimum and maximum answers between (1-3). The fifth column indicates that the mean is between 1.3729 and 2.1695. The final column illustrates that Standard Deviation is between .69228 and .92596.

Table (9.17) Descriptive Statistics the organisations situation with regard to TQM.

	N	Minimum	Maximum	Mean	Std. Deviation
Q1	59	1.00	3.00	1.8475	.92501
Q2	59	1.00	3.00	1.4407	.74905
Q3	59	1.00	3.00	1.9661	.88991
Q4	59	1.00	3.00	1.9153	.89612
Q5	59	1.00	3.00	2.0678	.92596
Q6	59	1.00	3.00	1.5254	.75100
Q7	59	1.00	3.00	1.8136	.88033
Q8	59	1.00	3.00	1.7797	.87233
Q9	59	1.00	3.00	2.1695	.93131
Q10	59	1.00	3.00	1.3729	.69228
Q11	59	1.00	3.00	1.8305	.91260
Q12	59	1.00	3.00	1.3898	.69523
Q13	59	1.00	3.00	2.1695	.87400
Valid N (listwise)	59				

Each person that filled in a questionnaire was asked about his/her levels of satisfaction through the organisation situation with regard to TQM and indicates his/her agreement/disagreement with the each question.

The first question was (The healthcare organisation works to provide preferential medical services). Table (9.18) and Figure (9.5) show that 30 respondents (50.8%) agreed, 8 respondents were neutral with (13.6%) and 21 respondents (35.6%) disagreed with this question.

Table (9.18) Q1

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	30	50.8	50.8	50.8
	Neutral	8	13.6	13.6	64.4
	Disagree	21	35.6	35.6	100.0
	Total	59	100.0	100.0	

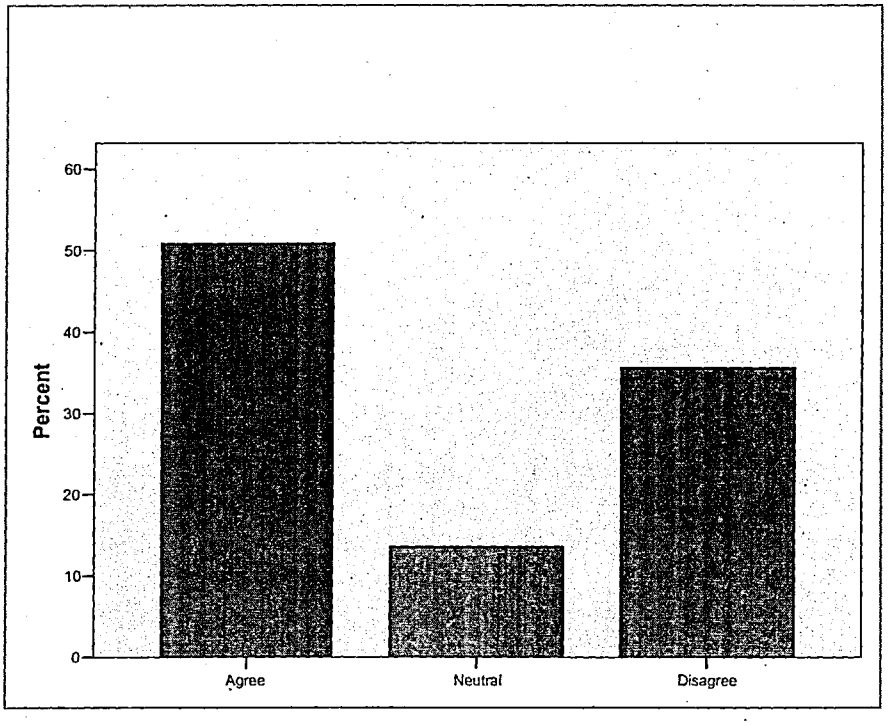


Figure (9.5) The respondents agreement/disagreement of Q1

These results indicate a difference in views on the quality of medical services provided by the healthcare organisations; the researcher thinks that the medical services are not provided in a distinct form. However, the confusion relating to these services can not be clear for half of the sample, which confirms the existence of some ambiguities in the evaluation of health services provided and can be explained by the comparison of these services (see chapter seven).

The second question was (There are some barriers that could be limited the performance of health services). Table (9.19) and Figure (9.6) show that 42 respondents (71.2%) agreed with this question, 8 respondents were neutral with (13.6%) and 9 respondents (15.3%) disagreed.

Table (9.19) Q2

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	42	71.2	71.2	71.2
	Neutral	8	13.6	13.6	84.7
	Disagree	9	15.3	15.3	100.0
	Total	59	100.0	100.0	

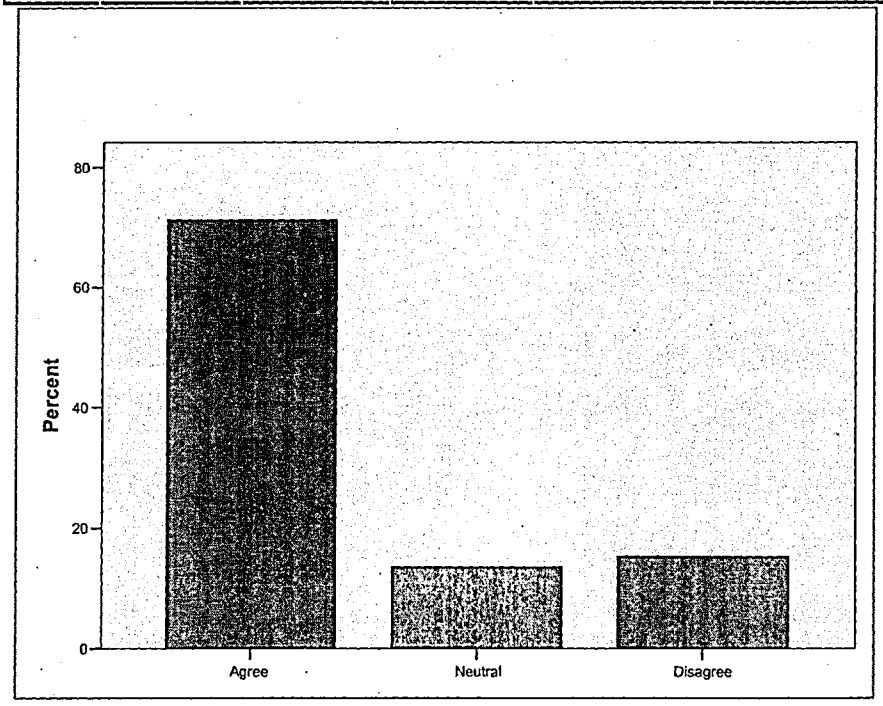


Figure (9.6) The respondents agreement/disagreement of Q2

These results show agreement on the existence of problems and barriers that may work to reduce the performance and provide excellent medical services. The researcher asked the sample to list any factors that could be limit the performance of health services or that would barrier the implementation of TQM in the healthcare sector. These obstacles include:

- Lack of tangible incentive for workers.
- Lack of distinct administrative efficiencies for planning and management.
- Lack of modern machines and equipment for diagnosis.
- Lack of interest in the views and suggestions of workers.

- Lack of medical assistance as required.
- Lack of attention to the development and training of workers at home and abroad.
- Existence of some laws and regulations that limit the performance of workers.
- Lack of communicating the vision to employees.
- Top management not offering a good quality environment for creativity.
- No long-term vision.
- Corruption between the employees.

The third question was (Department heads and managers of healthcare organisations are considered effective).

Table (9.20) Q3

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	24	40.7	40.7	40.7
	Neutral	13	22.0	22.0	62.7
	Disagree	22	37.3	37.3	100.0
	Total	59	100.0	100.0	

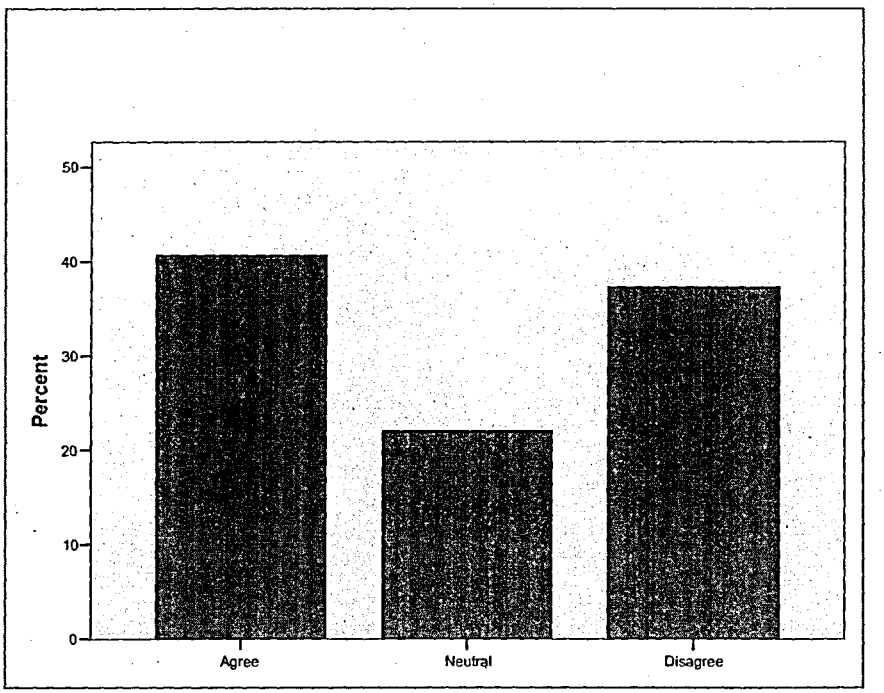


Figure (9.7) The respondents agreement/disagreement of Q3

Table (9.20) and Figure (9.7) show that 24 respondents (40.7%) agreed with this question, 13 respondents were neutral with (22%) while 22 respondents (37.3%) disagreed.

These results show that (40.7%) of the respondents were convinced that the heads and managers of healthcare organisations are considered effective. However, (37.3%) see that the heads and managers are not effective and the rest of the sample neutrally answered this question which may be due to fear and lack the bravery to say the truth.

The fourth question was (There are a lot of absence cases for workers in healthcare during the months of the year). Table (9.21) and Figure (9.8) show that 26 respondents (44.1%) agreed, 12 respondents were neutral with (20.3%) while 21 respondents (35.6%) disagreed.

Table (9.21) Q4

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	26	44.1	44.1	44.1
	Neutral	12	20.3	20.3	64.4
	Disagree	21	35.6	35.6	100.0
	Total	59	100.0	100.0	

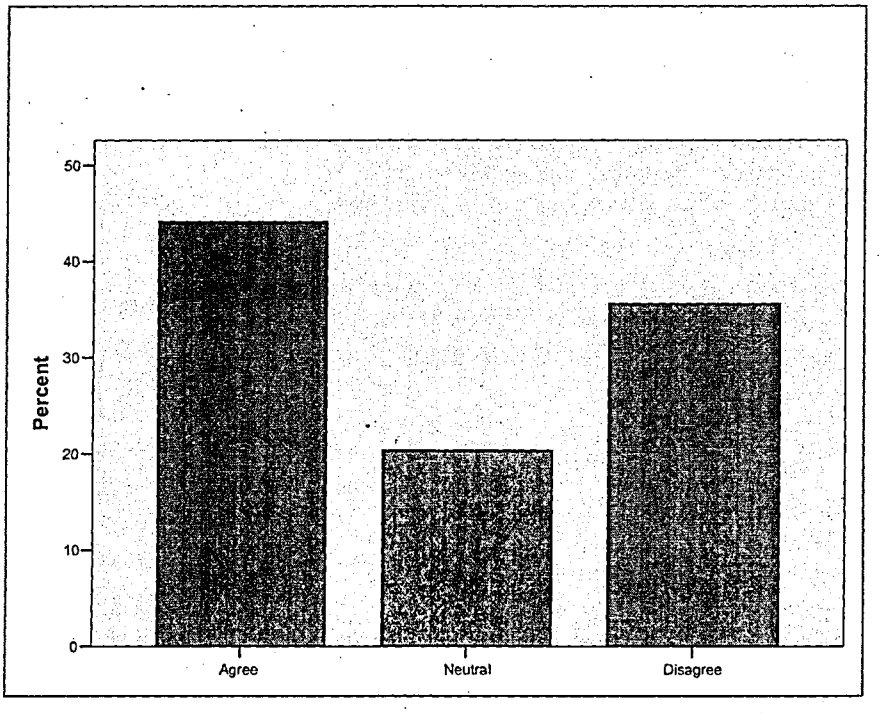


Figure (9.8) The respondents agreement/disagreement of Q4

These results show clear differences on the absence phenomenon and its negative impact on the health sector, the researcher thinks that these results do not reflect the fact that most of the answers were substantive reasons for fear of some of the workers and lack the bravery to say the truth.

The fifth question was (healthcare administration always provides an opportunity for training at home and abroad). Table (9.22) and Figure (9.9) shows that 23 respondents (39%) agreed, 9 respondents were neutral with (15.3%) whereas 27 respondents (45.8%) disagreed.

Table (9.22) Q5

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	23	39.0	39.0	39.0
	Neutral	9	15.3	15.3	54.2
	Disagree	27	45.8	45.8	100.0
	Total	59	100.0	100.0	

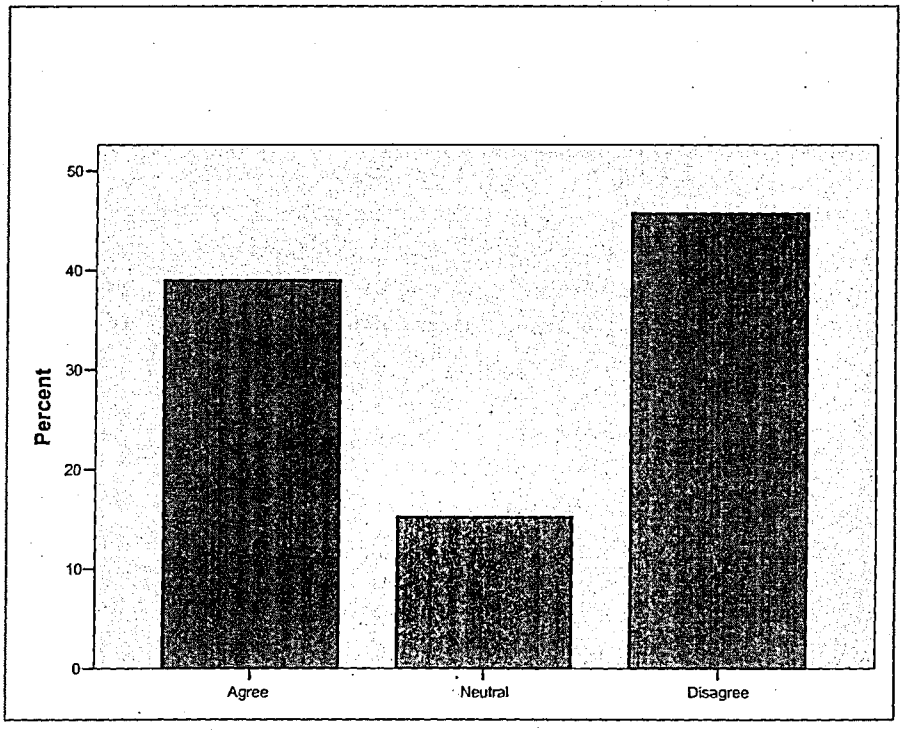


Figure (9.9) The respondents agreement/disagreement of Q5

The results indicated that the agreement by (45.8%) of the respondents about the administration not to provide training opportunities for workers at home and abroad, which means not keeping pace with scientific developments in the area of health. The researcher believes that continuous training is the foundation for improving the quality of

performance of medical services in healthcare, as well as building administrative cadres able to planning and organising of such these services.

The sixth question was (Workers feel bored and the dissatisfaction with their work). Table (9.23) and Figure (9.10) show that 37 respondents (62.7%) agreed, 13 respondents were neutral with (22%) whereas 9 respondents (15.3%) disagreed.

Table (9.23) Q6

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	37	62.7	62.7	62.7
	Neutral	13	22.0	22.0	84.7
	Disagree	9	15.3	15.3	100.0
	Total	59	100.0	100.0	

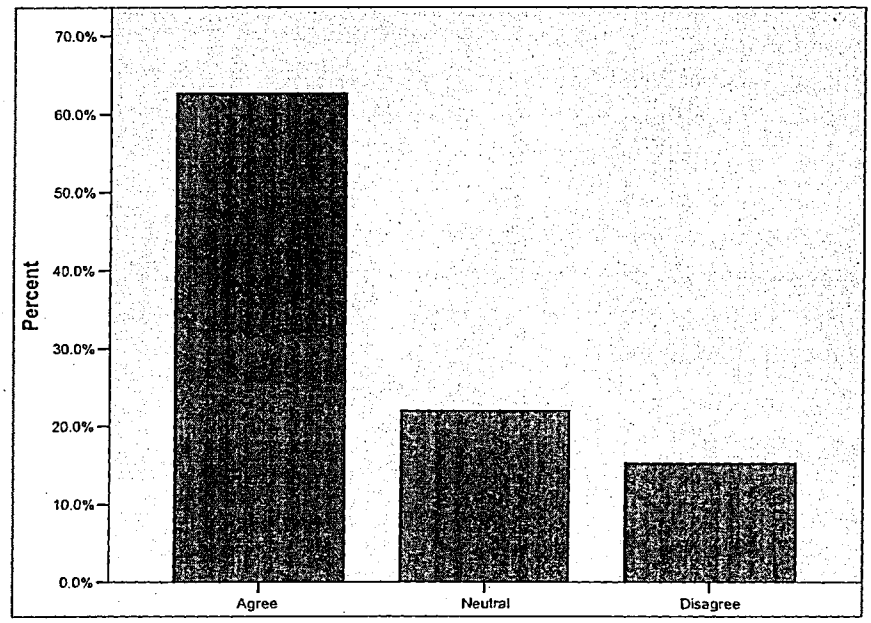


Figure (9.10) The respondents agreement/disagreement of Q6

These results show agreement of the sample of workers feeling bored and dissatisfied as a result of several factors. Senior management do not attempt to identify the needs and requirements of their workers.

The seventh question was (There is a great desire to change the currently plans in healthcare sector). Table (9.24) and Figure (9.11) show that 29 respondents (49.2%) agreed with this question, 12 respondents were neutral with (20.3%) while 18 respondents (30.5%) disagreed.

Table (9.24) Q7

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	29	49.2	49.2	49.2
	Neutral	12	20.3	20.3	69.5
	Disagree	18	30.5	30.5	100.0
	Total	59	100.0	100.0	

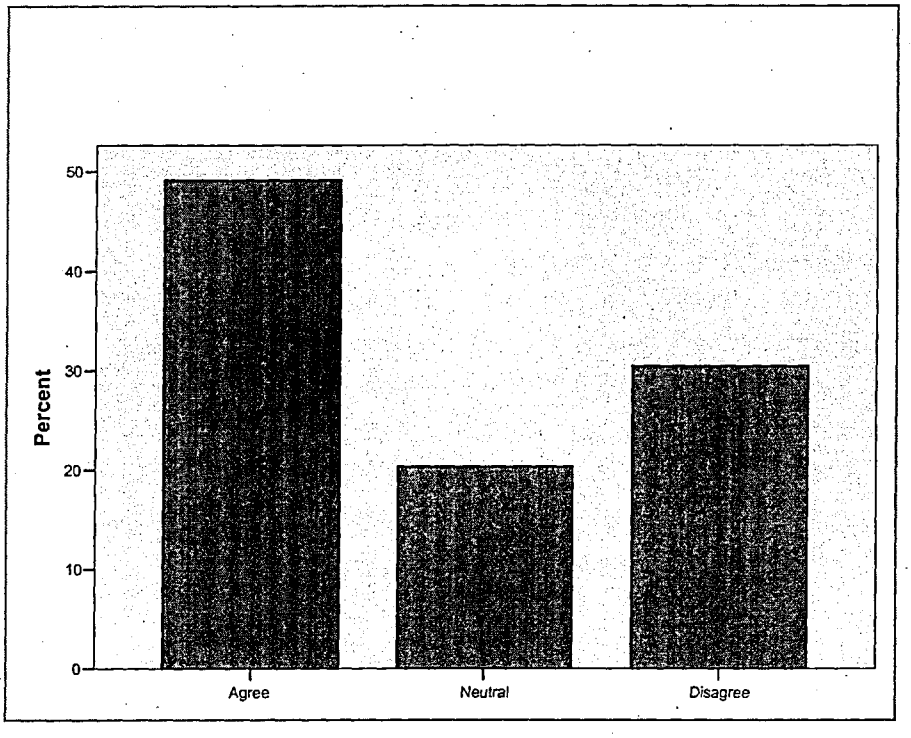


Figure (9.11) The respondents agreement/disagreement of Q7

These results show the differences of sample research on the preparation of workers to change the current plans; it has been found that the percentage (49.2%) considers the change as necessary while (30.5%) do not see any reasons to change the plans.

The eighth question was (There is a desire to change the current management system of the healthcare organisations). Table (9.25) and Figure (9.12) show that 30 respondents (50.8%) agreed with this question, 12 respondents were neutral with (20.3%) while 17 respondents (28.8%) disagreed.

Table (9.25) Q8

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	30	50.8	50.8	50.8
	Neutral	12	20.3	20.3	71.2
	Disagree	17	28.8	28.8	100.0
	Total	59	100.0	100.0	

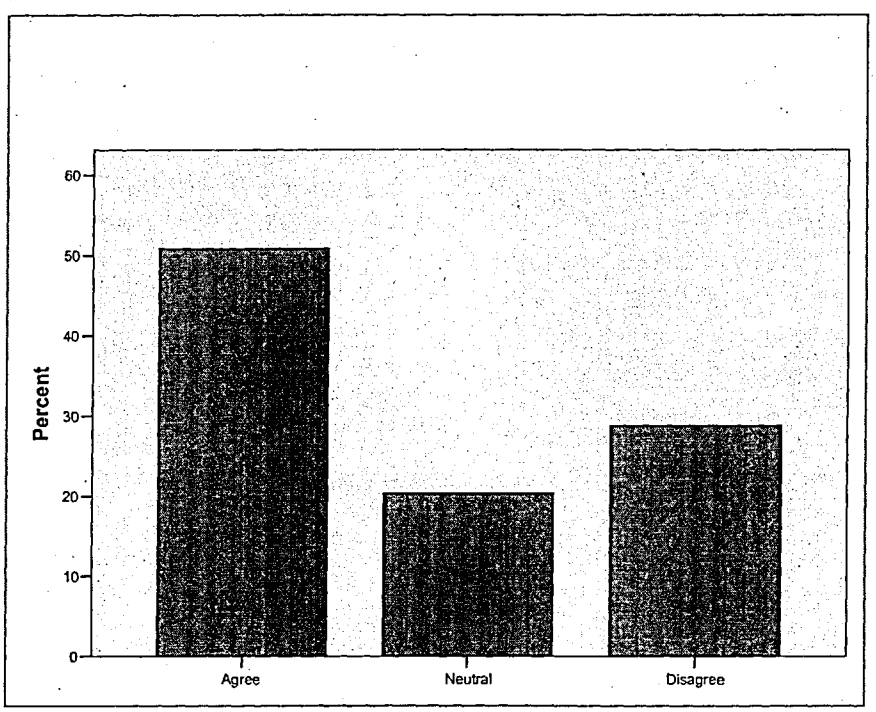


Figure (9.12) The respondents agreement/disagreement of Q8

These results indicated that about half of the sample would welcome change to the current management system. It has been found that the percentage (50.8%) see the need to make change, they recognise that by changing the management structure and re-selecting workers that are efficient would improve the quality of health services provided. While 28.8% do not see any reason for changing the management due

to the nature conflict to change and fear of losing some positions or advantages available under the current organisation which need to change or that change may have negative effects that not working to improve the medical services.

The ninth question was (Healthcare organisation operates efficiently at the present time). Table (9.26) and Figure (9.13) show that 21 respondents (35.6%) agreed with this question, 7 respondents were neutral with (11.9%) while 31 respondents (52.5%) disagreed.

Table (9.26) Q9

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	21	35.6	35.6	35.6
	Neutral	7	11.9	11.9	47.5
	Disagree	31	52.5	52.5	100.0
	Total	59	100.0	100.0	

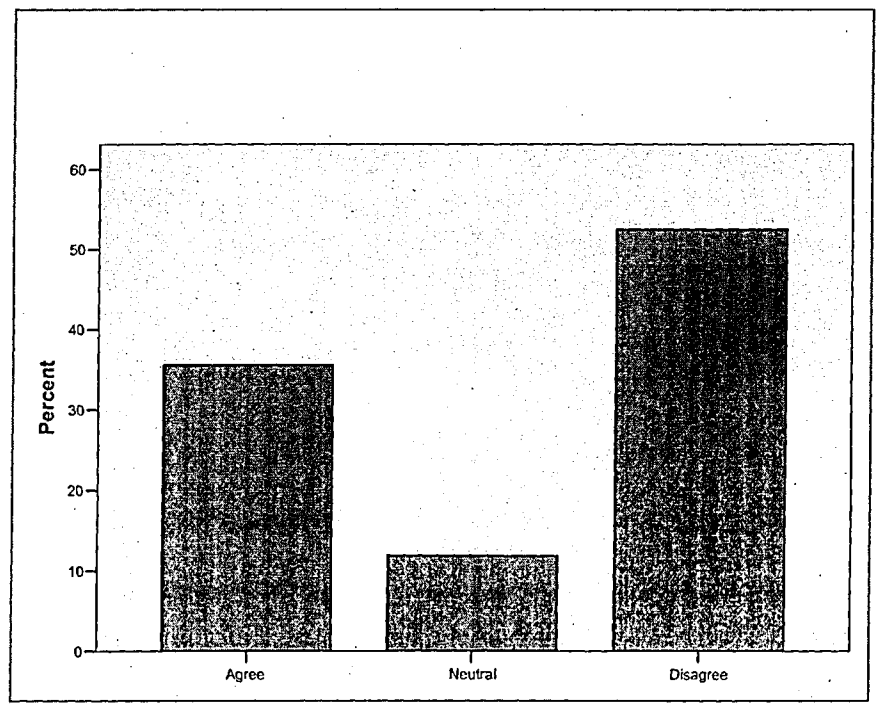


Figure (9.13) The respondents agreement/disagreement of Q9

These results show agreement of (52.5%) of the sample on the inefficiency of healthcare organisations under investigation, because they have experience and knowledge of the conditions of these organisations and the current problems and difficulties face to become more efficient. It has been found that the amount (35.6%) believes that the work of these organisations is very efficient, while the remaining very few (11.9%) were neutral maybe because they did not know what was meant efficiently work of these organisations or their lack of ability to answer as neutral for personal reasons.

The tenth question was (Do you think employ consultants 'coordinator of quality' will help to ensure successful implementation of the proposed framework?). Table (9.27) and Figure (9.14) show that 44 respondents (74.6%) agreed with this question, 8 respondents were neutral with (13.6%) while 7 respondents (11.9%) disagreed.

Table (9.27) Q10

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	44	74.6	74.6	74.6
	Neutral	8	13.6	13.6	88.1
	Disagree	7	11.9	11.9	100.0
	Total	59	100.0	100.0	

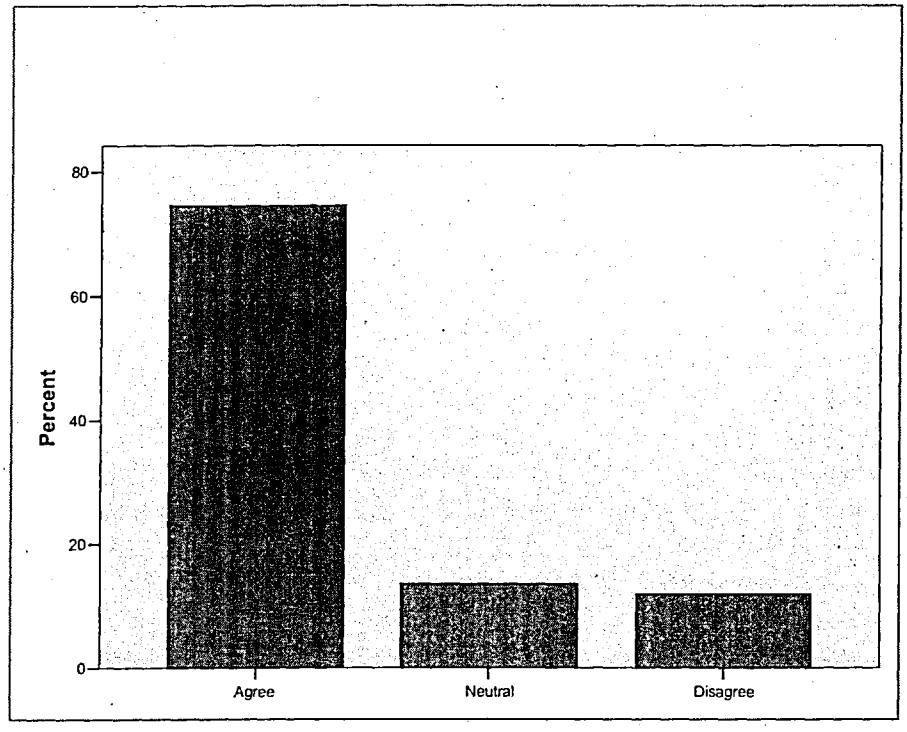


Figure (9.14) The respondents agreement/disagreement of Q10

These results shows that 74.6% of the sample size of the opinion that employing a consultant responsible about the "Coordination of Quality" will help in ensuring the successful implementation of the proposed framework

The eleventh question was (The current management system of the healthcare organisations has not implemented TQM system yet and therefore, there is a desire to implement it in order to improve the performance of health services). Table (9.28) and Figure (9.15) show that 30 respondents (50.8%) agreed with this question, 9 respondents were neutral with (15.3%) while 20 respondents (33.9%) disagreed.

Table (9.28) Q11

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	30	50.8	50.8	50.8
	Neutral	9	15.3	15.3	66.1
	Disagree	20	33.9	33.9	100.0
	Total	59	100.0	100.0	

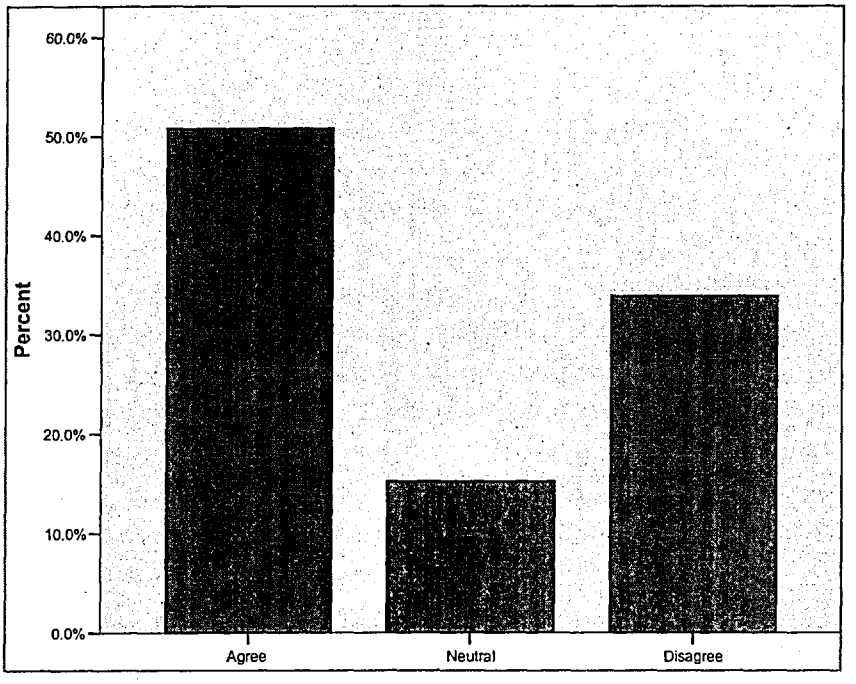


Figure (9.15) The respondents agreement/disagreement of Q11

These results indicate a difference in views on the implementation of TQM system. These results show agreement by (50.8%) of the sample on the organisations plan to implement TQM system. The researcher thinks that the confusion about this question was not cleare for half of the sample which reflects the practical reality that leadership seems to be absolutely centralised, and still needs to understand the importance of the participation.

The twelfth question was (Do you think the proposed framework will provide your organisation chance to improve quality service).

Table (9.29) and Figure (9.16) show that 43 respondents (72.9%) think the proposed framework will provide the organisations chance to improve quality service, 9 respondents with (15.3%) were neutral, while 7 respondents (11.9%) disagreed.

Table (9.29) Q12

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Agree	43	72.9	72.9	72.9
	Neutral	9	15.3	15.3	88.1
	Disagree	7	11.9	11.9	100.0
	Total	59	100.0	100.0	

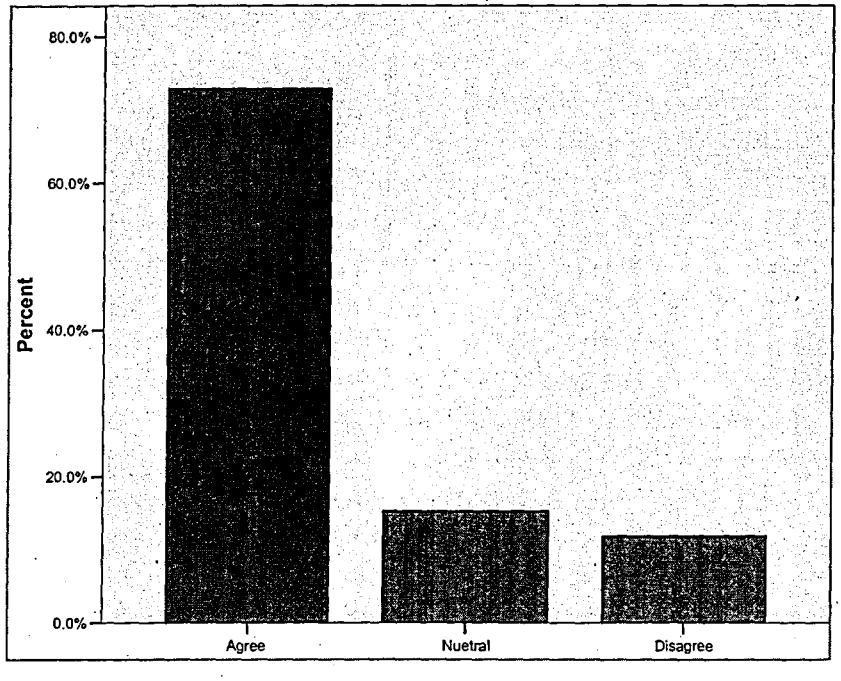


Figure (9.16) The respondents agreement/disagreement of Q12

The fourteenth question was (How long do you think the implementation of the proposed framework expected to take?).

Table (9.30) and Figure (9.17) show that 18 respondents (30.5%) think the proposed framework will take between 1-2 years to implement it, 13 respondents with (22%) think

the proposed framework will take between 2-3 years to implement it, while 28 respondents (47.5%) have no comment about this question.

Table (9.30) Q13

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1-2 years	18	30.5	30.5	30.5
	2-3 years	13	22.0	22.0	52.5
	No comment	28	47.5	47.5	100.0
	Total	59	100.0	100.0	

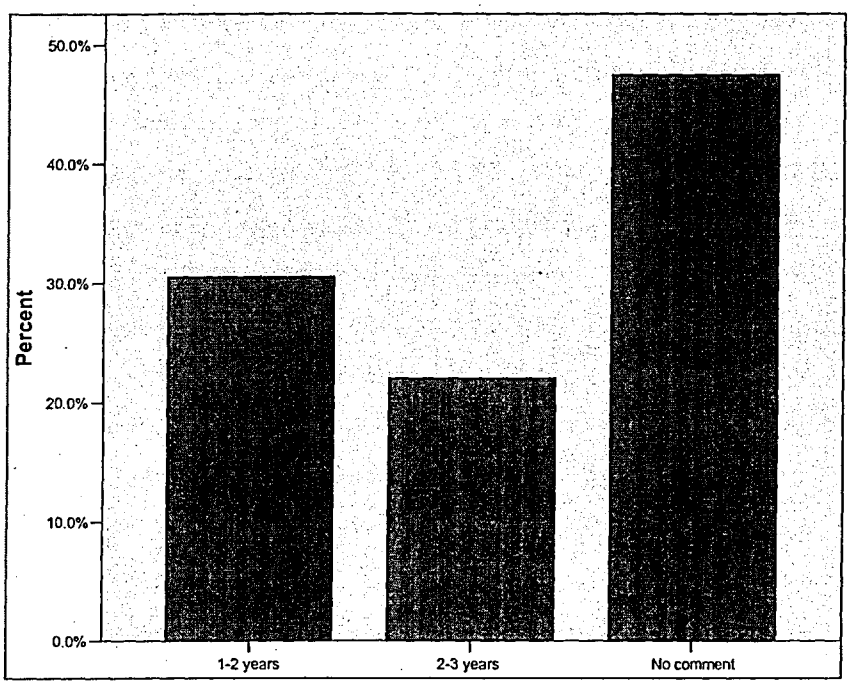


Figure (9.17) The respondents agreement/disagreement of Q13

9.5.3. Section 3: Descriptive Statistics of proposed framework factors.

The third section of the questionnaire was designed to identify to what extent the proposed framework factors are important in improving the quality performance of healthcare service in the organisations under investigation. Twelve TQM factors have been selected from vast amounts of literature reviewed. These factors were used for developing a self-explanatory survey questionnaire (on a five-point Likert scale ranging

from very important to not important at all) to collect data from two levels, which were top management and middle management.

The first column of Table (9.31) lists the different categories of the variables of proposed framework factors. The second column provides 59 respondents. The third and fourth column shows minimum and maximum answers between (1-4). The fifth column indicates that the mean is between 1.5424 and 2.4576. The final column illustrates that Standard Deviation is between 0.70275 and 0.85336.

Table (9.31) Descriptive Statistics of proposed framework factors.

	N	Minimum	Maximum	Mean	Std. Deviation
Vision	59	1.00	4.00	2.0678	.76258
Mission	59	1.00	4.00	2.2034	.76066
Strategy	59	1.00	4.00	2.1695	.72284
Communication	59	1.00	4.00	2.2373	.81662
Empowerment	59	1.00	4.00	1.5424	.75022
Trust	59	1.00	4.00	2.4068	.85336
Team.D	59	1.00	4.00	2.3220	.75294
Leadership	59	1.00	4.00	2.1017	.78113
TE	59	1.00	4.00	2.2712	.76182
FC	59	1.00	4.00	2.2034	.84649
PM	59	1.00	4.00	2.4576	.70275
CI	59	1.00	4.00	2.2034	.73765
Valid N (listwise)	59				

Each person that filled in a questionnaire was asked to what extent the importance of the proposed framework factors were for improving the quality performance of healthcare service.

The first question was to test to what extent the organisations must have clear vision to make the change and empower staff to see the direction they are going and encourage them to help the department get there. Table (9.32) and Figure (9.18) show that 14

respondents (23.7%) rated the factor as very important, 28 respondents rated the factor as important with (47.5%), and 16 respondents (27.1%) were uncertain about this question. On the other hand, only one person has seen the vision as not important with (1.7%).

Table (9.32) Vision

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	14	23.7	23.7	23.7
	Important	28	47.5	47.5	71.2
	Uncertain	16	27.1	27.1	98.3
	Not important	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

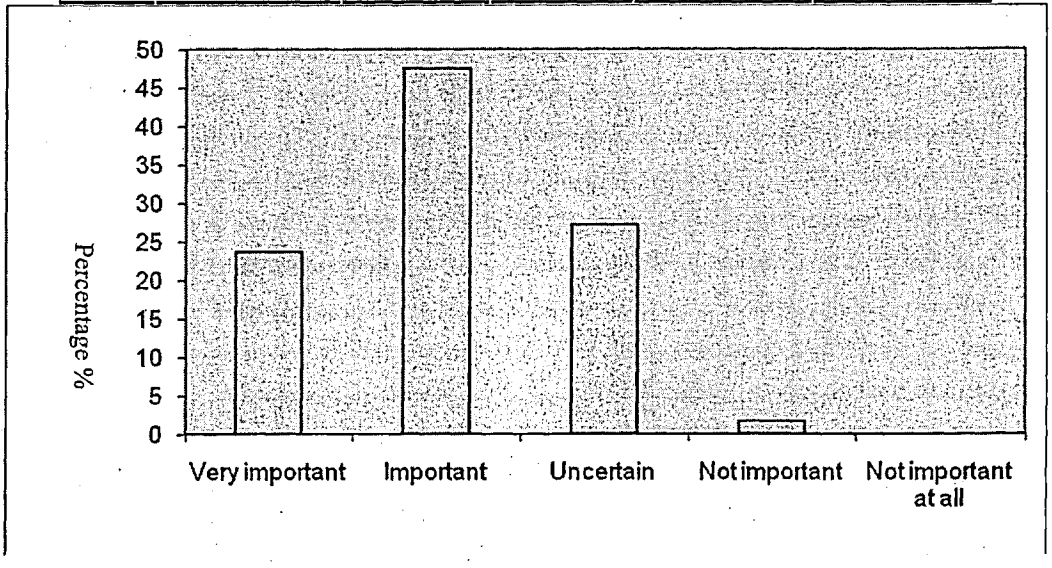


Figure (9.18) Respondents opinion about how important the "clear vision" as a factor for improving the quality

The respondents recognised that the vision is the ability to see an end of mind or aims in complete form. Therefore, the results clearly show that the organisations must have a clear vision.

The second question was to test to what extent the organisation have a clear mission to identify the goals, and the appropriate strategy for their services.

Table (9.33) and Figure (9.19) show that 10 respondents (16.9%) rated this factor as very important, 29 respondents rated the factor as important with (49.2%), and 18 respondents (30.5%) were uncertain with this question. On the other hand, only 2 people rated this factor as not important. While no one has seen the mission not important at all.

Table (9.33) Mission

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	10	16.9	16.9	16.9
	Important	29	49.2	49.2	66.1
	Uncertain	18	30.5	30.5	96.6
	Not important	2	3.4	3.4	100.0
	Total	59	100.0	100.0	

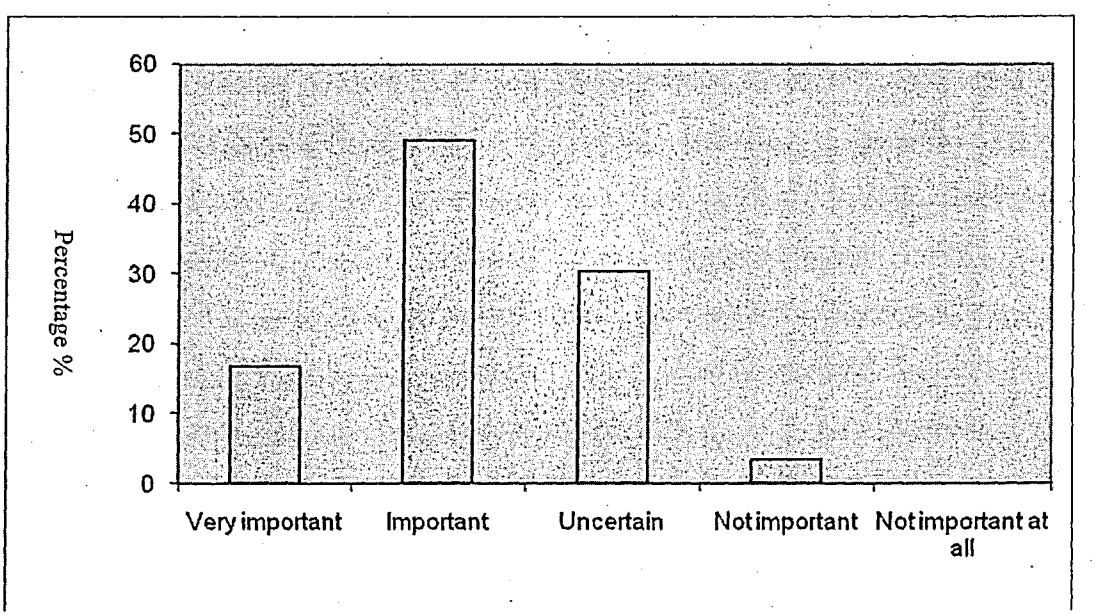


Figure (9.19) Respondents opinion about mission as an important factor

This factor is the highest effective factor in Libyan healthcare organisations, see chapter six. The respondents recognise that the leaders always identify the organisations purpose and all the employees have a clear idea about the mission of the healthcare organisations.

The third question was to test to what extent the organisation must have clear strategies for customer satisfaction and how the organisation could be changed in the future. Table (9.34) and Figure (9.20) show that 10 respondents (16.9%) rated this factor as very important, 30 respondents rated the factor as important with (50.8%), and 18 respondents (30.5%) were uncertain with this question. On the other hand, only one person rated this factor as not important. While no one has seen the strategy as not important at all.

Table (9.34) Strategy

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	10	16.9	16.9	16.9
	Important	30	50.8	50.8	67.8
	Uncertain	18	30.5	30.5	98.3
	Not important	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

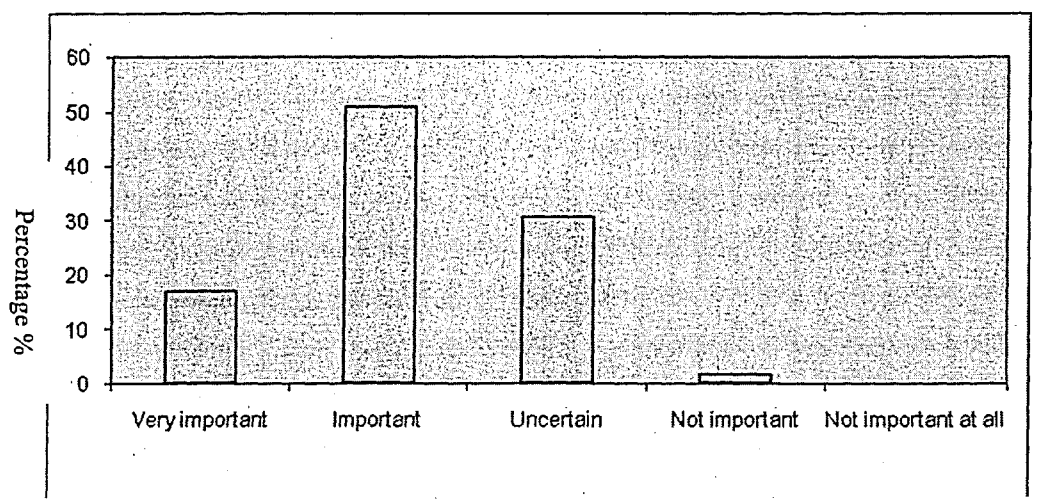


Figure (9.20) Respondents opinion about strategy as an important factor

This is logical because the respondents recognised the importance of this factor on applying total quality management, see chapter six.

The fourth question was to test to what extent the organisation must have a proper communication system at all levels, to address the employee's requirements as priorities

which could be a good method for motivation. Table (9.35) and Figure (9.21) show that 11 respondents (18.6%) rated this factor as very important, 26 respondents rated the factor as important with (44.1%), and 19 respondents (32.2%) were uncertain with this question. On the other hand, only 3 people rated this factor as not important while no one has seen the communication as not important at all.

Table (9.35) Communication

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	11	18.6	18.6	18.6
	Important	26	44.1	44.1	62.7
	Uncertain	19	32.2	32.2	94.9
	Not important	3	5.1	5.1	100.0
	Total	59	100.0	100.0	

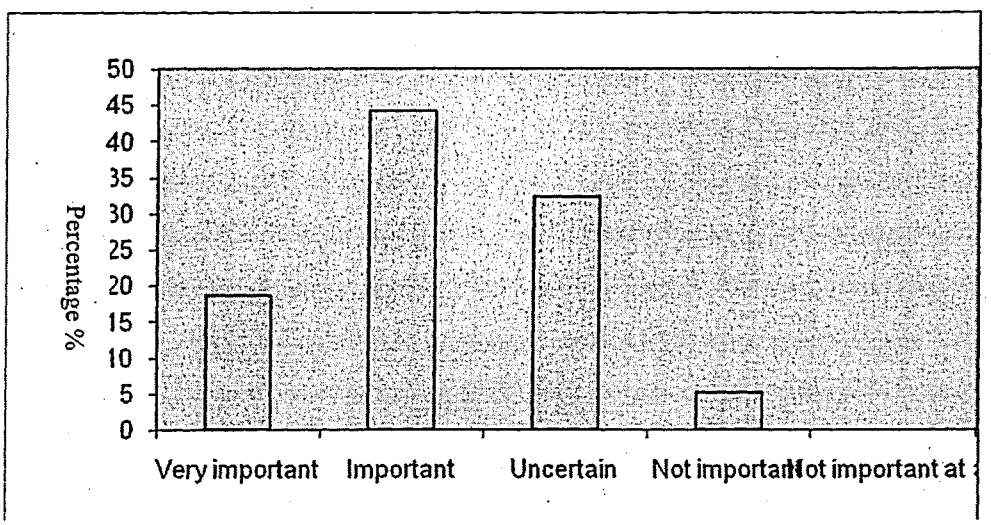


Figure (9.21) Respondents opinion about communication as an important factor

These results show that a proper communication system at all levels in healthcare sector is necessary to grantee seemliness of information across the organisation.

The fifth question was to test to what extent the organisation must recognise that the goal of empowerment is to create many leaders at all levels within the organisation. Table

(9.36) and Figure (9.22) show that 35 respondents (59.3%) rated this factor as very important, 17 respondents rated the factor as important with (28.8%), and 6 respondents (10.2%) being uncertain. On the other hand, only one person rated this factor as not important with (1.7%) while no one has seen the empowerment as not important at all.

Table (9.36) Empowerment

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	35	59.3	59.3	59.3
	Important	17	28.8	28.8	88.1
	Uncertain	6	10.2	10.2	98.3
	Not important	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

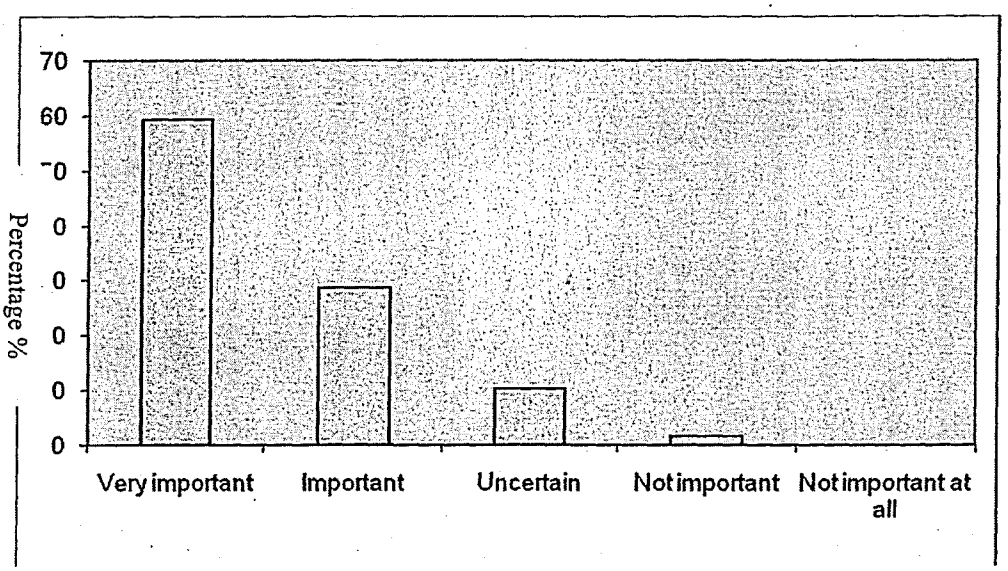


Figure (9.22) Respondents opinion about empowerment as an important factor

These results show agreement on the importance of empowerment to create many leaders at all levels in Tripoli healthcare sector. This made the respondents recognise the importance of the participation and taking the responsibility of making changes to create a quality culture.

The sixth question was to test to what extent the organisation must recognise that the total transformation to quality requires trust, effort and cooperation among all management levels. Table (9.37) and Figure (9.23) show that 8 respondents (13.6%) rated this factor as very important, 25 respondents rated the factor as important with (42.4%), and 20 respondents (33.9%) being uncertain. On the other hand, only 6 people rated this factor as not important with (10.2%) whereas no one has seen the trust as not important at all.

Table (9.37) Trust

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	8	13.6	13.6	13.6
	Important	25	42.4	42.4	55.9
	Uncertain	20	33.9	33.9	89.8
	Not important	6	10.2	10.2	100.0
	Total	59	100.0	100.0	

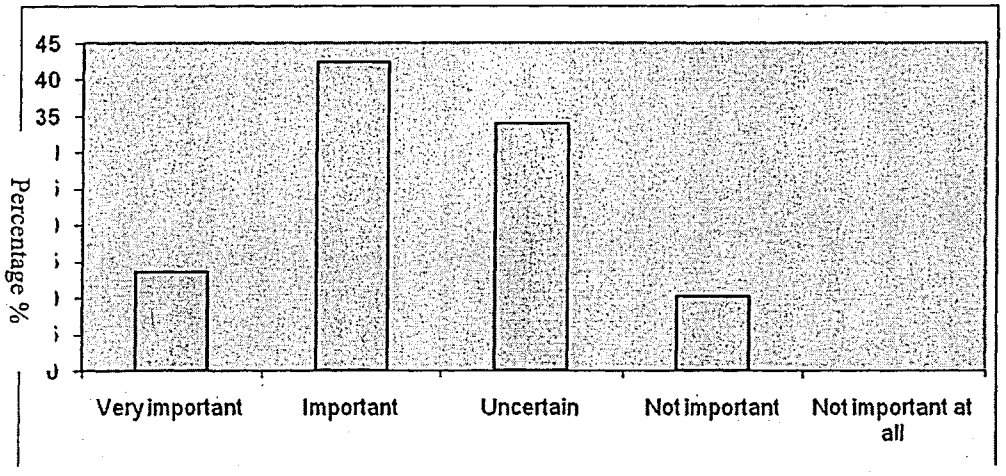


Figure (9.23) Respondents opinion about trust as an important factor

These results show agreement by more half of a sample on the important of this factor. However, (33.9%) of respondents seem to be more sensitive about this factor. The researcher thinks that the answers may reflect a narrower view on this factor.

The seventh question was to test to what extent the organisation must recognise that team development is very important in order to share responsibility, and allow others to solve the problem. Table (9.38) and Figure (9.24) show that 6 respondents (10.2%) rated this factor as very important, 32 respondents rated the factor as important with (54.2%), and 17 respondents (28.8%) were uncertain. On the other hand, only 4 people rated this factor as not important with (6.8%) while no one has seen team development as not important at all.

Table (9.38) Team development

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	6	10.2	10.2	10.2
	Important	32	54.2	54.2	64.4
	Uncertain	17	28.8	28.8	93.2
	Not important	4	6.8	6.8	100.0
	Total	59	100.0	100.0	

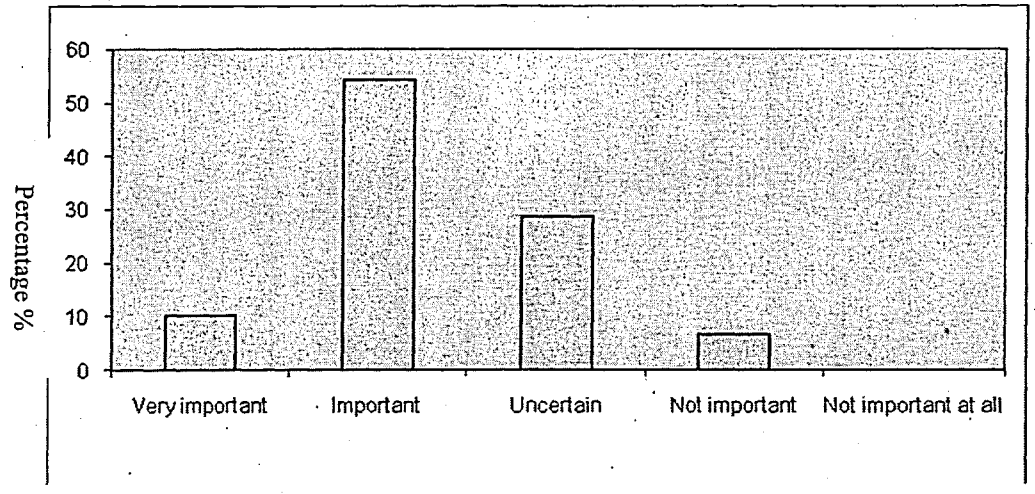


Figure (9.24) Respondents opinion about team development as an important factor

These results show there is general agreement that team development is essential in sharing responsibility, and allowing others to solve the problem. However, (28.8%) of

respondents seem to be aware of this factor; this is may be due to the fact that some managers do not like to motivate the employees' to carryout the responsibility.

The eighth question was to test to what extent the organisation must recognise that strong leadership and commitment will bring significant successes. On the other hand, weak leadership may bring partial or total success. Table (9.39) and Figure (9.25) show that 35 respondents (59.3%) rated this factor as very important, 18 respondents rated the factor as important with (30.5%), and 4 respondents (6.8%) were uncertain. On the other hand, only 2 people rated this factor as not important with (3.4%) while no one has seen the leadership as not important at all.

Table (9.39) Leadership

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very important	14	23.7	23.7	23.7
	Important	26	44.1	44.1	67.8
	Uncertain	18	30.5	30.5	98.3
	not important	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

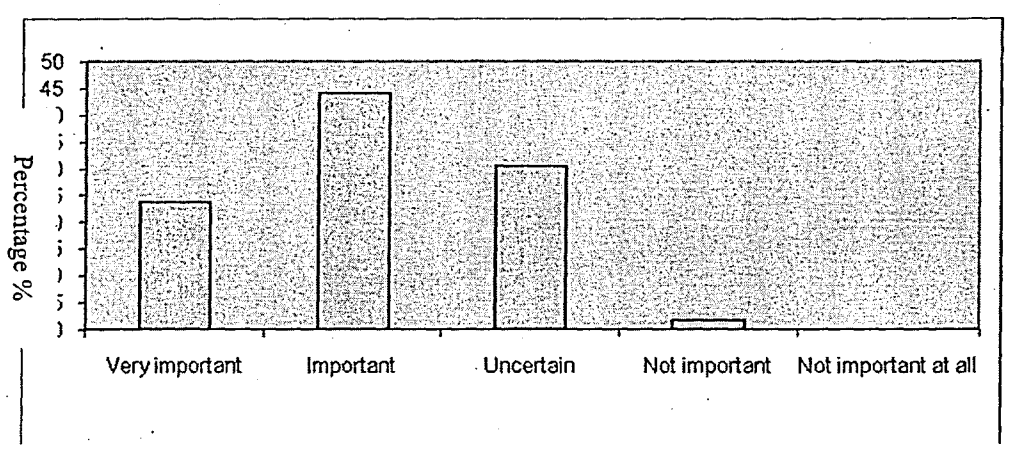


Figure (9.25) Respondents opinion about leadership as an important factor

These results show agreement that leaders must take part as role models in the creation of strategies, systems, and methods for achieving excellence in quality. These results are

logical that the managers are trying to improve the image of belonging. In addition, this also reflects the importance role of leadership to create quality culture that focuses on performance excellence.

The ninth question was to test to what extent the employees in the organisations should be provided with the necessary training and education, which is one of the important TQM requirements. Table (9.40) and Figure (9.26) show that 8 respondents (13.6%) rated this factor as very important, 30 respondents rated the factor as important with (50.8%), and 18 respondents (30.5%) were uncertain. On the other hand, only 3 people rated this factor as not important with (5.1%) while no one has seen training and education as not important at all.

Table (9.40) Training and Education

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	8	13.6	13.6	13.6
	Important	30	50.8	50.8	64.4
	Uncertain	18	30.5	30.5	94.9
	Not important	3	5.1	5.1	100.0
	Total	59	100.0	100.0	

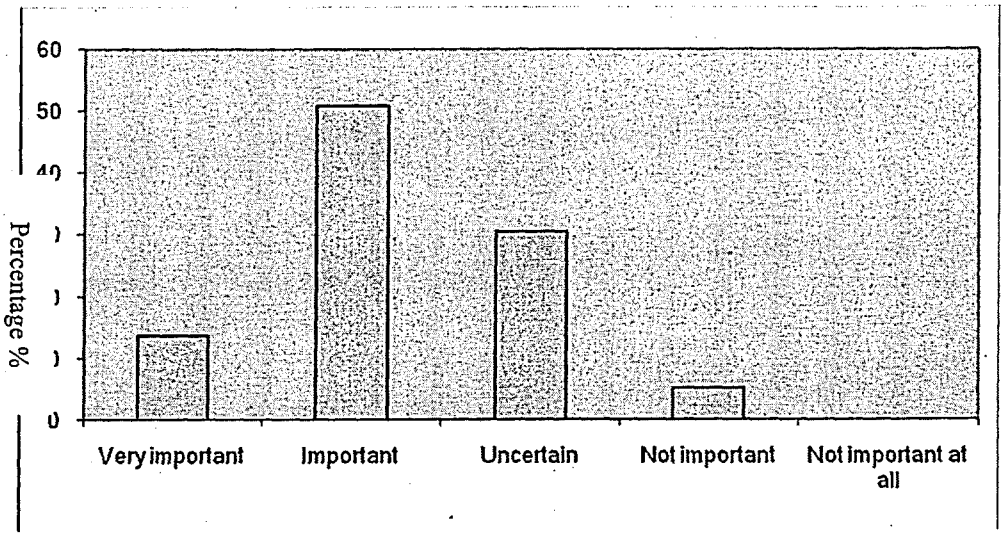


Figure (9.26) Respondents opinion about training and education as an important factor

These results show agreement by more than half of a sample on the important of this factor. There is general agreement that education and training are vital. The respondents recognised that for a TQM programme to be successful, each employee must be provided with training, which is one of the important TQM requirements.

The tenth question was to test to what extent the organisations should recognise that customer focus must be the whole goal of all quality implementation. Table (9.41) and Figure (9.27) show that 11 respondents (18.6%) rated this factor as very important, 30 respondents rated the factor as important with (50.8%), and 13 respondents (22%) were uncertain. On the other hand, only 5 persons rated this factor as not important with (8.5%), whereas no-one had seen customer focus as not important at all.

Table (9.41) Focus on Customer

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	11	18.6	18.6	18.6
	Important	30	50.8	50.8	69.5
	Uncertain	13	22.0	22.0	91.5
	Not important	5	8.5	8.5	100.0
	Total	59	100.0	100.0	

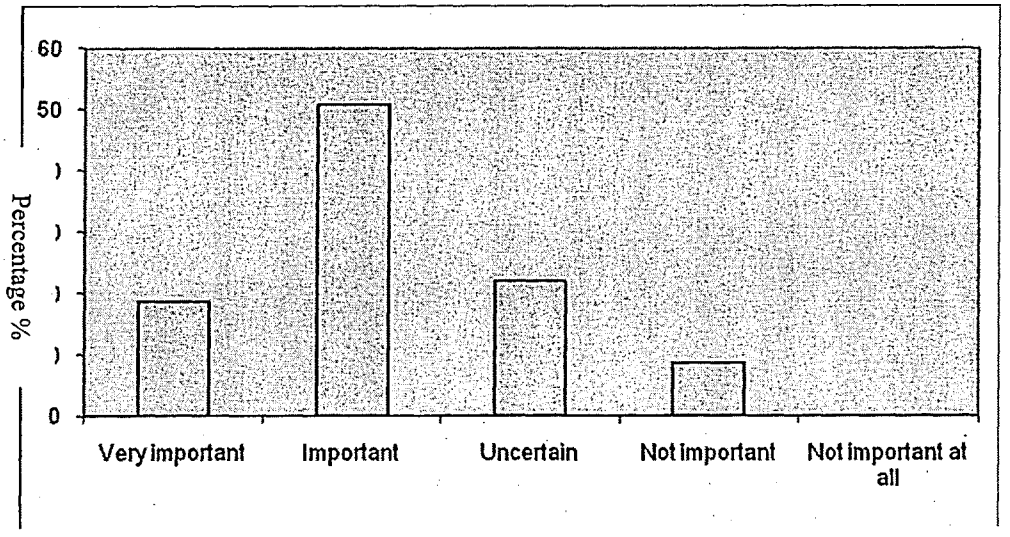


Figure (9.27) Respondents opinion about customer focus as an important factor

These results show agreement that the respondents recognised that customer focus must be the whole goal of all quality implementation.

The eleventh question was to test to what extent the organisations must recognise that using the criteria for measuring the services is for prevention purposes and make proactive decisions before mistakes are made. This should ensure that management is focused on the improvement of all processes within the organisation. Table (9.42) and Figure (9.28) show that 4 respondents (6.8%) rated this factor as very important, 27 respondents rated the factor as important with (45.8%), and 25 respondents (42.4%) were

uncertain. On the other hand, only 3 persons rated this factor as not important with (5.1%) while no person has seen the processes and measurement as not important at all.

Table (9.42) Processes and Measurement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	4	6.8	6.8	6.8
	Important	27	45.8	45.8	52.5
	Uncertain	25	42.4	42.4	94.9
	Not important	3	5.1	5.1	100.0
	Total	59	100.0	100.0	

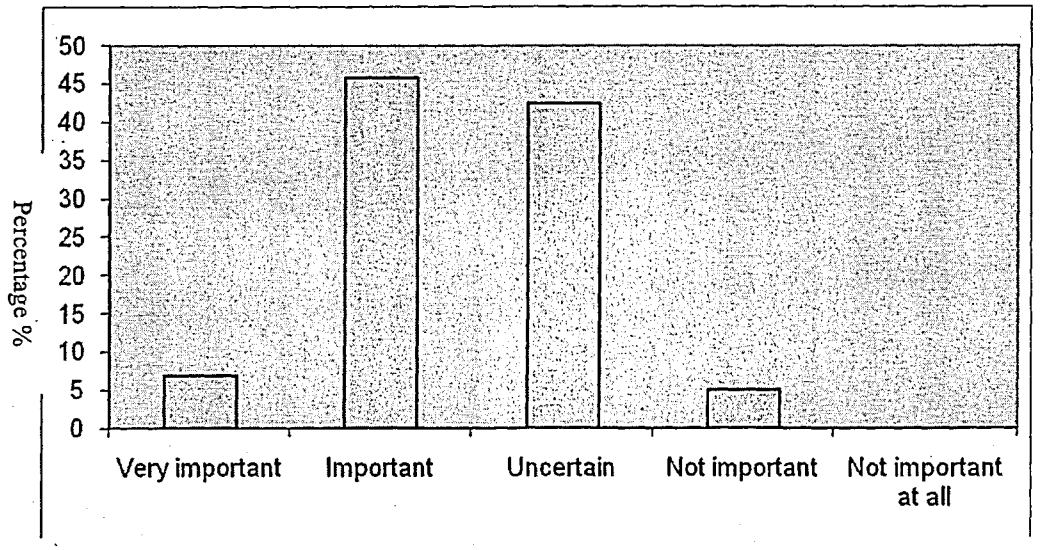


Figure (9.28) Respondents opinion about processes and measurement as an important factor

These results show the differences of sample research on the Processes and Measurement; it has been found that the percentage (45.8%) rated this factor as important and (42.4%) rated this factor as uncertain. (45.8%) of respondents recognised that improvement of the service comes through improve process and the system as a whole, in

its entire works. The confusion about the (42.4%) of respondents may recognise that these services cannot be cleared, which confirms the existence of some ambiguities in the evaluation of health services. This is probably a reflection that the respondents need to study and recognise the importance of this factor with respect to performance excellence. The twelfth question was to test to what extent the organisations must recognise that continuous improvement means the acceptance of additional small gains as a step towards total quality management. In addition, improving performance, productivity and efficiency in the use of all resources should be the goal of continuous improvement in all processes, and the work of each of the organisation's activities. Table (9.43) and Figure (9.29) show that 10 respondents (16.9%) rated this factor as very important, 28 respondents rated the factor as important with (47.5%), and 20 respondents (33.9%) were uncertain. On the other hand, only 1 person rated this factor as not important with (1.7%), no person had seen the continuous improvement as not important at all.

Table (9.43) Continuous Improvement

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Very important	10	16.9	16.9	16.9
	Important	28	47.5	47.5	64.4
	Uncertain	20	33.9	33.9	98.3
	Not important	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

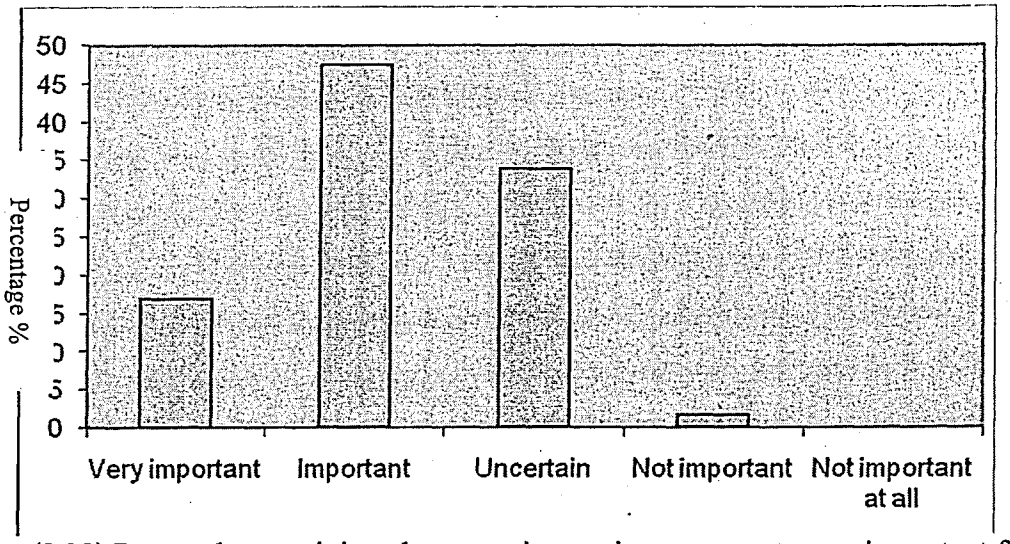


Figure (9.29) Respondents opinion about continuous improvement as an important factor

These results clearly show agreement by more than half of a sample on the importance of this factor. What is perhaps surprising is the outcome from the results regarding the relative importance related with this factor from (33.9%) of respondents who related this factor as uncertain. This is probably a reflection that the managers need to learn and be aware of the importance of this factor with respect to performance excellence.

9.5.3.1. Priority weights of the proposed framework factors:

Each person that filled in a questionnaire was asked about the extent the importance of the proposed framework factors for improving the quality performance of healthcare service.

Table (9.44) displays the respondent's opinion by the top and middle managers about the proposed framework factors and its total score. For example, vision has been seen as very important by 10 top managers and 4 middle managers and seen as important by 18 top managers and 10 middle managers etc. this in total will be :

$14 + 28(0.80) + 16(0.60) + 1(0.40) = 46.4/59 = 78.6\%$

Table (9.44) Respondents opinion about the proposed framework factors

The proposed framework factors	Very Important		Important		Uncertain		Not Important		Not Important at all		Total for Top	Total for Middle	Total Score
	100%		80%		60%		40%		20%		%	%	%
Management level	T	M	T	M	T	M	T	M	T	M			
Vision	10	4	18	10	11	5	0	1	0	0			
Total		14		28		16		1		0	79.4	77	78.6
Mission	6	4	21	8	11	7	1	1	0	0			
Total		10		29		18		2		0	76.6	75	75.9
Strategy	7	3	21	9	11	7	0	1	0	0			
Total		10		30		18		1		0	77.9	74	76.6
Communication	7	4	17	9	14	5	1	2	0	0			
Total		11		26		19		3		0	75.3	75	75.2
Empowerment	26	9	9	8	4	2	0	1	0	0			
Total		35		17		6		1		0	91.2	85	89.1
Trust	7	1	17	8	13	7	2	4	0	0			
Total		8		25		20		6		0	74.8	66	71.8
Team development	3	3	23	9	10	7	3	1	0	0			
Total		6		32		17		4		0	73.3	74	73.5
Leadership	10	4	18	8	11	7	0	1	0	0			
Total		14		26		18		1		0	79.4	75	77.9
Training & Education	4	4	23	7	11	7	1	2	0	0			
Total		8		30		18		3		0	75.3	73	74.5
Customer focus	8	3	22	8	6	7	3	2	0	0			
Total		11		30		13		5		0	77.9	72	75.9
Processes& Measurement	3	1	19	8	15	10	2	1	0	0			
Total		4		27		25		3		0	71.7	69	70.8
C. Improvement	7	3	20	8	12	8	0	1	0	0			
Total		10		28		20		1		0	77.4	73	75.9
Total Score											77.5	74	76.3

Figures (9.30) and (9.31) show the top and middle management priority weights of the proposed framework factors

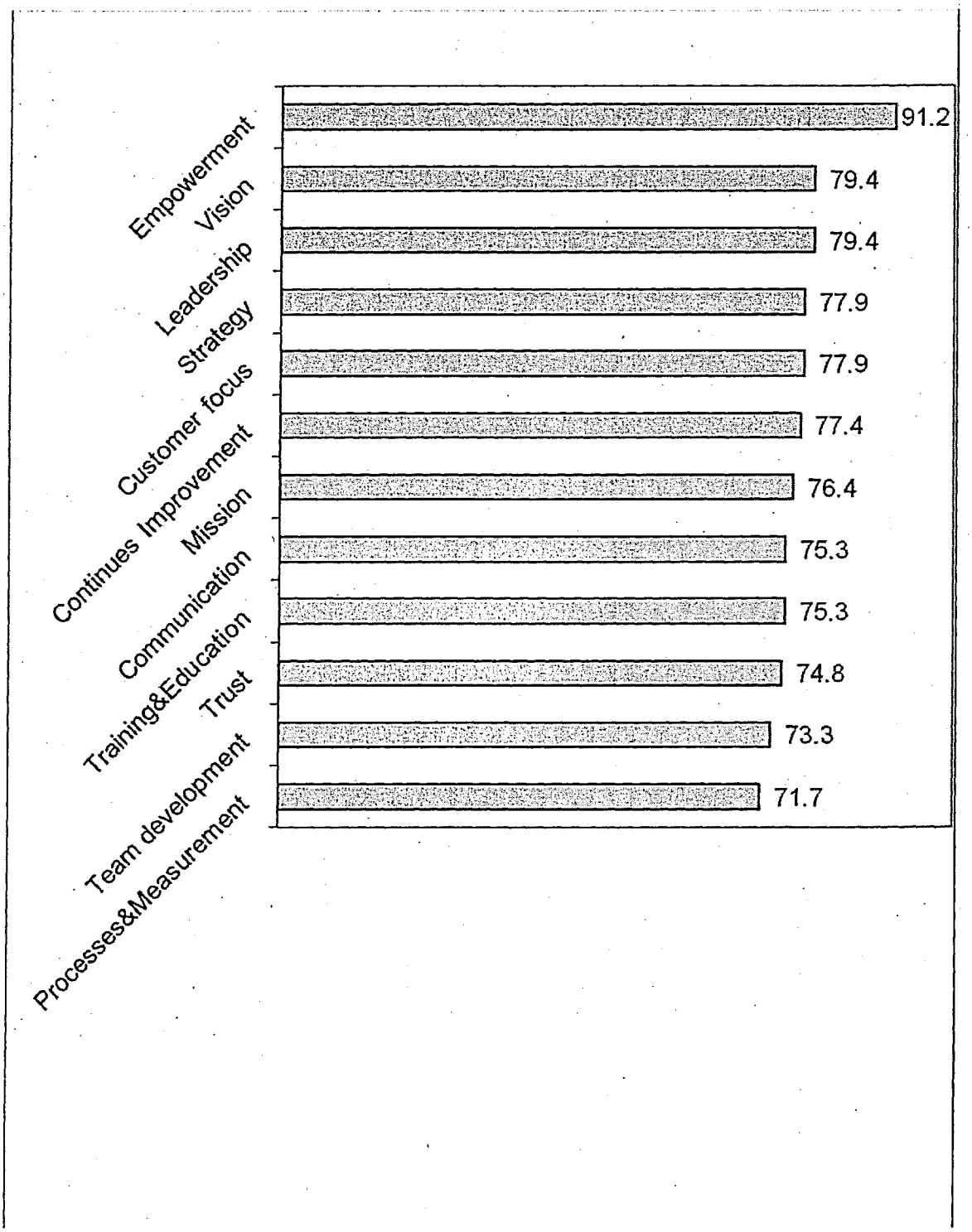


Figure (9.30) Top management priority weights of the proposed framework factors.

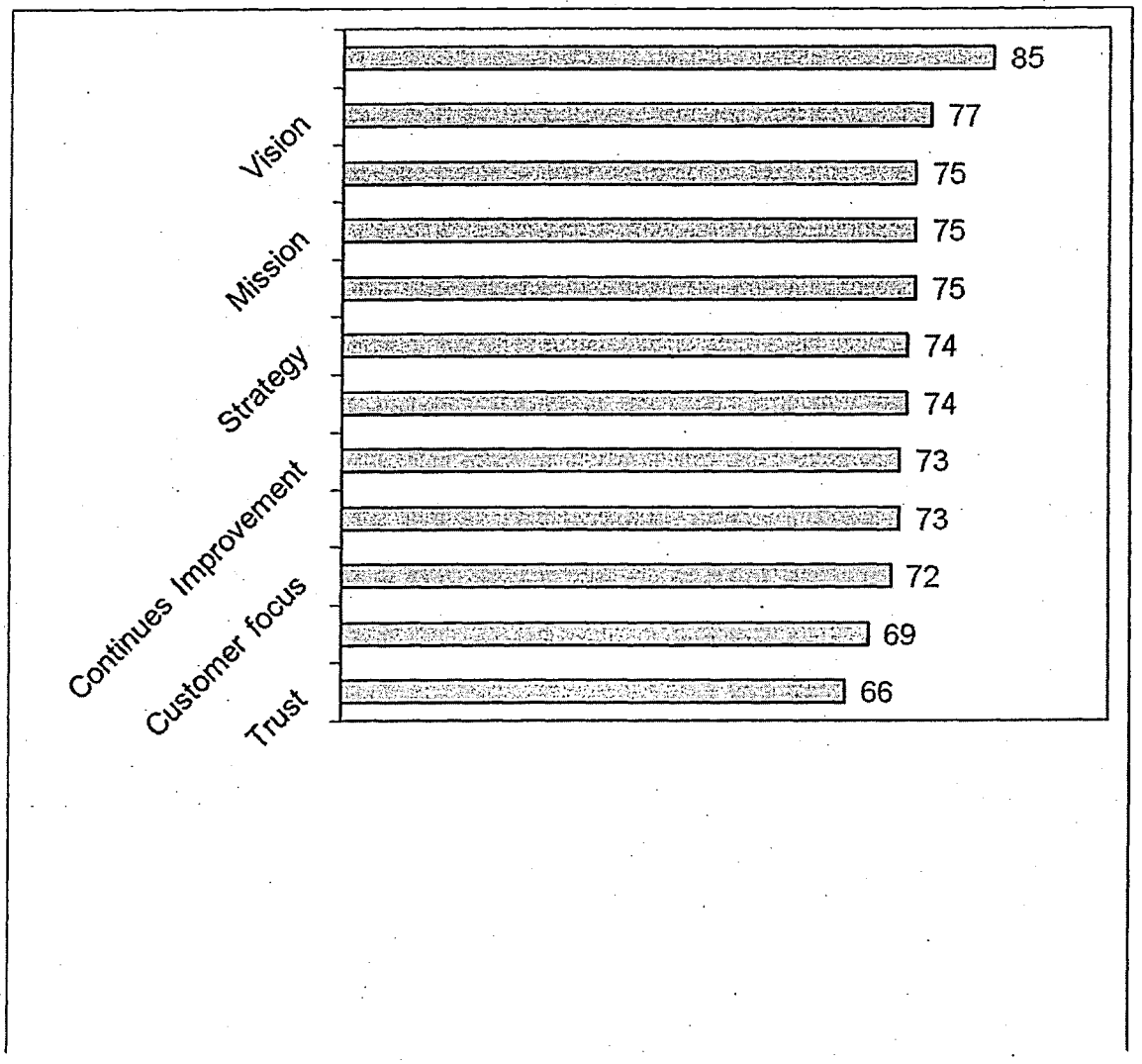


Figure (9.31) Middle management priority weights of the proposed framework factors.

Figure (9.32) below indicated that the total priority with regard to the importance of the proposed framework factors.

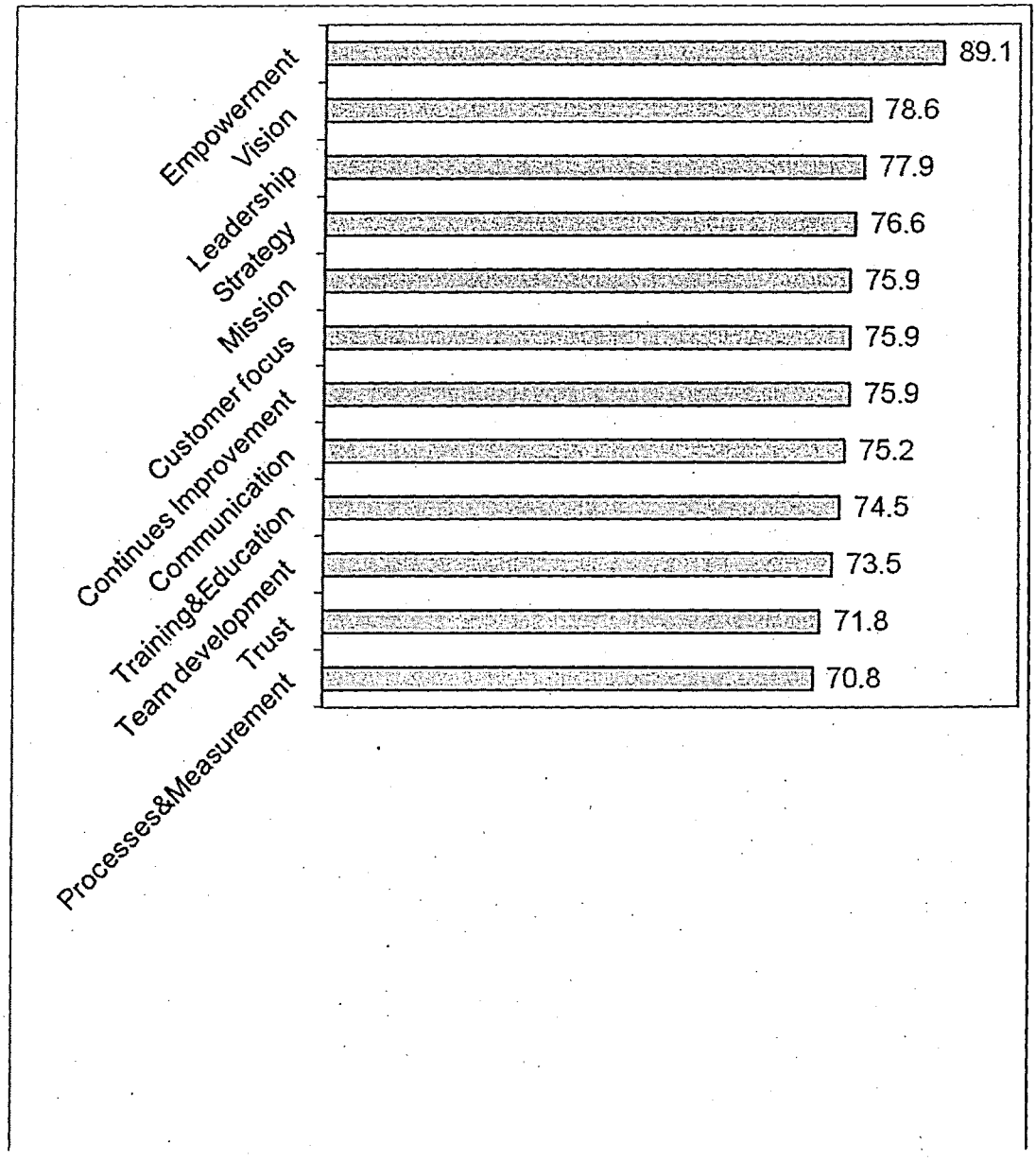


Figure (9.32) The priority weights of the proposed framework factors.

It can be seen that the highest priority of the proposed framework factors was the empowerment with (89.1%), after that the vision at (78.6%), then the leadership with (77.9%). On the other hand, the lowest level of the proposed framework factors was the processes and measurement with (70.8%).

The results presented and discussed in this section indicated that all of the factors of the proposed framework were on the whole rated as important by both top and middle management. The high priority reflects that both groups of respondents were of the opinion that the proposed framework factors are important for improving the quality performance of healthcare service in the organisations under investigation.

9.5.4. Section 4: Descriptive Statistics of the proposed framework stages.

The fourth section of the questionnaire was designed to discover to what extent the proposed framework stages will guide and facilitate successfully the implementation of total quality management in the organisations under investigation. Seven stages have been selected; these were used for developing a self-explanatory survey questionnaire (on a five-point Likert scale ranging from very important to not important at all) to collect data from two levels; top management and middle management.

Table (9.45) Descriptive Statistics of the proposed framework stages.

	N	Minimum	Maximum	Mean	Std. Deviation
AP	59	1.00	4.00	2.2542	.68464
QCT	59	1.00	4.00	2.1695	.91260
IPCQS	59	1.00	4.00	2.2881	.83151
CF	59	1.00	4.00	1.7966	.94284
MQ	59	1.00	4.00	2.3390	.77926
SA	59	1.00	4.00	2.2034	.76066
PCDA	59	1.00	4.00	2.1695	.74631
Valid N (listwise)	59				

The first column in Table (9.45) lists the different categories of variables of the proposed framework stages. The second column provides the number of respondents (59). The third and fourth column shows minimum and maximum answers between (1 - 4).

It can be seen that no-one choose point 5, which is why the minimum and maximum appeared as 1 to 4. The fifth column indicates that the mean is between 1.7966 and 2.3390. The final column illustrates that Standard Deviation is between 0.68464 and 0.94284.

Each person that filled in a questionnaire was asked to what extent the proposed framework stages will guide and facilitate the successful implementation of total quality management in the organisations under investigation.

The first question was to test to what extent the adaptation and preparation will guide and facilitate the administration to adopt the philosophy of total quality management. Table (9.46) and Figure (9.33) show that 4 respondents (6.8%) rated this stage as very important, 40 respondents rated the stage as important with (67.8%) and 11 respondents (18.6%) were uncertain. On the other hand, only 4 people rated this stage as not important with (6.8%) while no one has seen the adaptation and preparation as not important at all.

Table (9.46) Adaptation and Preparation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very important	4	6.8	6.8	6.8
	Important	40	67.8	67.8	74.6
	Uncertain	11	18.6	18.6	93.2
	Not important	4	6.8	6.8	100.0
	Total	59	100.0	100.0	

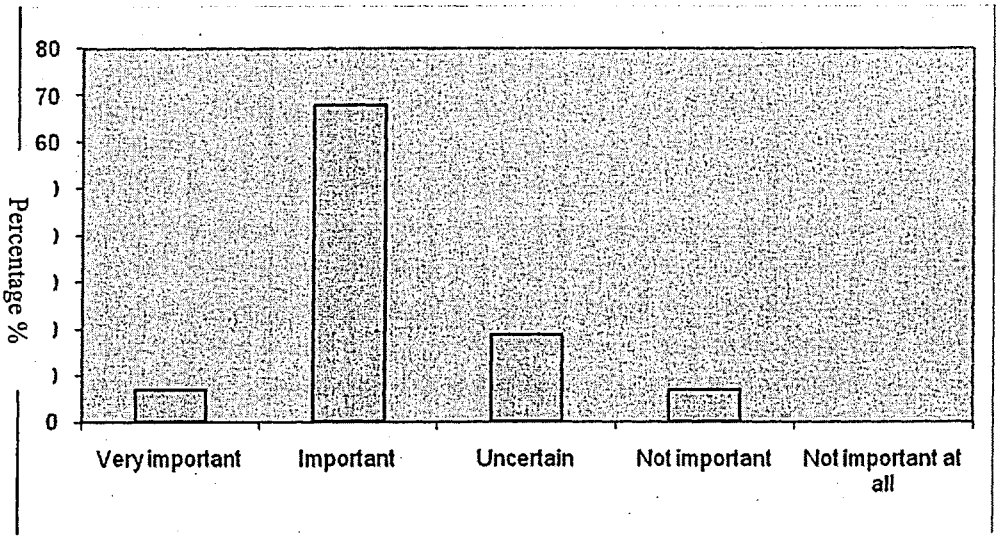


Figure (9.33) Respondents opinion about adaptation and preparation stage

These results clearly show that the adaptation and preparation is important stage in order to implement TQM in hospitals and healthcare. This is maybe a reflection that the managers like to obtain the required training programmes that help them to know how to formulate the vision and objectives of the organisation and allocate the necessary resources.

The second question was to test to what extent the necessary to create Quality Circles Team, which will be responsible for improving quality in Libyan Healthcare Sector. Table (9.47) and Figure (9.34) show that 16 respondents (27.1%) rated this stage as very important, 21 respondents rated the stage as important with (35.6%) and 18 respondents (30.5%) were uncertain. On the other hand, only 4 people rated this stage as not important with (6.8%). No one had seen the Quality Circles Team as not important at all.

Table (9.47) Quality Circles Team

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very important	16	27.1	27.1	27.1
	Important	21	35.6	35.6	62.7
	Uncertain	18	30.5	30.5	93.2
	Not important	4	6.8	6.8	100.0
	Total	59	100.0	100.0	

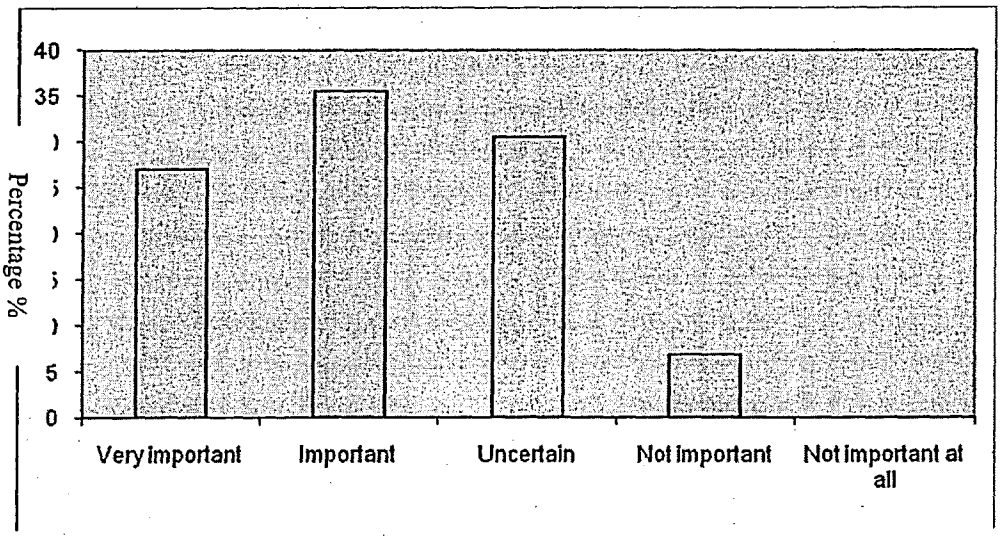


Figure (9.34) Respondents opinion about Quality Circles Team stage

These results show that more half of the respondents in full agreement that the QCT is vital stage to guide and facilitate successfully the implementation of total quality management in the organisations under investigation. What is perhaps surprising outcome from the results is the relative importance related to this stage from (30.5%) of respondents who related this factor as uncertain. This is maybe a reflection that the managers need to learn more and have knowledge of the importance of Quality Circles Team which consists of a small group of people that meet on a regular basis, to discuss problems, search for solutions, and cooperate with administration in the implementation of those solutions.

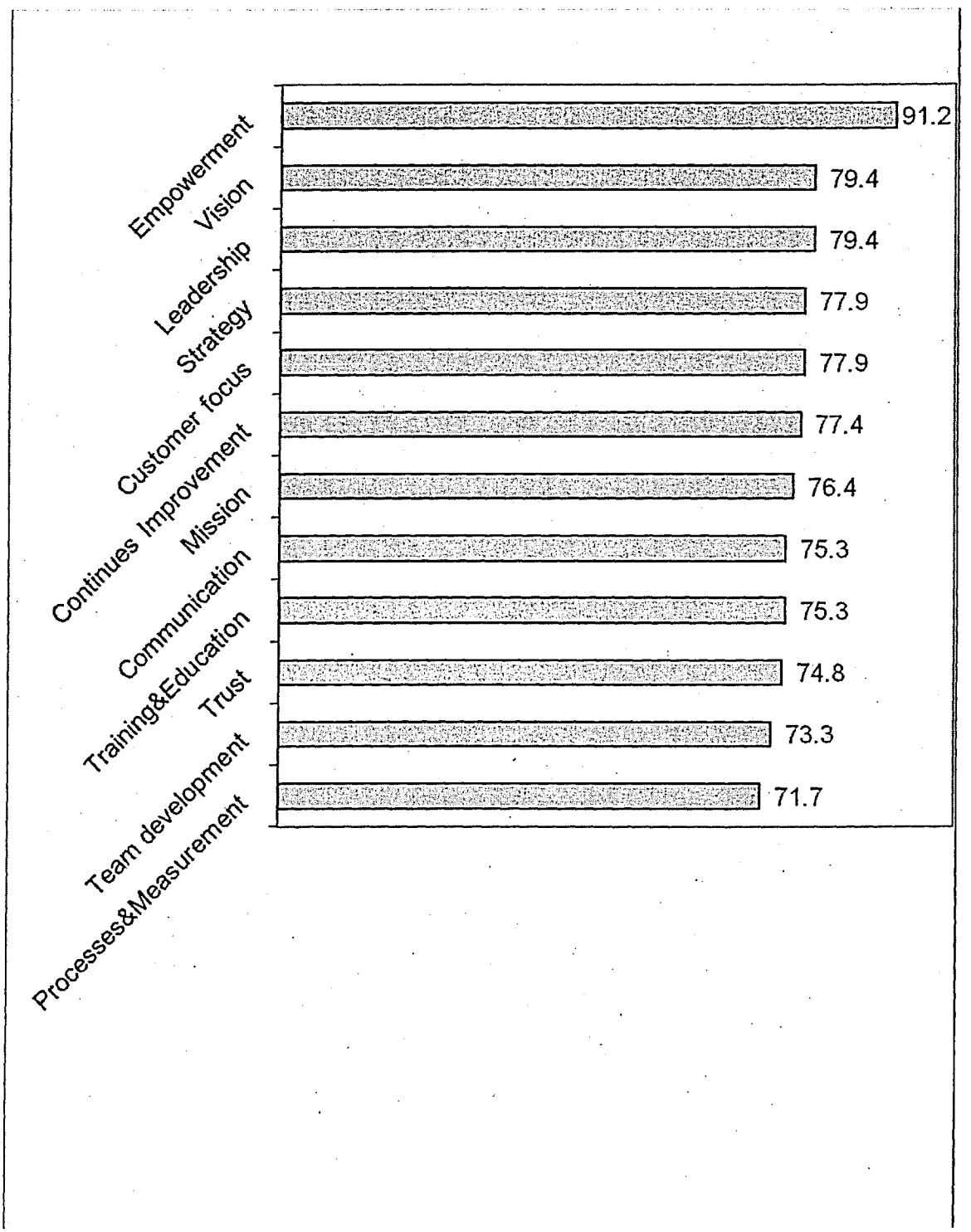


Figure (9.30) Top management priority weights of the proposed framework factors.

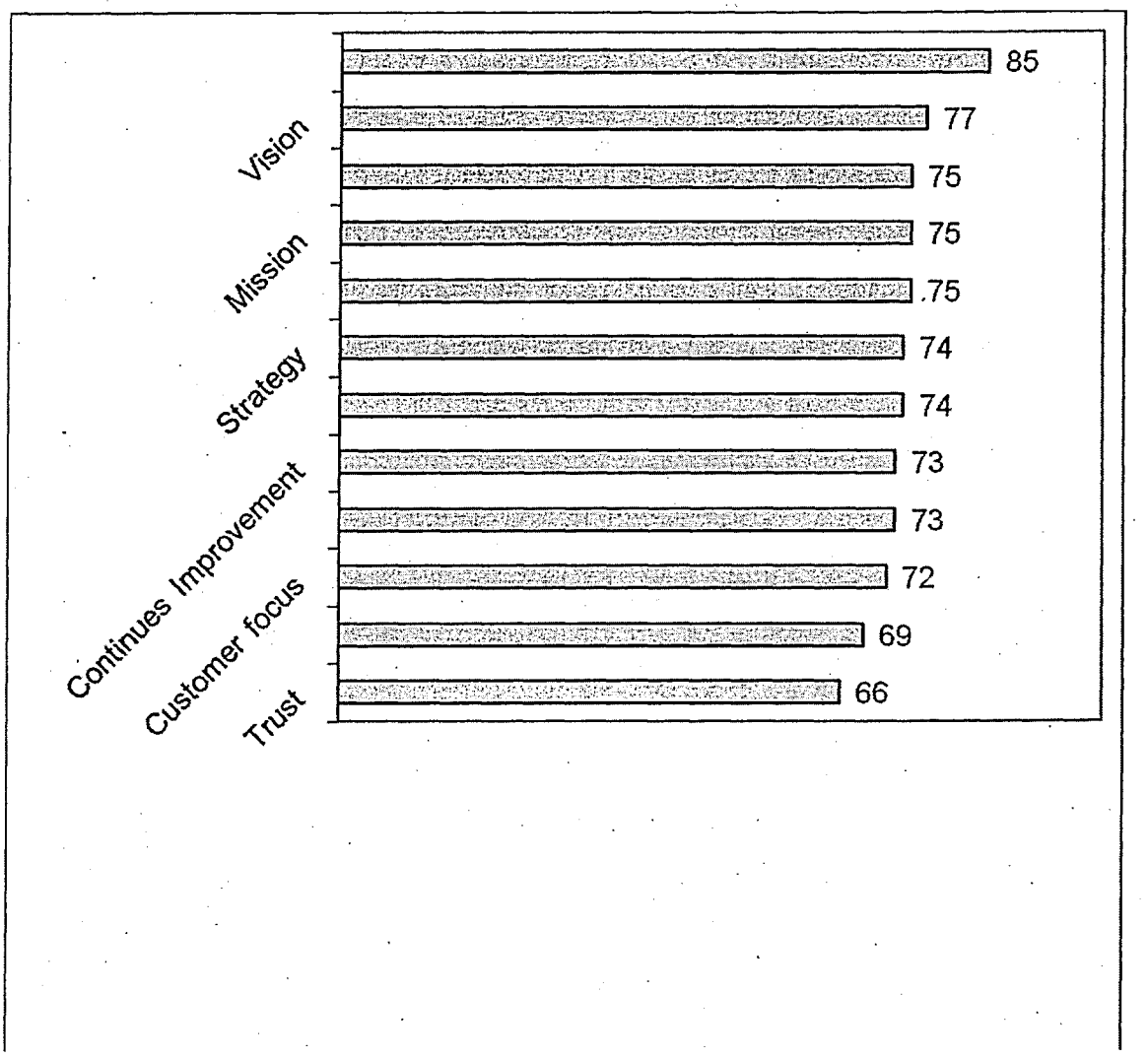


Figure (9.31) Middle management priority weights of the proposed framework factors.

Figure (9.32) below indicated that the total priority with regard to the importance of the proposed framework factors.

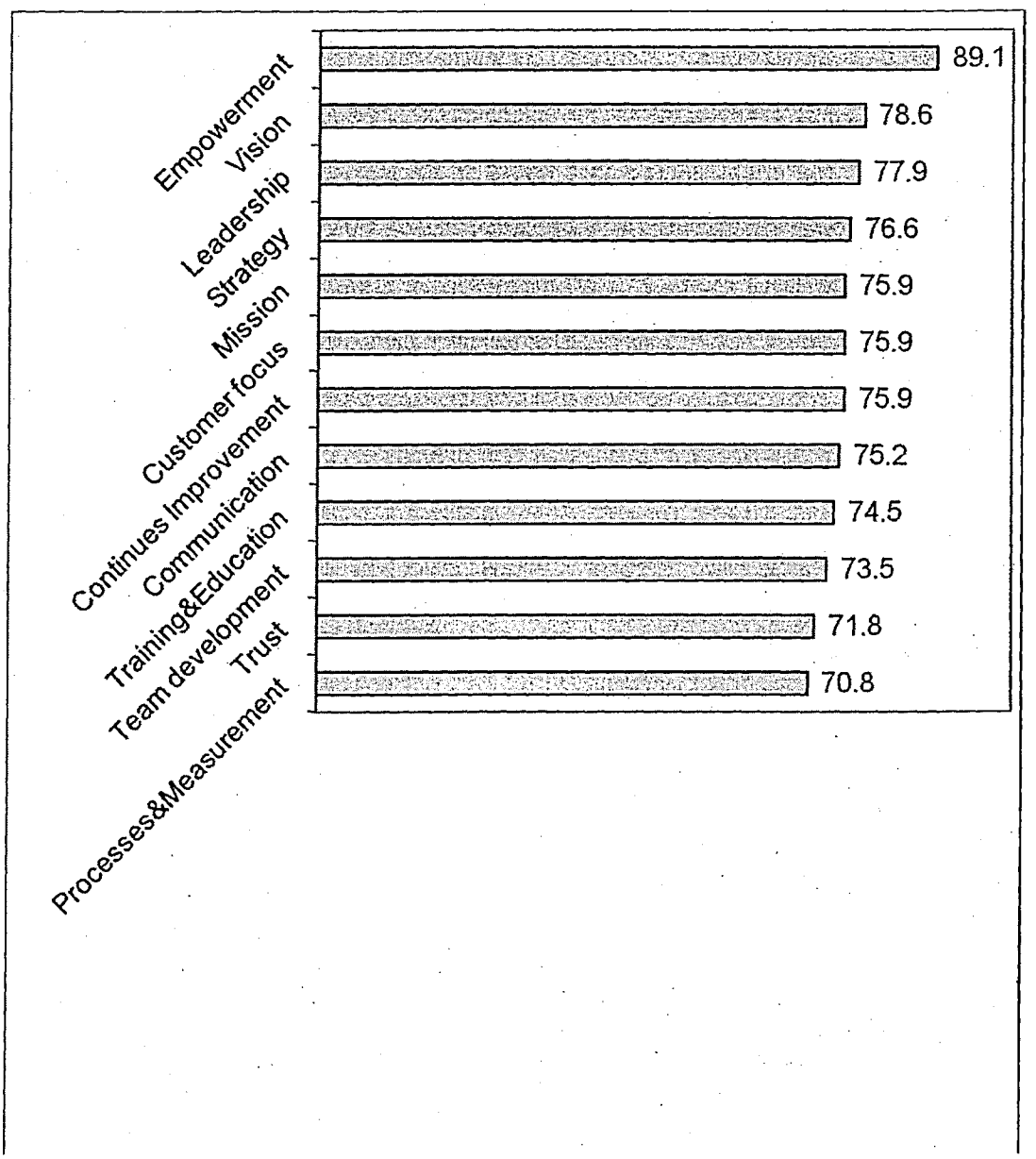


Figure (9.32) The priority weights of the proposed framework factors.

It can be seen that the highest priority of the proposed framework factors was the empowerment with (89.1%), after that the vision at (78.6%), then the leadership with (77.9%). On the other hand, the lowest level of the proposed framework factors was the processes and measurement with (70.8%).

The results presented and discussed in this section indicated that all of the factors of the proposed framework were on the whole rated as important by both top and middle management. The high priority reflects that both groups of respondents were of the opinion that the proposed framework factors are important for improving the quality performance of healthcare service in the organisations under investigation.

9.5.4. Section 4: Descriptive Statistics of the proposed framework stages.

The fourth section of the questionnaire was designed to discover to what extent the proposed framework stages will guide and facilitate successfully the implementation of total quality management in the organisations under investigation. Seven stages have been selected; these were used for developing a self-explanatory survey questionnaire (on a five-point Likert scale ranging from very important to not important at all) to collect data from two levels; top management and middle management.

Table (9.45) Descriptive Statistics of the proposed framework stages.

	N	Minimum	Maximum	Mean	Std. Deviation
AP	59	1.00	4.00	2.2542	.68464
QCT	59	1.00	4.00	2.1695	.91260
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MQ	59	1.00	4.00	2.3390	.77926
SA	59	1.00	4.00	2.2034	.76066
PCDA	59	1.00	4.00	2.1695	.74631
Valid N (listwise)	59				

The first column in Table (9.45) lists the different categories of variables of the proposed framework stages. The second column provides the number of respondents (59). The third and fourth column shows minimum and maximum answers between (1 - 4).

It can be seen that no-one choose point 5, which is why the minimum and maximum appeared as 1 to 4. The fifth column indicates that the mean is between 1.7966 and 2.3390. The final column illustrates that Standard Deviation is between 0.68464 and 0.94284.

Each person that filled in a questionnaire was asked to what extent the proposed framework stages will guide and facilitate the successful implementation of total quality management in the organisations under investigation.

The first question was to test to what extent the adaptation and preparation will guide and facilitate the administration to adopt the philosophy of total quality management. Table (9.46) and Figure (9.33) show that 4 respondents (6.8%) rated this stage as very important, 40 respondents rated the stage as important with (67.8%) and 11 respondents (18.6%) were uncertain. On the other hand, only 4 people rated this stage as not important with (6.8%) while no one has seen the adaptation and preparation as not important at all.

Table (9.46) Adaptation and Preparation

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very important	4	6.8	6.8	6.8
	Important	40	67.8	67.8	74.6
	Uncertain	11	18.6	18.6	93.2
	Not important	4	6.8	6.8	100.0
	Total	59	100.0	100.0	

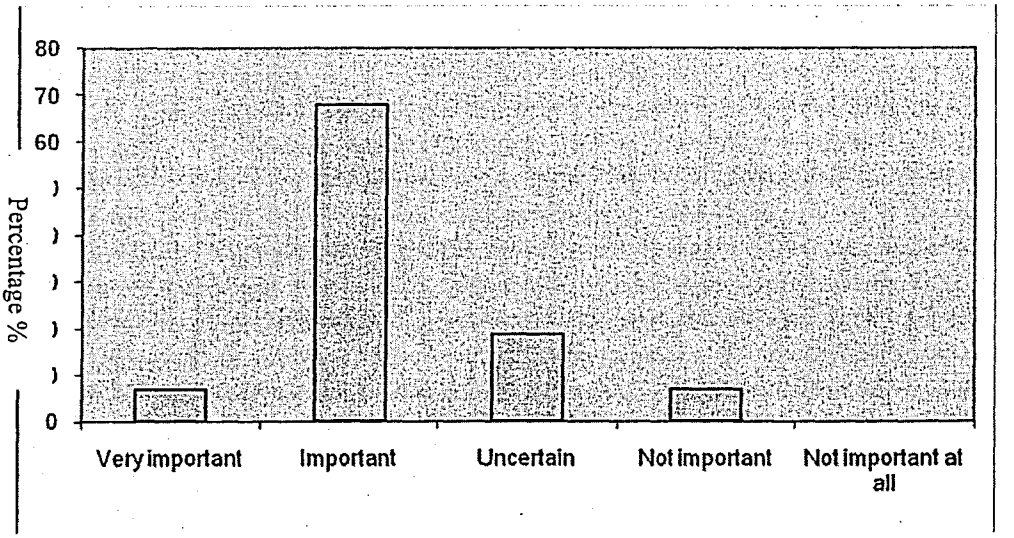

Figure (9.33) Respondents opinion about adaptation and preparation stage

These results clearly show that the adaptation and preparation is important stage in order to implement TQM in hospitals and healthcare. This is maybe a reflection that the managers like to obtain the required training programmes that help them to know how to formulate the vision and objectives of the organisation and allocate the necessary resources.

The second question was to test to what extent the necessary to create Quality Circles Team, which will be responsible for improving quality in Libyan Healthcare Sector. Table (9.47) and Figure (9.34) show that 16 respondents (27.1%) rated this stage as very important, 21 respondents rated the stage as important with (35.6%) and 18 respondents (30.5%) were uncertain. On the other hand, only 4 people rated this stage as not important with (6.8%). No one had seen the Quality Circles Team as not important at all.

Table (9.47) Quality Circles Team

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very important	16	27.1	27.1	27.1
	Important	21	35.6	35.6	62.7
	Uncertain	18	30.5	30.5	93.2
	Not important	4	6.8	6.8	100.0
	Total	59	100.0	100.0	

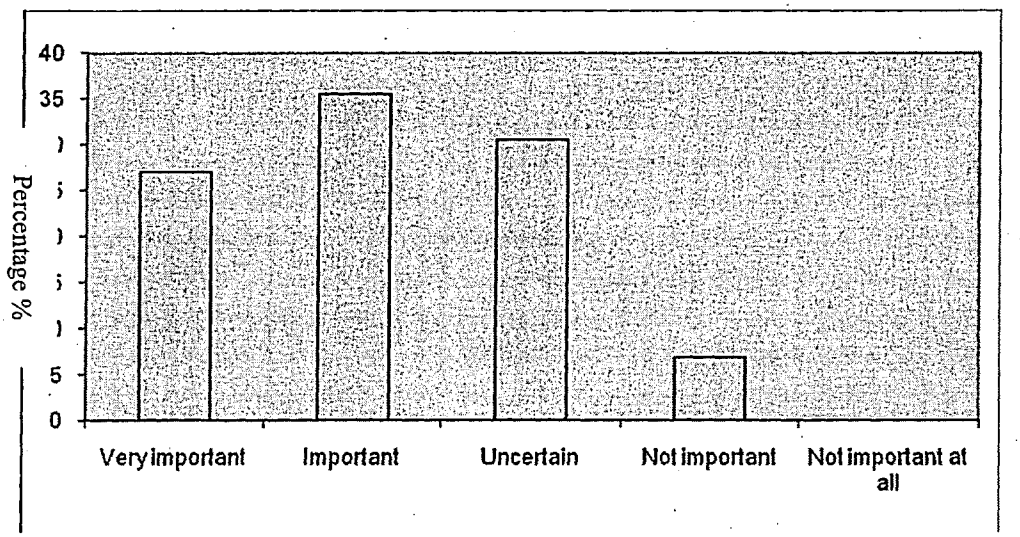

Figure (9.34) Respondents opinion about Quality Circles Team stage

These results show that more half of the respondents in full agreement that the QCT is vital stage to guide and facilitate successfully the implementation of total quality management in the organisations under investigation. What is perhaps surprising outcome from the results is the relative importance related to this stage from (30.5%) of respondents who related this factor as uncertain. This is maybe a reflection that the managers need to learn more and have knowledge of the importance of Quality Circles Team which consists of a small group of people that meet on a regular basis, to discuss problems, search for solutions, and cooperate with administration in the implementation of those solutions.

The third question was to test to what extent identifying the problem in the current quality system will guide and facilitate successfully the implementation of total quality management in the organisations under investigation. Table (9.48) and Figure (9.35) show that 9 respondents (15.3%) rated this stage as very important, 29 respondents rated the stage as important with (49.2%) and 16 respondents (27.1%) were uncertain. On the other hand, only 5 people rated this stage as not important with (8.5%) whereas no person has seen identifying the problem in the current quality system not important at all.

Table (9.48) Identify the problem in the current quality system

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very important	9	15.3	15.3	15.3
	important	29	49.2	49.2	64.4
	uncertain	16	27.1	27.1	91.5
	not important	5	8.5	8.5	100.0
	Total	59	100.0	100.0	

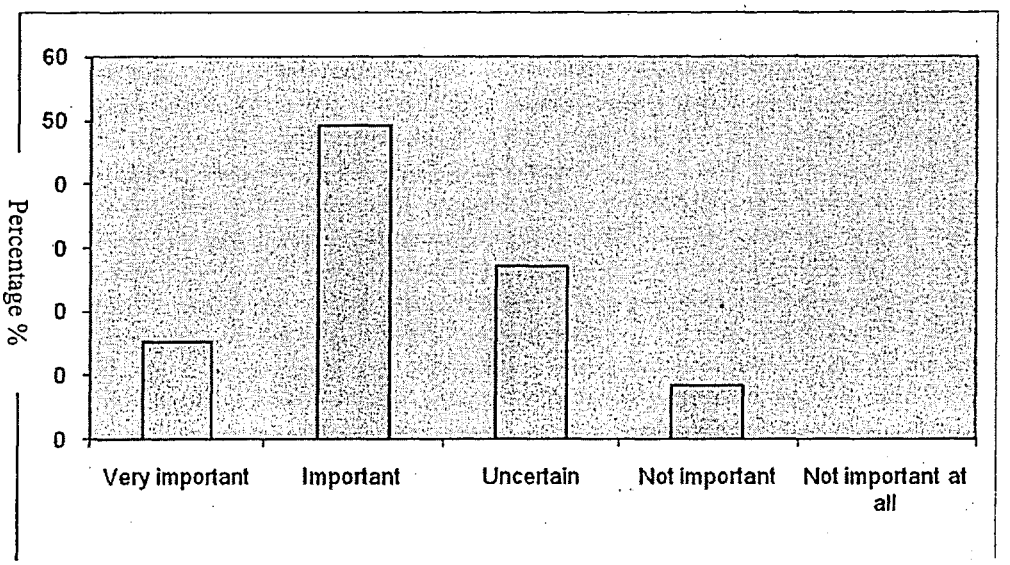

Figure (9.35) Respondents opinion about identifying the problem in the current quality system stage

These results show majority of the respondents are in agreement that this stage to collect data and information about policies, features, difficulties and quality system in the field of healthcare in order to identify the problems in the current quality system is important. The researcher finds that the answers "uncertain" does not reflect the practical reality, this maybe some of them don't want to recognise or admit the problems in the current quality system due to fear of some of them and lack the bravery to say the truth.

The forth question was to test to what extent the selection of the factors which to be evaluated should be based on the difficulties in the quality system and the areas that require immediate attention. Table (9.49) Figure (9.36) show that 30 respondents (50.8%) rated this stage as very important, 14 respondents rated the stage as important with (23.7%) and 12 respondents (20.3%) were uncertain. On the other hand, only 3 persons rated this stage as not important with (5.1%) while no person has seen selecting the factors to be evaluated not important at all.

Table (9.49) Select the factors to be evaluated

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very important	30	50.8	50.8	50.8
	Important	14	23.7	23.7	74.6
	Uncertain	12	20.3	20.3	94.9
	Not important	3	5.1	5.1	100.0
	Total	59	100.0	100.0	

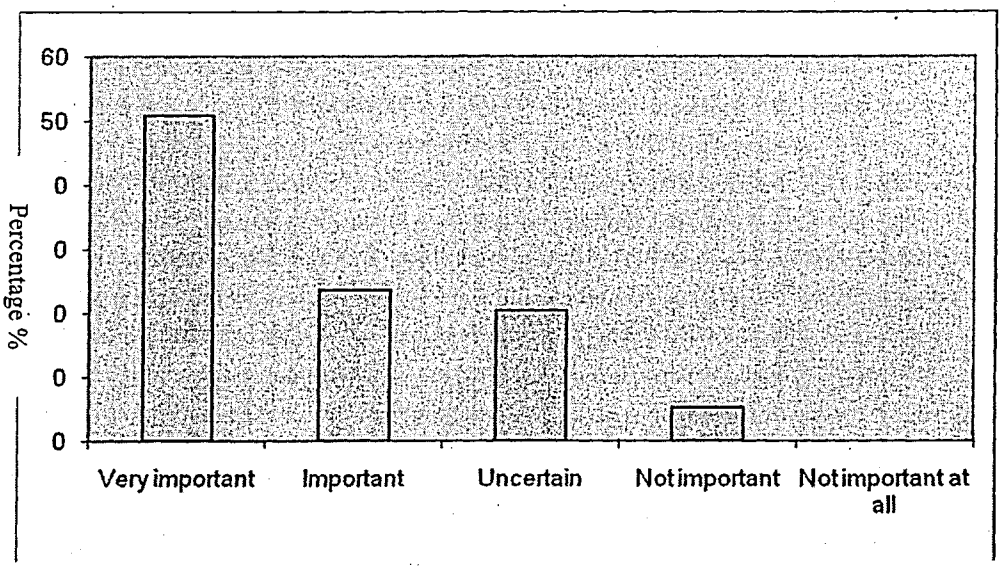

Figure (9.36) Respondents opinion about select the factors to be evaluated stage

These results show that more half of the respondents in full agreement that the select the factors to be evaluated is vital stage to guide and facilitate successfully the implementation of total quality management in the organisations under investigation. The researcher believes that the quality programs have to be designed in a way to satisfy the customers' requirements and according to possibilities available. Therefore, more half of a sample recognised that the selection should be based on the strategy implementation, the difficulties in the quality system and the areas that require immediate attention. In addition, they believe that the TQM programs should start to evaluate the case and to try to increase qualifications and abilities in a clear, frank and easy method to implement.

The fifth question was to test to what extent identifies the strengths and weakness points of leadership system, identify the excellence of culture organisational, and identify best practices of TQM factors and benchmarking the performance between the healthcare organisations will guide and facilitate successfully the implementation of total quality

management in the organisations under investigation. Table (9.50) and Figure (9.37) show that 6 respondents (10.2%) rated this stage as very important, 32 respondents rated the stage as important with (54.2%) and 16 respondents (27.1%) were uncertain. On the other hand, only 5 persons rated this stage as not important with (8.5%) while no person has seen measuring the quality service not important at all.

Table (9.50) Measuring the quality service

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very important	6	10.2	10.2	10.2
	Important	32	54.2	54.2	64.4
	Uncertain	16	27.1	27.1	91.5
	Not important	5	8.5	8.5	100.0
	Total	59	100.0	100.0	

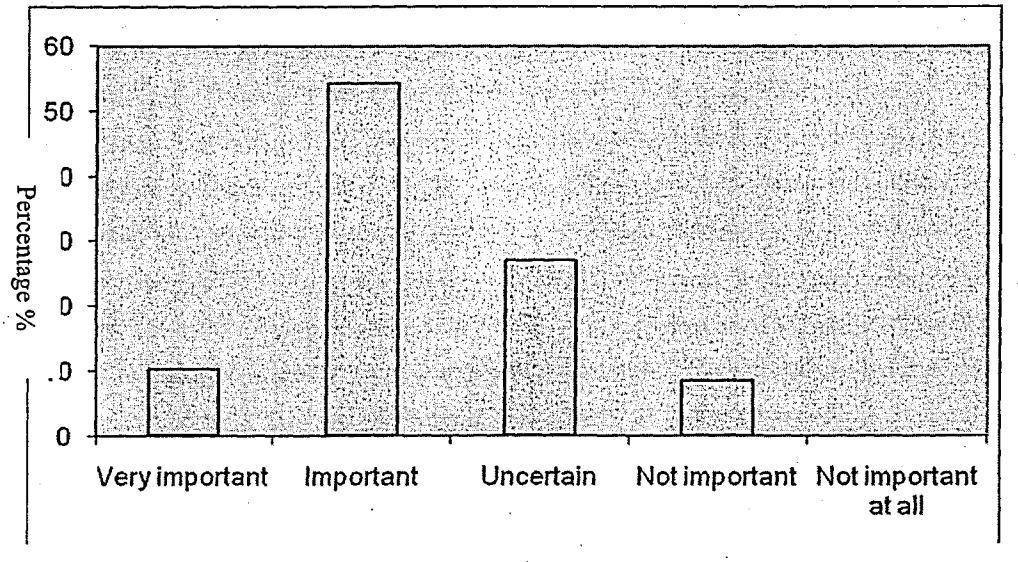

Figure (9.37) Respondents opinion about measuring the quality service stage

These results show agreement by more half of a sample on the importance of this stage to guide and facilitate successfully the implementation of total quality management in the organisations under investigation. However, some of them who answer "uncertain" maybe need to understand their organisations culture and make their best efforts to tackle

it for the change of that culture into the total quality culture, they have chances of establishing a new different value if they wish to implement the total quality management successfully as a strategy.

The sixth question was to test to what extent the sensitivity analysis should be used to examine the impact of changing the priority of the criteria on the outcomes. Table (9.51) and Figure (9.38) show that 11 respondents (18.6%) rated this stage as very important, 26 respondents rated the stage as important with (44.1%) and 21 respondents (35.6%) were uncertain. On the other hand, only one person rated this stage as not important with (1.7%) while no one had seen the sensitivity analysis as not important at all.

Table (9.51) sensitivity analysis

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very important	11	18.6	18.6	18.6
	Important	26	44.1	44.1	62.7
	Uncertain	21	35.6	35.6	98.3
	Not important	1	1.7	1.7	100.0
	Total	59	100.0	100.0	

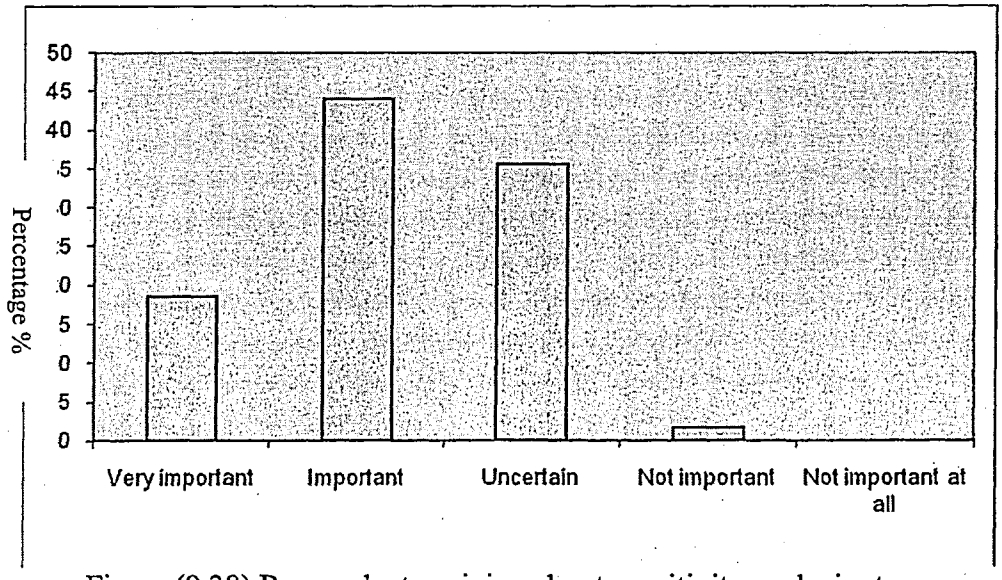

Figure (9.38) Respondents opinion about sensitivity analysis stage

These results show agreement by more than half of a sample on the importance of this stage to guide and facilitate successfully the implementation of total quality management in the organisations under investigation. The respondents think that the sensitivity analysis may help the decision making process to improve the service. Therefore, the respondents recognised that the decision maker could use the sensitivity analysis results to establish which factor and which organisation should be improved to realise a competitive advantage. On the other hand, some of respondents who answer "uncertain" maybe need to learn more about this approach which allows examining different situations and finding out how a change in the importance of one criterion may influence other choices. They need to learn more about this approach which is of significant importance to the decision maker who needs to improve the service and identify best practices of TQM factors with respect to excellence performance and benchmarking inthe performance of healthcare organisations with a view to clarify which organisation is out performed with respect to the identified TQM factors.

The seventh question was to test to what extent the Plan-Do-Check-Act stage will guide and facilitate successfully the implementation of total quality management in the organisations under investigation. Table (9.52) and Figure (9.39) show that 8 respondents (13.6%) rated this stage as very important, 37 respondents rated the stage as important with (62.7%) and 10 respondents (16.9%) were uncertain. On the other hand, only 4 people rated this stage as not important with (6.8%) while no one has seen the Plan-Do-Check-Act stage as not important at all.

Table (9.52) Plan-Do-Check-Act

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	very important	8	13.6	13.6	13.6
	important	37	62.7	62.7	76.3
	uncertain	10	16.9	16.9	93.2
	not important	4	6.8	6.8	100.0
	Total	59	100.0	100.0	

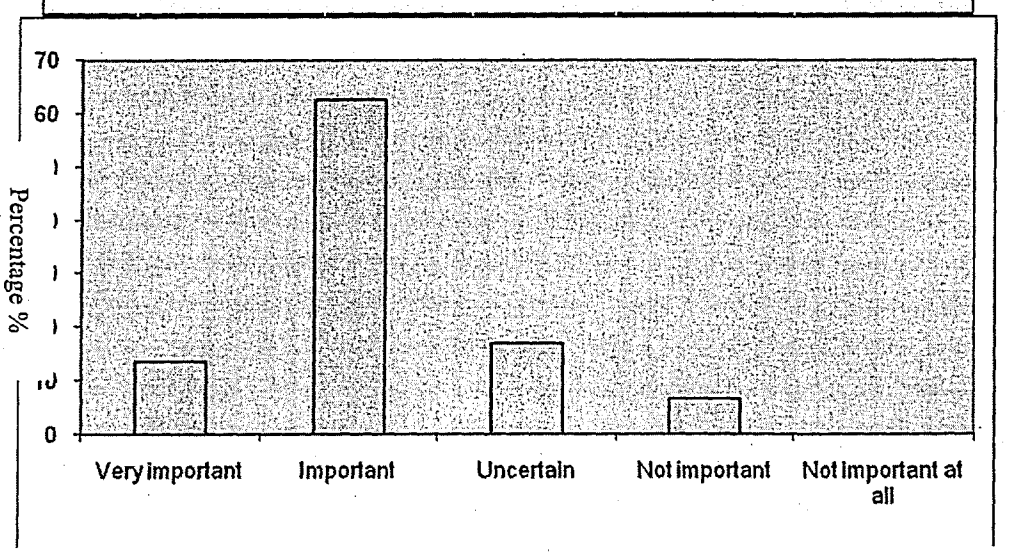

Figure (9.39) Respondents opinion about Plan-Do-Check-Act stage

The results show agreement by the respondents on the importance of this stage to guide and facilitate successfully the implementation of total quality management in the organisations under investigation.

9.5.4.1. Priority weights of the proposed framework factors:

Each person that filled in a questionnaire was asked to what extent the proposed framework stages will guide and facilitate successfully the implementation of total quality management in the organisations under investigation.

Table (9.60) and figures (9.40), (9.41) and (9.42) below indicated the total differences between the respondents (Top management and Middle management) with regard to the

importance of the proposed framework stages. For example; AP stage has been seen as very important by 3 top managers and 1 middle manager but seen as important by 25 top managers and 15 middle managers etc, this in total will be:

$4 + 40(0.80) + 11(0.60) + 4(0.40) = 44.2/59 = 74.9\%$

Table (9.60) Respondents opinion about the proposed framework stages

The proposed framework stages	Very Important		Important		Uncertain		Not Important		Not Important at all		Total for Top	Total for Middle	Total Score
	100%		80%		60%		40%		20%		%	%	%
Management level	Top	Middle	Top	Middle	Top	Middle	Top	Middle	Top	Middle			
AP	3	1	25	15	7	4	4	0	0	0	73.8	77.6	
Total		4		40		11		4		0			74.9
QCT	13	3	12	9	11	7	3	1	0	0	77.9	74	
Total		16		21		18		4		0			76.6
IPCQS	6	3	18	11	11	5	4	1	0	0	73.3	76	
Total		9		29		16		5		0			74.2
CF	22	8	12	2	6	6	2	1	0	0	92.3	68	
Total		30		14		12		3		0			84
MQ	4	2	20	12	11	5	4	1	0	0	72.3	75	
Total		6		32		16		5		0			73.2
SA	8	3	17	9	13	8	1	0	0	0	76.4	75	
Total		11		26		21		1		0			75.9
PCDA	6	2	22	15	7	3	4	0	0	0	75.3	79	
Total		8		37		10		4		0			76.6
Total Score											77.3	74.9	76.4

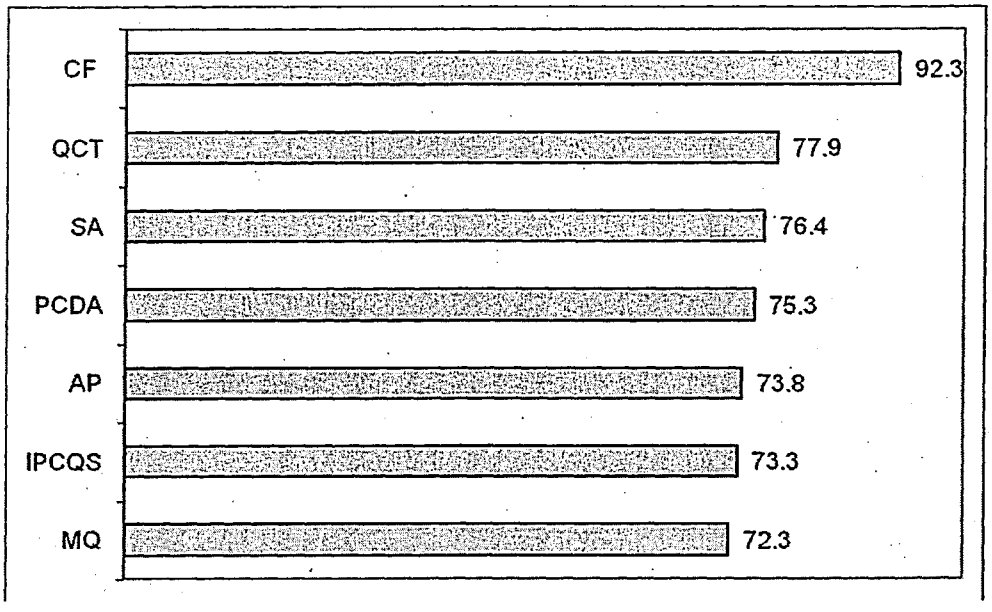

Figure (9.40) Top management priority weights of the proposed framework stages

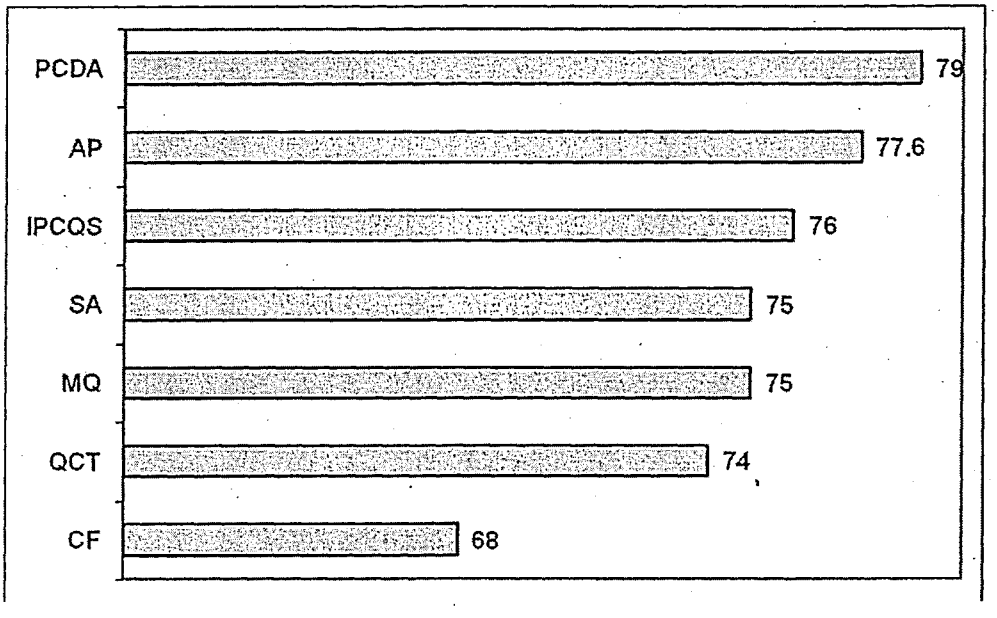

Figure (9.41) Middle management priority weights of the proposed framework stages

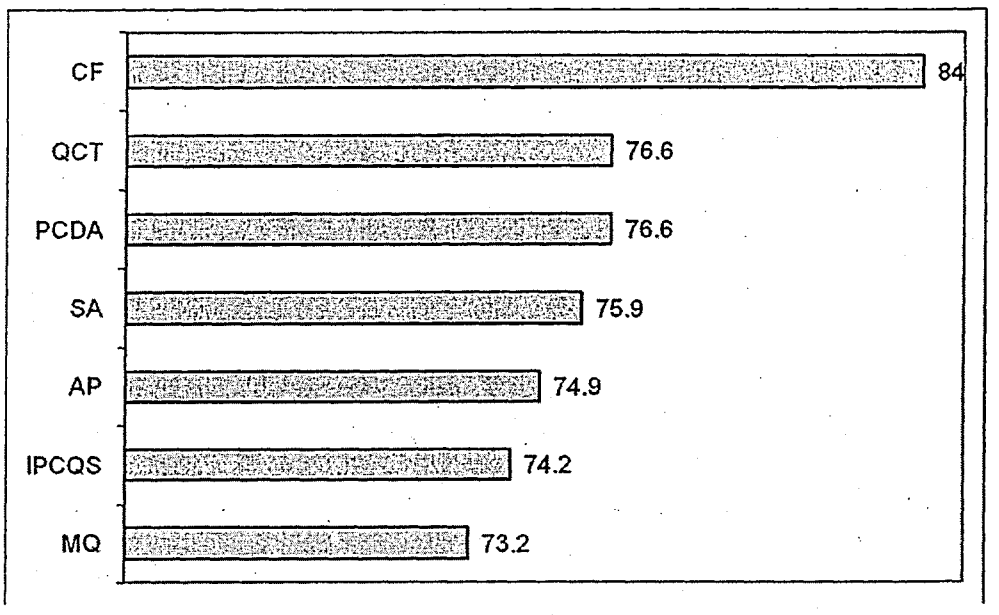

Figure (9.42) The priority weights of the proposed framework stages

It can be seen that the highest priority of the proposed framework stages was the CF with (84%), after that QCT and PCDA at (76.6%), then SA with (75.9%). On the other hand, the lowest priority of the proposed framework stages was MQ at (73.2%).

The results presented and discussed in this section indicated that all of the stages of the proposed framework were generally rated as important by both top and middle management. The high priority reflects that both groups of respondents were of the opinion that the proposed framework stages are important for improving the quality performance of healthcare service in the organisations under investigation.

9.5.5. Analysis of Variance (ANOVA) of the second section of the questionnaire:

The ANOVA test was carried out to find the difference in the mean value of the second section of the questionnaire. Table (9.61) presents that significant information to assess the relationship between the organisations under investigation with regard to TQM. This section consists of thirteen questions while the organisations under investigation consist of eleven organisations. The table below indicates the total differences in the mean value between the respondents in each question at all the organisations under investigation.

Table (9.61) ANOVA results.

		Sum of Squares	df	Mean Square	F	Sig.
Q1	Between Groups	13.819	10	1.382	1.852	.076
	Within Groups	35.808	48	.746		
	Total	49.627	58			
Q2	Between Groups	7.850	10	.785	1.526	.159
	Within Groups	24.692	48	.514		
	Total	32.542	58			
Q3	Between Groups	6.689	10	.669	.818	.613
	Within Groups	39.244	48	.818		
	Total	45.932	58			
Q4	Between Groups	10.833	10	1.083	1.455	.186
	Within Groups	35.744	48	.745		
	Total	46.576	58			
Q5	Between Groups	7.139	10	.714	.805	.625
	Within Groups	42.590	48	.887		
	Total	49.729	58			
Q6	Between Groups	7.622	10	.762	1.458	.185
	Within Groups	25.090	48	.523		
	Total	32.712	58			
Q7	Between Groups	13.718	10	1.372	2.108	.042
	Within Groups	31.231	48	.651		
	Total	44.949	58			
Q8	Between Groups	13.905	10	1.390	2.208	.033
	Within Groups	30.231	48	.630		
	Total	44.136	58			
Q9	Between Groups	9.408	10	.941	1.104	.378
	Within Groups	40.897	48	.852		
	Total	50.305	58			
Q10	Between Groups	10.399	10	1.040	2.869	.007
	Within Groups	17.397	48	.362		

	Total	27.797	58			
Q11	Between Groups	17.215	10	1.722	2.658	.011
	Within Groups	31.090	48	.648		
	Total	48.305	58			
Q12	Between Groups	9.367	10	.937	2.409	.021
	Within Groups	18.667	48	.389		
	Total	28.034	58			
Q13	Between Groups	9.408	10	.941	1.294	.261
	Within Groups	34.897	48	.727		
	Total	44.305	58			

The ANOVA results see Table (9.61) indicated that the most significant of the questions $p > 0.05$, which mean that there is no difference in the level of satisfaction with regard to TQM at all the organisations under investigation. On the other hand, it has been found that questions (7, 8, 10, 11 and 12) with Sig. (.042, .033, .007, .011 and.021) respectively that $p<0.05$ which mean that there is a difference in the mean value between the organisations situation with regard to TQM. Pallant (2007) indicated that the main column of interest is the one marked Sig. If the Sig. value is less than or equal to .05, there is a significant difference someplace between the mean scores on your dependent variable for the three or more levels (groups). He added that you should look at multiple comparisons tables only if you found a significant difference in your overall ANOVA. That is, if the Sig. value was less than or equal to .05. Therefore, Post-Hoc Multiple Comparisons using the least-significant difference (LSD) test from SPSS has been applied for data analysis. The least-significant difference pair-wise comparison makes no attempt to control the Type I error and is equal to performing several t-tests on the data (Field, 2005). This test provided in Table (9.62) below indicated that pair-wise comparison between the organisations under investigation with regard to these questions, which the Sig. value is less than .05. It has been found that some stars (*) on the column

labelled Mean Difference, which mean that the two organisations being compared are significantly different from one another at the $p<0.05$ levels. The exact significance value is given in the column labelled Sig. The results indicated that the organisations below that have stars (*) on the column labelled Mean Difference are statistically significantly different from one another.

Table (9.62) Multiple Comparisons

LSD

Dependent Variable	(I) Organisation	(J) Organisation	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
Q7	1.00	10.00	2.00000(*)	.80662	.017	.3782	3.6218
		11.00	1.38462(*)	.58481	.022	.2088	2.5605
	2.00	10.00	2.00000(*)	.80662	.017	.3782	3.6218
		11.00	1.38462(*)	.58481	.022	.2088	2.5605
	7.00	10.00	2.00000(*)	.80662	.017	.3782	3.6218
		11.00	1.38462(*)	.58481	.022	.2088	2.5605
	10.00	1.00	-2.00000(*)	.80662	.017	-3.6218	-.3782
		2.00	-2.00000(*)	.80662	.017	-3.6218	-.3782
		7.00	-2.00000(*)	.80662	.017	-3.6218	-.3782
	11.00	1.00	-1.38462(*)	.58481	.022	-2.5605	-.2088
		2.00	-1.38462(*)	.58481	.022	-2.5605	-.2088
		7.00	-1.38462(*)	.58481	.022	-2.5605	-.2088
Q8	1.00	5.00	2.00000(*)	.79360	.015	.4044	3.5956
		10.00	2.00000(*)	.79360	.015	.4044	3.5956
		11.00	1.38462(*)	.57537	.020	.2278	2.5415
	4.00	5.00	2.00000(*)	.79360	.015	.4044	3.5956
		10.00	2.00000(*)	.79360	.015	.4044	3.5956
		11.00	1.38462(*)	.57537	.020	.2278	2.5415
	5.00	1.00	-2.00000(*)	.79360	.015	-3.5956	-.4044
		4.00	-2.00000(*)	.79360	.015	-3.5956	-.4044
		7.00	-2.00000(*)	.79360	.015	-3.5956	-.4044
	7.00	5.00	2.00000(*)	.79360	.015	.4044	3.5956
		10.00	2.00000(*)	.79360	.015	.4044	3.5956
		11.00	1.38462(*)	.57537	.020	.2278	2.5415

	10.00	1.00	-2.00000(*)	.79360	.015	-3.5956	-.4044
		4.00	-2.00000(*)	.79360	.015	-3.5956	-.4044
		7.00	-2.00000(*)	.79360	.015	-3.5956	-.4044
	11.00	1.00	-1.38462(*)	.57537	.020	-2.5415	-.2278
		4.00	-1.38462(*)	.57537	.020	-2.5415	-.2278
		7.00	-1.38462(*)	.57537	.020	-2.5415	-.2278
Q10	1.00	2.00	2.00000(*)	.60204	.002	.7895	3.2105
		3.00	2.00000(*)	.60204	.002	.7895	3.2105
		4.00	2.00000(*)	.60204	.002	.7895	3.2105
		5.00	1.50000(*)	.60204	.016	.2895	2.7105
		8.00	2.00000(*)	.60204	.002	.7895	3.2105
		9.00	2.00000(*)	.60204	.002	.7895	3.2105
		10.00	1.50000(*)	.60204	.016	.2895	2.7105
		11.00	1.71795(*)	.43648	.000	.8403	2.5956
	2.00	1.00	-2.00000(*)	.60204	.002	-3.2105	-.7895
		6.00	-1.50000(*)	.60204	.016	-2.7105	-.2895
	3.00	1.00	-2.00000(*)	.60204	.002	-3.2105	-.7895
		6.00	-1.50000(*)	.60204	.016	-2.7105	-.2895
	4.00	1.00	-2.00000(*)	.60204	.002	-3.2105	-.7895
		6.00	-1.50000(*)	.60204	.016	-2.7105	-.2895
	5.00	1.00	-1.50000(*)	.60204	.016	-2.7105	-.2895
	6.00	2.00	1.50000(*)	.60204	.016	.2895	2.7105
		3.00	1.50000(*)	.60204	.016	.2895	2.7105
		4.00	1.50000(*)	.60204	.016	.2895	2.7105
		8.00	1.50000(*)	.60204	.016	.2895	2.7105
		9.00	1.50000(*)	.60204	.016	.2895	2.7105
		11.00	1.21795(*)	.43648	.008	.3403	2.0956
	8.00	1.00	-2.00000(*)	.60204	.002	-3.2105	-.7895
		6.00	-1.50000(*)	.60204	.016	-2.7105	-.2895
	9.00	1.00	-2.00000(*)	.60204	.002	-3.2105	-.7895
		6.00	-1.50000(*)	.60204	.016	-2.7105	-.2895
	10.00	1.00	-1.50000(*)	.60204	.016	-2.7105	-.2895
	11.00	1.00	-1.71795(*)	.43648	.000	-2.5956	-.8403
		6.00	-1.21795(*)	.43648	.008	-2.0956	-.3403
Q11	1.00	5.00	2.00000(*)	.80480	.016	.3818	3.6182
		11.00	1.43590(*)	.58349	.018	.2627	2.6091
	2.00	5.00	2.00000(*)	.80480	.016	.3818	3.6182

		11.00	1.43590(*)	.58349	.018	.2627	2.6091
	3.00	5.00	2.00000(*)	.80480	.016	.3818	3.6182
		11.00	1.43590(*)	.58349	.018	.2627	2.6091
	5.00	1.00	-2.00000(*)	.80480	.016	-3.6182	-.3818
		2.00	-2.00000(*)	.80480	.016	-3.6182	-.3818
		3.00	-2.00000(*)	.80480	.016	-3.6182	-.3818
		8.00	-2.00000(*)	.80480	.016	-3.6182	-.3818
	8.00	5.00	2.00000(*)	.80480	.016	.3818	3.6182
		11.00	1.43590(*)	.58349	.018	.2627	2.6091
	11.00	1.00	-1.43590(*)	.58349	.018	-2.6091	-.2627
		2.00	-1.43590(*)	.58349	.018	-2.6091	-.2627
		3.00	-1.43590(*)	.58349	.018	-2.6091	-.2627
		8.00	-1.43590(*)	.58349	.018	-2.6091	-.2627
Q12	1.00	2.00	2.00000(*)	.62361	.002	.7461	3.2539
		3.00	2.00000(*)	.62361	.002	.7461	3.2539
		4.00	2.00000(*)	.62361	.002	.7461	3.2539
		5.00	1.50000(*)	.62361	.020	.2461	2.7539
		7.00	1.50000(*)	.62361	.020	.2461	2.7539
		8.00	2.00000(*)	.62361	.002	.7461	3.2539
		9.00	2.00000(*)	.62361	.002	.7461	3.2539
		10.00	1.50000(*)	.62361	.020	.2461	2.7539
		11.00	1.66667(*)	.45212	.001	.7576	2.5757
	2.00	1.00	-2.00000(*)	.62361	.002	-3.2539	-.7461
		6.00	-1.50000(*)	.62361	.020	-2.7539	-.2461
	3.00	1.00	-2.00000(*)	.62361	.002	-3.2539	-.7461
		6.00	-1.50000(*)	.62361	.020	-2.7539	-.2461
	4.00	1.00	-2.00000(*)	.62361	.002	-3.2539	-.7461
		6.00	-1.50000(*)	.62361	.020	-2.7539	-.2461
	5.00	1.00	-1.50000(*)	.62361	.020	-2.7539	-.2461
	6.00	2.00	1.50000(*)	.62361	.020	.2461	2.7539
		3.00	1.50000(*)	.62361	.020	.2461	2.7539
		4.00	1.50000(*)	.62361	.020	.2461	2.7539
		8.00	1.50000(*)	.62361	.020	.2461	2.7539
		9.00	1.50000(*)	.62361	.020	.2461	2.7539
		11.00	1.16667(*)	.45212	.013	.2576	2.0757
	7.00	1.00	-1.50000(*)	.62361	.020	-2.7539	-.2461
	8.00	1.00	-2.00000(*)	.62361	.002	-3.2539	-.7461
		6.00	-1.50000(*)	.62361	.020	-2.7539	-.2461

	9.00	1.00	-2.00000(*)	.62361	.002	-3.2539	-.7461
		6.00	-1.50000(*)	.62361	.020	-2.7539	-.2461
	10.00	1.00	-1.50000(*)	.62361	.020	-2.7539	-.2461
	11.00	1.00	-1.66667(*)	.45212	.001	-2.5757	-.7576
		6.00	-1.16667(*)	.45212	.013	-2.0757	-.2576

* The mean difference is significant at the .05 level.

9.5.6. Analysis of Variance (ANOVA) of the third section of questionnaire:

The ANOVA test carried out to find the difference in the mean value for the importance of the proposed framework factors at all the organisations under investigation.

Table (9.63) presents significant information to assess the relationship between the proposed framework factors and the organisations under investigation. The proposed framework factors consist of twelve factors while the organisations under investigation are eleven organisations. The table below indicate the total differences in the mean value between the proposed framework factors at all the organisations under investigation.

Table (9.63) ANOVA results

		Sum of Squares	df	Mean Square	F	Sig.
Vision	Between Groups	4.460	10	.446	.731	.691
	Within Groups	29.269	48	.610		
	Total	33.729	58			
Mission	Between Groups	3.700	10	.370	.595	.810
	Within Groups	29.859	48	.622		
	Total	33.559	58			
Strategy	Between Groups	5.228	10	.523	1.001	.456
	Within Groups	25.077	48	.522		
	Total	30.305	58			
Communication	Between Groups	9.242	10	.924	1.507	.166
	Within Groups	29.436	48	.613		
	Total	38.678	58			
Empowerment	Between Groups	6.452	10	.645	1.182	.326
	Within Groups	26.192	48	.546		
	Total	32.644	58			

Trust	Between Groups	8.148	10	.815	1.147	.349
	Within Groups	34.090	48	.710		
	Total	42.237	58			
Team.D	Between Groups	7.215	10	.721	1.349	.233
	Within Groups	25.667	48	.535		
	Total	32.881	58			
Leadership	Between Groups	9.146	10	.915	1.673	.115
	Within Groups	26.244	48	.547		
	Total	35.390	58			
TE	Between Groups	9.264	10	.926	1.823	.082
	Within Groups	24.397	48	.508		
	Total	33.661	58			
FC	Between Groups	11.200	10	1.120	1.771	.092
	Within Groups	30.359	48	.632		
	Total	41.559	58			
PM	Between Groups	7.400	10	.740	1.672	.115
	Within Groups	21.244	48	.443		
	Total	28.644	58			
CI	Between Groups	5.136	10	.514	.933	.512
	Within Groups	26.423	48	.550		
	Total	31.559	58			

The ANOVA results see Table (9.63) indicated that the Significant value of all factors >0.05, therefore there is no difference in the mean value for the importance of the proposed framework factors at all the organisations under investigation. This infers strong agreement between all respondents on the importance of the proposed framework factors for improving the quality performance of healthcare service in the organisations under investigation.

9.5.7. Analysis of Variance (ANOVA) of the fourth section of the questionnaire:

It might be important to test the difference in the level of satisfaction with regard to the importance of the proposed framework stages at all the organisations under investigation. Table (9.64) presents significant information to assess the relationship between the proposed framework stages and the organisations under investigation. The proposed

framework factors consist of seven stages while the organisations under investigation consist of eleven organisations. The Table below indicate the total differences in the mean value between the proposed framework stages at all the organisations under investigation.

Table (9.64) ANOVA results.

		Sum of Squares	df	Mean Square	F	Sig.
AP	Between Groups	6.251	10	.625	1.433	.195
	Within Groups	20.936	48	.436		
	Total	27.186	58			
QCT	Between Groups	15.869	10	1.587	2.348	.024
	Within Groups	32.436	48	.676		
	Total	48.305	58			
IPCQS	Between Groups	8.435	10	.844	1.279	.269
	Within Groups	31.667	48	.660		
	Total	40.102	58			
CF	Between Groups	7.162	10	.716	.774	.652
	Within Groups	44.397	48	.925		
	Total	51.559	58			
MQ	Between Groups	8.784	10	.878	1.595	.137
	Within Groups	26.436	48	.551		
	Total	35.220	58			
SA	Between Groups	7.123	10	.712	1.293	.261
	Within Groups	26.436	48	.551		
	Total	33.559	58			
PCDA	Between Groups	6.446	10	.645	1.197	.317
	Within Groups	25.859	48	.539		
	Total	32.305	58			

The ANOVA results see Table (9.64) indicated that the most Significant value of all stages $p > 0.05$, which mean that there is no difference in the level of satisfaction with regard to the importance of the proposed framework stages at all the organisations under investigation. On the other hand, it has been found that at the stage of Quality Circle Team (Sig. = 0.024) that $p<0.05$ which mean that there is a difference in the mean value

between the organisations under investigation with regard to the importance of this stage. Therefore, Post-Hoc Multiple Comparisons using the LSD test from SPSS has been applied for data analysis. This test provided in Table (9.65) below indicated that pair-wise comparisons between the organisations under investigation at the stage of Quality Circle Team which the Sig. value is less than .05. It has been found that some stars (*) on the column labelled Mean Difference, which mean that the two organisations being compared are significantly different from one another at the $p<0.05$ levels. The exact significance value is given in the column labelled Sig. The results indicated that the organisations below are statistically significantly different from one another.

Table (9.65) Multiple Comparisons.

Dependent Variable: QCT
LSD

(I) Organisation	(2) Organisation	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
2.00	3.00	2.00000(*)	.82204	.019	.3472	3.6528
	4.00	2.00000(*)	.82204	.019	.3472	3.6528
	5.00	2.00000(*)	.82204	.019	.3472	3.6528
3.00	2.00	-2.00000(*)	.82204	.019	-3.6528	-.3472
	11.00	-1.41026(*)	.59599	.022	-2.6086	-.2119
4.00	2.00	-2.00000(*)	.82204	.019	-3.6528	-.3472
	11.00	-1.41026(*)	.59599	.022	-2.6086	-.2119
5.00	2.00	-2.00000(*)	.82204	.019	-3.6528	-.3472
	11.00	-1.41026(*)	.59599	.022	-2.6086	-.2119
11.00	3.00	1.41026(*)	.59599	.022	.2119	2.6086
	4.00	1.41026(*)	.59599	.022	.2119	2.6086
	5.00	1.41026(*)	.59599	.022	.2119	2.6086

* The mean difference is significant at the .05 levels.

9.6. Summary:

In this chapter, the data collected from the questionnaire survey was studied and discussed. In addition, the proposed TQM framework and its implementation procedure has been verified and validated. The first section of the questionnaire designed to collect personal information from the respondents and then the second section assessed the organisations situation with regard to TQM and to discovered which factors maybe would barrier the implementation of TQM in Libyan healthcare. In the third section of the questionnaire identified to what extent the proposed framework factors are important for improving the quality performance of healthcare service in the organisations under investigation. In addition, the fourth section of the questionnaire discovered to what extent the proposed framework stages will guide and facilitate successfully the implementation of total quality management in the organisations under investigation. All answers provided by the respondents through the questionnaire were classified and statistical analyses were performed using a statistical package for social sciences (SPSS). Moreover, tests for validity and reliability were carried out. Through the organisations under investigation, it has been confirmed that both the proposed framework factors and stages were important for improving the quality performance of healthcare service. Thus, the proposed framework has been verified and validated by these practitioners. In the next chapter, the conclusion, limitation and recommendation of this study will be provided.

Chapter Ten

Findings, Conclusion, limitation and recommendation

10.1. Introduction:

This chapter provides the findings and conclusion about this research and presents some recommendations. In addition, the limitation and research contributions of the research are given.

10.2. The main findings:

Through this study the following findings have been reached.

10.2.1. The literature findings:

A comprehensive review of the literature has been carried out to find a theory that could be the appropriate method in order to identify the weakness in the current system and achieve performance excellence in the Libyan healthcare sector. It has been found that Total Quality Management (TQM) would provide the solution for this matter. A review of literature to highlight the important features and viewpoints related to implementing TQM in hospitals and health care were performed. In addition, a review of the historic evolution of TQM, its principles, success, barriers and TQM framework were carried out. The literature illustrated that there were many models and frameworks in the field of TQM. However, the quality gurus have never agreed about a specific framework or implementation procedure. In addition, there was a lack of a general model in health care, and no clear agreement as to the way in which TQM should be implemented in a health care sector.

Beside the development of total quality management, many factors and concepts have appeared which are considered an advantage that allows the effective implementation of total quality management for any organisation. The review of the literature also

suggested that there was no general agreement on the factors representing the requirements of total quality management implementation.

10.2.2. The survey findings:

An overview of the Libyan health care services was established and data and information regarding adopted policies, characteristics, difficulties and quality system in the field of healthcare were collected. The following findings could be reported:

10.2.2.1. The first questionnaire findings:

The analytical study of the field research data enabled the author to evaluate the performance of leadership in TQM and to identify the organisational culture that currently exists, it can be said that:

- Method, which is working in the area of quality management in the organisations under investigation, is merely a system of examination and inspection. It is not an advanced system and it does not lead to early detection of corruption and is not encouraging to doing business right from the first time.
- The role of the quality activity is limited for investigation, inspection and supervision to determine the extent to which the work has been performed. In addition, its role includes preparation of the reports on the weaknesses only and as such it does not try to solve those problems in order to avoid them in future and improve the performance.

- No cooperation between those who are responsible of the quality function and other sections and administrations. Thus, the big picture of the people who are responsible for quality as an inspector instead of helping these departments to avoid quality problems.

Currently prevailing organisational culture needs to be addressed to accept the concepts of total quality management and adverse evident from the following:

- The X theory concepts are still acceptable from the leaders of Libyan healthcare organisations, in which they kept practicing their job according to their elements. A Theory X manager believes that his or her employees do not really want to work, that they would rather avoid responsibility. Employees were considered passive because they disliked responsibility and work; they lacked ambition, were resistant to change and preferred to be led (Carson, 2005). Therefore, the administration interfered extensively in details, and this lost the work flexibility and zealousness, thus the work becomes routine.
- The leadership of Libyan healthcare organisations has a fear of taking the responsibility of making changes to create a quality culture, it seems to be absolutely centralised, and still needs to understand the importance of the participation.
- The leadership of Libyan healthcare organisations has a narrower view on quality concept; it believes that only focusing on employees, by emphasis on procedures and blaming them to reduce mistakes could acquire the quality. So in their opinion the employees must be responsible for weakness of quality.

- The leadership of Libyan healthcare sector is positive in some factors, such as the mission and communication with (73.43%) and (53.98%) respectively. However, it is passive from other aspects that need treatment to apply the total quality management. In addition, the management in Libyan healthcare sector has to learn the difference between management and leadership style, as the management style is still following the traditional quality concept.

10.2.2.2. The second questionnaire findings:

The analytical study of the field research data enabled the author to focus on the identification of the best practice of total quality management (TQM) factors that allow these organisations to seize performance excellence and provide a benchmarking tool for these TQM factors. The following can be reported:

- Analytical Hierarchy Process (AHP) was used to implement the proposed performance excellence model which has been validated through questionnaires within healthcare organisations in developing countries and in particular Libyan Healthcare Organisations.
- Nine healthcare organisations were involved in these questionnaires and the proposed AHP model used to provide pair-wise comparison between these organisations and also facilitate carrying out dynamic sensitivity analysis to test the priorities of alternative, if less or more importance is given to a particular criterion. This helps to examine different scenarios and re-addresses the importance of TQM factors in a "what if" approach.

- The decision maker could use the results to establish which factor and which organisation should be improved to realise a competitive advantage.
- With this understanding, healthcare managers will be able to use the results to evaluate their organisations in order to improve areas that require immediate attention.
- The performance measures were compared pair-wise to prioritise TQM factors and to discover which areas require immediate attention on which alternative is more important with respect to performance excellence.
- Leadership was the most important factor with a weight of 0.221 in the second hierarchy level.
- The second important factor in the second hierarchy level was focusing on customers with a weight of 0.209, after that training and education with a weight of 0.20, and then continuous improvement with a weight of 0.188 and finally process and measurement with a weight of 0.182.
- The high priority reflects the importance the role of leadership to create quality culture that focuses on performance excellence.
- The inconsistency ratio (IR) was less than 0.1.
- It has been found that organisation number (9) is the most preferred healthcare organisation for three out of the five selection criteria. These are *leadership* with weight of 0.043, *training and education* with weight of 0.034 and *focus on customer* jointly with organisation number (7) with weight of 0.031.

- The organisation number (7) is most preferred on two out of the five selection criteria. These are *focus on customer* with weight of 0.031 and *continuous improvement* with weight of 0,031.
- The organisation number (9), (7) and (5) is the most preferred healthcare organisation in Tripoli healthcare sector with priority of 0.160, 0.151, and 0.138 respectively.
- Generally, the organisation number (9) is prevailing. The results indicated that the organisation number (9) could do well and even better than other organisations. On the other hand, organisation number (3) is the least preferred with overall weight of 0.068. Thus, these results provide the detailed feature on which each organisation is the most or least preferred, and the areas that require immediate attention.
- Dynamic sensitivity analysis was used to test the variation of alternative priorities and examine different scenarios and re-address the importance of TQM factors in a "what if" approach. In general, the sensitivity analysis indicated that the organisation number (9) is prevailing and the top three most preferred alternatives say their favourite situation in the top. It can be noticed that the top three most preferred organisations are not sensitive to change.
- The decision maker could use these results to establish which factor and which organisation should be improved to realise a competitive advantage.
- With this understanding, the organisations could better position themselves and create strategies to gain a competitive advantage.

10.2.2.3. The third questionnaire findings:

10.2.2.3.1. Part I:

Through the assessment of the organisations considered in this study, the following strength and weakness points could be reported:

The strength points:

- The presence of a desire to change organisation's culture was confirmed by the proportion of (49.2%) of the sample under study.
- The existence of a desire to change the current management of the organisations under investigation, which was confirmed by the proportion of (50.8%) of the sample under study.
- Some of the respondents were convinced that department heads and managers of healthcare organisations were considered effective, which was confirmed by the proportion of (40.7%) of the sample under study.
- The proposed framework will provide the organisations an opportunity to improve the quality of service, which was confirmed by the proportion of (72.9%) of the sample under study.

The weakness points:

- Workers feeling bored and dissatisfied with work by (62.7%).
- Increase rate of absence of workers by (44.1%).
- There are many obstacles that limit the performance of health services, which was confirmed by the proportion (71.2%) of the sample under study.

- Lack of interest in the training of personnel and development opportunities, which was confirmed by the proportion (45.8%) of the sample under study.

10.2.2.3.2. Part II:

It was found that the proposed framework factors are important for improving the quality performance of healthcare service in the organisations under investigation with the following evidences:

- The highest level of importance of the proposed framework factors was *empowerment* with (89.1%), followed by *vision* and *leadership* with (78.6%) and (77.9%) respectively.
- The lowest level of importance of the proposed framework factors was *processes and measurement* with (70.8%).
- The results presented and discussed in this section indicated that all of the factors of the proposed framework were rated as important by both top and middle management.
- The high priority reflects that both groups of respondents were of the opinion that the proposed framework factors are important for improving the quality performance of healthcare service in the organisations under investigation.

10.2.2.3.3. Part III:

It has been discovered that the proposed framework stages are important to successfully guide and facilitate the implementation of total quality management in the organisations under investigation with the following evidences:

- The highest level of the proposed framework stages was (84%) performable by the selected stage of the factors to be evaluated, after that Quality Circles Team and Plan-Do-Check-Act stage at (76.6%), then Sensitivity Analysis with (75.9%).
- The lowest level of the proposed framework stages was (73.2%) performable by the stage of measuring the quality service.
- The results presented and discussed in this section indicated that all of the stages of the proposed framework were generally rated as important by both top and middle management.
- The high priority reflects that both groups of respondents were of the opinion that the proposed framework stages are important for improving the quality performance of healthcare service in the organisations under investigation.

10.3. Conclusion:

Libya witness rapid essential changes, represented by the gradual withdrawal of public sector for the interest of private sector. In addition there is strong competition from the public sector in the market. However, the reality of government hospitals in Libya is that: they are facing many problems opposing their improvement, continuity and ability to compete, which results in creating social and economical environment, requiring putting into consideration and preparation to lay down legislations for achieving performance excellence. The importance of this study was to identify an appropriate TQM framework for Libyan healthcare organisations and benchmarking them and distinguishing their competitive advantage.

According to the literature, there is no general agreement on the factors representing the requirements of total quality management implementation. Some obtain only five factors, others see them as only seven factors, and some go even further to more and more. However, the difference in numbers is not a major disagreement in the matter. In addition, there is no-one-size-fits-all model. As mentioned earlier, several aspects of culture differ very much from one quality-oriented company to another. However, the proposed framework meets with some models or frameworks in some stages or factors; for example, this framework fits with Quality in Daily Work (QIDW), which has been implemented at Bellin Hospital in Green Bay, Wisconsin, USA, by taking the Juran trilogy and dividing it into sequential elements, quality planning, quality control and quality improvement. In addition, this framework used the PDCA cycle, adopted by many researchers such as the framework for excellence model developed by Lee (2002) who is based on Singapore Quality Award framework (SQA). Likewise, this framework used analytic hierarchy process (AHP), which meets with Chin et al, (2002) who developed a hierarchy model using the AHP to prioritise the critical factors and formulate strategies to implement TQM in Shangai and other cities in China, to assist organisations to identify the differences between the desired and current situations, and then identify the improvement areas and develop the strategies for the TQM implementation. Moreover, the framework indicated that leadership, customer focus, measurement and continuous improvement cycle are an essential component to the success of TQM, which; agree with Kanji and Asher (1996) who developed a structured framework called the Pyramid Model for TQM.

This research focused on the changes taking place in quality systems in Libya as part of a comprehensive and broad ranging reform programme aimed at developing a health system able to provide high quality health services to the Libyan people. Therefore, a comprehensive literature review related to TQM was carried out to have a clear insight into the TQM and its application in health service. A questionnaire survey method was adopted to gather the data and information, which form the basis for the development of the proposed TQM framework. In addition, in order to achieve the aim of this study two models were developed. Moreover, this study provided steps and stages of the proposed TQM framework which start from awareness of top management and of the need to change and to the continuous improvement. Through the organisations under investigation, it has been confirmed that both the proposed framework factors and stages are important for improving the quality performance of healthcare service. Thus, the proposed framework has been verified and validate by these practitioners. Finally, the aim of this research has been achieved through the following objectives:

- Review the current healthcare system in Libya.
- Review the literature comprehensively to identify and develop appropriate research method(s) in order to identify the weakness in the current system and help in developing and justifying the proposed framework.
- Assess the current organisational culture in Libyan healthcare through questionnaires and interviewees.
- Develop a TQM framework that is appropriate for Libyan healthcare and ensure that the developed framework fits into the Libyan culture aspect.

- Provide an implementation procedure for the proposed TQM framework and the skills required to successfully implement changes.
- Propose a set of recommendation for continuous improvement.

10.4. The Research Limitation:

The researcher has chosen Tripoli City only to be his case study hoping that studies will subsequently be repeated in other cities. Since there were no similar studies (according to the full knowledge of the researcher) conducted in Tripoli Healthcare Sector, it is expected that the results may have good impact on a broader scale in Libyan healthcare sector. By replicating this study in different cities in Libya, healthcare managers will be able to use these results to face the challenges for Libyan Healthcare Sector in order to improve their performance in terms of quality care, and reaching an excellent performance level involved at all management levels.

The researcher thinks that this research could contribute in the satisfaction of the aforesaid needs.

10.5. Research contributions:

According to the available literature and based on the researcher's many visits to the organisations under investigation and also based on Juran trilogy, Deming's wheel of Plan-Do-Check-Act cycle and the policy of Libyan healthcare, TQM framework for achieving performance excellence in Libyan healthcare organisations was developed. The proposed framework can be used for:

- Developing a new system to measure performance in Libyan healthcare.

- Continuous improvement.
- Identifying a culture that strongly focuses on quality performance.
- Helping in developing and modernising service performance measures.
- Benchmarking the performance between Libyan healthcare organisations with a view to clarifying which organisation is out performed with respect to the identified TQM factors. This helped in identifying the areas that require immediate attention.

The key achievements of this research are:

- Presented and documented on the intellectual and philosophical frames of TQM and performance excellence.
- Identified Libyan healthcare policies and problems in the current quality system.
- Identified the strengths and weakness points of leadership in Libyan healthcare organisations, which helped in creating the organisational culture that is required for implementation of TQM.
- Identified best practices of TQM factors that allow Libyan healthcare organisations to seize performance excellence.
- In order to achieve the aim of this study two models were developed. The first model was developed to evaluate the performance of leadership in TQM and to identify the organisational culture that currently exists.
- The second model focused on the identification of the best practice of TQM factors that allow these organisations to seize performance excellence and provide a benchmarking tool for these TQM factors. The main deliverables were to identify best practices of TQM factors with respect to excellence performance in

Libyan healthcare organisations and benchmarking the performance between Libyan healthcare organisations with a view to clarify which organisation was out performed with respect to the identified TQM factors.

- The decision maker could use the results to establish which factor and which organisation should be improved to realise a competitive advantage.
- Healthcare managers will be able to use the results to evaluate their organisations in order to improve areas that require immediate attention.
- Verified/validated the proposed TQM framework and its implementation procedure.
- A set of recommendation for continuous improvement.

10.6. Recommendation and Further Research:

This research focused on the changes taking place in quality systems in Libya as part of a comprehensive and broad ranging reform programme aimed at developing a health system able to provide high quality health services to the Libyan people.

Further studies could be carried out to implement the proposed TQM framework for different sectors in developing countries in general and Libyan organisations in particular. This would provide further insight into the organisations problems, and the needs of TQM implementation. In addition, similar studies could be implemented in different healthcare organisations in Libya in order to provide high quality health services to the Libyan population. The core value to be achieved by organisations could be different due to different location of these organisations.

In addition, the proposed framework could be easily applied in different sectors but in this case some factors in each stage of the proposed framework need to be adapted slightly to reflect the nature of the sector. In relation to implementation, it should be quite similar to the proposed implementation procedure mention in chapter 8.

Based on previous results the researcher proposes the following recommendations:

- Adaptation and preparation for the implementation of the proposed framework in order to change the characteristics of quality systems applied in healthcare organisations.

The implementation of the proposed TQM framework in healthcare sector requires:

- Full understanding and commitment by the Director of Healthcare Sector, and managers at all the levels of healthcare organisations.
- Promote organisational culture change in the healthcare sector down to the level of healthcare organisations.
- Continuing education and training for all individuals.
- Coordination and activating the communication between people at all levels in the organisations under investigation.
- The participation of all parties and all individuals involved in efforts to improve the quality of the health process.
- Establishment of an information system for quality management at the healthcare sector and healthcare organisations.
- Support and encouragement of scientific research to promote healthcare system and to secure financing sources for that.

- Support and encouragement to attract national qualified elements for preliminary healthcare.
- Support of joint work between different sectors relating to health and coordination between all parties.

The adoption of the proposed TQM in the healthcare sector is not as simple as it seems to be. Providing health services for people requires different procedures and culture change. Moreover, this system may face many difficulties and barriers as follows: -

- This system needs full commitment from every one. The change of leaders and managers every year may lead to the collapse of this system.
- Some employees do not understand what TQM means.
- Absence of training programmes for employees to implement quality concept.
- Implementation of the system requires the change of many policies and procedures adopted in health sector.
- Absence of actual steps to carry out the quality management system.
- Researcher finds the need to consider the principle of participation of workers in decision-making related to providing health services of the reduction of social and economic impacts resulting bad to provide medical services.
- Researcher recommends the need to rethink the laws enacted by state and tangible incentives for workers in the health sector and the need to pass a law to consider the salaries and the current conditions for the healthcare organisations workers.

- Attention and focus on the managers of healthcare organisations by training and education, and considering the principle of specialisation (hospital management) and knowledge of the responsibilities, managerial duties, and limits of authority within healthcare organisations.
- Interest in providing expertise and medical personnel through joint cooperation with the World hospitals and focus on continuous training of human resources in global institutions and the establishment of refresher courses and rehabilitative either at home or abroad.
- Commitment to develop clear strategic plans for the health sector and trying to reduce the travel of citizens for treatment abroad.

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APPENDICES

Appendix 1

Brothers the employees of organisations under investigation: -

This questionnaire is a study provided for the purpose of being granted PhD degree in Total Quality Management from Sheffield Hallam University. The aim of this research is to develop an appropriate TQM framework for achieving performance excellence in Libyan healthcare organisations and benchmarking them and distinguished their competitive advantage. It is an attempt to see how employees of these organisations recognise the importance of total quality management.

The researcher desires to direct some questions to you hoping that you will kindly answer and cooperate with him and he will also promise you that all the information you provide are only for the purpose of this research and will totally be confidential.

Thank you for co-operation.

Fakhureldein Abdelmotleb

Sheffield Hallam University

Personal Data

Gender: Female ☐ Male ☐

Age: 18-25 ☐ 26-40 ☐ 41-65 ☐

Qualification: Postgraduate ☐ Graduate ☐ Other ☐

Management Level: Top Management ☐ Middle Management ☐

Lower Management ☐

Name of organisation: -.....

Please, indicate your agreement/disagreement with the following statement:
(Please, select just one square for each statement)

-Vision

The extent to which:

Leaders know that vision is the ability to make the change and empowers staff to see the direction they are going and encourage them to help the department get there. Therefore, your organisation has clear vision, which you can realise and imagine what can be achieved, and how to do it.

	100%		80%		60%		40%		20%
Strongly agree	☐	Agree	☐	Neutral	☐	Disagree	☐	Strongly disagree	☐

-Mission

The extent to which:

Employees have clear idea about the mission of the organisation. They know that who the customers are; how the organisation desires to be identified; the organisation's goals, and the suitable strategy for their services.

	100%		80%		60%		40%		20%
Strongly agree	☐	Agree	☐	Neutral	☐	Disagree	☐	Strongly disagree	☐

-Strategy

The extent to which:

Leaders review organisational performance and strategies for customer satisfaction. They know how to find customers wishes and they have ability to realise how the organisation could be changed in the future.

	100%		80%		60%		40%		20%
Strongly agree	☐	Agree	☐	Neutral	☐	Disagree	☐	Strongly disagree	☐

-Communication

The extent to which:

Leaders believe in mutual communication, respect, teamwork and putting the employee's requirements as priorities that could be good method for motivation.

	100%		80%		60%		40%		20%
Strongly agree	☐	Agree	☐	Neutral	☐	Disagree	☐	Strongly disagree	☐

-Empowerment

The extent to which:

Leaders recognise that the goal of empowerment is to create many leaders at all levels in the organisation. In addition, they know that the employees are not naturally passive, but they have ability and desire to carry out the responsibility. Therefore leaders encourage them to share decision-making.

	100%		80%		60%		40%		20%
Strongly agree	☐	Agree	☐	Neutral	☐	Disagree	☐	Strongly disagree	☐

-Trust.

The extent to which:

Leaders recognise that trust is perceived as honesty, sincerity and reliability, which is a natural and essential relation. Therefore, they know that total transformation to quality requires trust, effort and cooperation among all management levels and this may be will take several years and not many months.

	100%		80%		60%		40%		20%
Strongly agree	☐	Agree	☐	Neutral	☐	Disagree	☐	Strongly disagree	☐

-Team development

The extent to which:

Leaders realise that sharing responsibility, decentralisation of power and allowing others to solve the problem as the actual target in Libyan healthcare organisation. Therefore, they think that continuous improvement is everyone's responsibility.

	100%		80%		60%		40%		20%
Strongly agree	☐	Agree	☐	Neutral	☐	Disagree	☐	Strongly disagree	☐

Appendix 2

Please, indicate your agreement/disagreement with the following statement:

(Please, select just one number for each statement)

Very much Very little Very much

9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9

1-Which alternative, leadership or Training and Education, is more important with respect to performance excellence, and by what scale (1 to 9)?

Leadership Training and Education

9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9

2-Which alternative, leadership or Focus on Customer, is more important with respect to performance excellence, and by what scale (1 to 9)?

Leadership Focus on Customer

9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9

3-Which alternative, leadership or process and measurement, is more important with respect to performance excellence, and by what scale (1 to 9)?

Leadership process and measurement

9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9

4-Which alternative, leadership or continuous improvement, is more important with respect to performance excellence, and by what scale (1 to 9)?

Leadership continuous improvement

9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9

5-Which alternative, Training and Education or Focus on Customer, is more important with respect to performance excellence, and by what scale (1 to 9)?

Training and Education Focus on Customer

9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9

6-Which alternative, Training and Education or process and measurement, is more important with respect to performance excellence, and by what scale (1 to 9)?

Training and Education process and measurement

9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9

7-Which alternative, Training and Education or continuous improvement, is more important with respect to performance excellence, and by what scale (1 to 9)?

Training and Education continuous improvement

9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9

8-Which alternative, Focus on Customer or process and measurement, is more important with respect to performance excellence, and by what scale (1 to 9)?

Focus on Customer process and measurement

9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9

9-Which alternative, Focus on Customer or continuous improvement, is more important with respect to performance excellence, and by what scale (1 to 9)?

Focus on Customer continuous improvement

9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9

10-Which alternative, process and measurement or continuous improvement, is more important with respect to performance excellence, and by what scale (1 to 9)?

Process and measurement continuous improvement

9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9

Please, indicate your agreement/disagreement with the following statement. Please, select just one number for each statement.

Very much ← Very little → Very much

9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9

Which alternative, is more performed with respect to leadership, and by what scale (1 to 9)

Organisation 1	Relative Performance	Organisation 2
Goatalshaal clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	2 March clinic
Goatalshaal clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Shohada alshat clinic
Goatalshaal clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Albadre clinic
Goatalshaal clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Aynzara
Goatalshaal clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Aldhra
Goatalshaal clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Bab bengasheer
Goatalshaal clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Old city
Goatalshaal clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Abosalem centre
2 March clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Shohada alshat clinic
2 March clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Albadre clinic
2 March clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Aynzara
2 March clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Aldhra
2 March clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Bab bengasheer
2 March clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Old city
2 March clinic	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Abosalem centre

Organisation 1	Relative Performance																	Organisation 2
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Albadre clinic
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Abadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Adhra
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer

Organisation 1	Relative Performance																	Organisation 2
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Aldhra	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Aldhra	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Aldhra	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Bab bengasheer	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Bab bengasheer	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Old city	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre

Which alternative, is more performed with respect to Training and Education, and by what scale (1 to 9)

Organisation 1	Relative Performance																	Organisation 2
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	2 March clinic
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Shohada alshat clinic
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Albadre clinic
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Shohada alshat clinic
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Albadre clinic
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre

Organisation 1	Relative Performance																	Organisation 2
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Albadre clinic
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Abadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Adhra
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer

Organisation 1	Relative Performance																	Organisation 2
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Aldhra	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Aldhra	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Aldhra	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Bab bengasheer	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Bab bengasheer	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Old city	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre

Which alternative, is more performed with respect to Focus on Customer, and by what scale (1 to 9)

Organisation 1	Relative Performance																	Organisation 2
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	2 March clinic
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Shohada alshat clinic
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Albadre clinic
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Shohada alshat clinic
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Albadre clinic
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre

Organisation 1	Relative Performance																	Organisation 2
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Albadre clinic
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Abadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Adhra
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer

Organisation 1	Relative Performance																	Organisation 2
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Aldhra	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Aldhra	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Aldhra	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Bab bengasheer	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Bab bengasheer	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Old city	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre

Which alternative, is more performed with respect to process and measurement, and by what scale (1 to 9)

Organisation 1	Relative Performance																	Organisation 2
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	2 March clinic
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Shohada alshat clinic
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Albadre clinic
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Shohada alshat clinic
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Albadre clinic
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre

Organisation 1	Relative Performance																	Organisation 2
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Albadre clinic
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Abadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Adhra
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer

Organisation 1	Relative Performance	Organisation 2
Aynzara	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Old city
Aynzara	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Abosalem centre
Aldhra	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Bab bengasheer
Aldhra	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Old city
Aldhra	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Abosalem centre
Bab bengasheer	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Old city
Bab bengasheer	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Abosalem centre
Old city	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Abosalem centre

Which alternative, is more performed with respect to Continuous Improvement, and by what scale (1 to 9)

Organisation 1	Relative Performance																	Organisation 2
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	2 March clinic
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Shohada alshat clinic
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Albadre clinic
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Goatalshaal clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Shohada alshat clinic
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Albadre clinic
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
2 March clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre

Organisation 1	Relative Performance																	Organisation 2
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Albadre clinic
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Shohada al shat clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Abadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aynzara
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Adhra
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Old city
Albadre clinic	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Abosalem centre
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Aldhra
Aynzara	9	8	7	6	5	4	3	2	1	2	3	4	5	6	7	8	9	Bab bengasheer

Organisation 1	Relative Performance	Organisation 2
Aynzara	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Old city
Aynzara	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Abosalem centre
Aldhra	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Bab bengasheer
Aldhra	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Old city
Aldhra	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Abosalem centre
Bab bengasheer	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Old city
Bab bengasheer	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Abosalem centre
Old city	9 8 7 6 5 4 3 2 1 2 3 4 5 6 7 8 9	Abosalem centre

Appendix 3

Section (1):

Personal Data

Gender: Female ☐ Male ☐

Age: 18-25 ☐ 26-40 ☐ 41-65 ☐

Qualification: Postgraduate ☐ Graduate ☐ Other ☐

Management Level: Top Management ☐ Middle Management ☐

Lower Management ☐

Section (2): The second section of the questionnaire designed to assess the organisations situation with regard to TQM and to discover which factors maybe would bar the implementation of TQM in the healthcare sector.

1-The healthcare organisation works to provide preferential medical services.

Agree	Neutral	Disagree
☐	☐	☐

2 - There are some barriers that could be limited the performance of health services.

Agree	Neutral	Disagree
☐	☐	☐

3- Department heads and managers of healthcare organisations are considered effective.

Agree	Neutral	Disagree
☐	☐	☐

4- There are a lot of absence cases for workers in healthcare during the months of the year.

Agree	Neutral	Disagree
☐	☐	☐

5- Healthcare administration always provides an opportunity for training at home and abroad.

Agree	Neutral	Disagree
☐	☐	☐

6. Workers feel bored and the dissatisfaction with the work.

Agree	Neutral	Disagree
☐	☐	☐

7-There is a great desire to change the currently plans in healthcare sector.

Agree	Neutral	Disagree
☐	☐	☐

8-There is a desire to change the current management system of the healthcare organisations.

Agree	Neutral	Disagree
☐	☐	☐

9- Healthcare organisation operates efficiently at the present time.

Agree	Neutral	Disagree
☐	☐	☐

10- Do you think employ consultants (coordinator of quality) will help to ensure successful implementation of the proposed framework?

Agree	Neutral	Disagree
☐	☐	☐

11- The current management system of the healthcare organisations hasn't implemented TQM system yet and therefore, there is a desire to implement it in order to improve the performance of health services.

Agree	Neutral	Disagree
☐	☐	☐

12- Do you think the proposed framework will provide your organisation chance to improve quality service?

Agree	Neutral	Disagree
☐	☐	☐

13-How long do you think the implementation of the proposed framework expected to take?

1-2 Year	2-3 Years	No comment
☐	☐	☐

<u>Section (3):</u> The third section of the questionnaire designed to identify to what extent the proposed framework factors are important for improving the quality performance of healthcare service in the organisations under investigation.

Please select just one square for each statement:

1-Your organisation must have clear vision to make the change and empowers staff to see the direction they are going and encourage them to help the department get there.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

2- Your organisation must have clear mission to identify the organisation's goals, and the appropriate strategy for their services.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

3- Your organisation must have clear strategies for customer satisfaction and how the organisation could be changed in the future.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

4- Your organisation must have a proper communication system at all levels to address the employee's requirements as priorities. This could be a good method for motivation.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

5- Your organisation must recognise that the goal of empowerment is to create many leaders at all levels in the organisation.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

6- Your organisation must recognise that the total transformation to quality requires trust, effort and cooperation among all management levels.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

7- Your organisation must recognise that the team development very important in order to sharing responsibility, and allowing others to solve the problem.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

8- Your organisation must recognise that strong leadership and commitment will bring significant successes. On the other hand, weak leadership may bring partial or total failure. Therefore, Leaders must take part as role models in the creation of strategies, systems, and methods for achieving excellence in quality.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

9- In your organisation each employee should be provided with the necessarily training and education, which is one of the important TQM requirements.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

10- Your organisation should recognise that customer focus must be the whole goal of all quality implementation.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

11- Your organisation must recognise that using the criteria for measuring the services is for prevention purposes and make proactive decision before mistakes take place. This should ensure that management is focused on the improvement of all processes within the organisation.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

12- Your organisation must recognise that continuous improvement means the acceptance of additional small gains as a step in towards total quality management. In addition, improving performance, productivity and efficiency in the use of all resources should be the goals of continuous improvement of all processes, and the work of each of the organisation's activities.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

Section (4): The fourth section of the questionnaire designed to discover to what extent the proposed framework stages will guide and facilitate successfully the implementation of total quality management in the organisations under investigation.

Please, select just one square for each statement:

1- Adaptation and preparation: This stage is to convince the administration to adopt the philosophy of total quality management by highlighting the important features and perspectives related to implementing TQM in hospitals and healthcare. At the same time managers obtain the required training programmes that help them to know how to formulate the vision and objectives of the organisation and allocate the necessary resources.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

2- Quality Circles Team: it is a people-building philosophy, providing self-motivation and happiness in improving situation without any force or financial benefits. Thus, it's necessary to create Quality Circles Team, which will be responsible for improving quality in Libyan Healthcare Sector

100%	80%	60%	40%	20%
Very Important	Important	Uncertain	Not important	Not important at all
☐	☐	☐	☐	☐

3- Identify the problem in the current quality system: At this stage, data and information about policies, features, difficulties and quality system in the field of healthcare should be collected in order to identify the problems in the current quality system.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

4- Select the factors to be evaluated: At this stage, the selection should be based on the information collected in the last two stages, which include the difficulties in the quality system and the areas that require immediate attention.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

5- A new system for discussion and evaluation of the performance: At this stage, should measure the performance excellence to identify the strengths and weakness points of leadership system and identify the excellence of culture organisational. In addition, identify best practices of TQM factors and benchmarking the performance between the healthcare organisations.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

6- Sensitivity analysis: At this stage, sensitivity analysis should be used to examine the impact of changing the priority of the criteria on the outcomes. This may help the decision making process to improve the service.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all

7- Plan-Do-Check-Act (PDCA) stage: After benchmarking the performance of healthcare organisations and identifying the strengths and weaknesses of the organisations, the adoption of PDCA could help the Quality Circle Team to develop strategies for continuous improvement.

100%	80%	60%	40%	20%
☐	☐	☐	☐	☐
Very Important	Important	Uncertain	Not important	Not important at all