



T.C

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**THE IMPORTANT OF SIX SIGMA METHODOLOGY IN
THE QUALITY OF HOSPITAL SERVICES ERBIL
SAMPLE HOSPITALS**

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İŞLETME ANABİLİM DALI

**HASTANE SERVISLERİNİN KALİTESİNDE ALTI
SIGMA METODOLOJİSİNİN ÖNEMİ ERBİL
HASTANELERİ ÖRNEKLEMİ**

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Table of Contents

BİLİMSEL ETİK BİLDİRİMİ	iii
ÖNSÖZ.....	iv
Dedication	v
Acknowledgement.....	vi
Özet	vii
Abstract	viii
List of tables	ix
Table of figures	xi
Chapter ONE.....	1
Introduction	1
1.1. Research Introduction.....	2
1.2. Research Problem.....	3
1.3. Research Questions.	4
1.4. The importance of the research.	4
1.5. Research Objectives	5
1.6. Research boundaries.....	5
1.7. Operation definitions	6
1.8. Research Organize.....	7
Chapter TWO.....	8
2.1. Literature Review	9
2.2. The quality of health services.....	14
2.2.1. The concept of health services quality.	14
2.2.2. The importance of health services quality.....	16
2.2.3. Health service quality goals	17
2.2.4. Dimensions of the health quality services	19
2.3. Six Sigma approach.....	21
2.3.8. Application of Six Sigma approach in the field of health.	21
2.3.9. Advantages of applying Six Sigma approach in the field of health.	21
2.3.1. Introduction to Six Sigma approach	22
2.3.2. The concept of Six Sigma methodologies	23
2.3.3. Six Sigma Approach entrances:	29

2.3.4. The importance of Six Sigma Methodology.	30
2.3.5.The objectives of Six Sigma Methodology	31
2.3.6.Benefits of implementing Six Sigma Six Sigma	34
2.3.7.Dimensions approach Six Sigma.....	35
2.3.8. Application of Six Sigma approach in the field of health	41
2.3.9. Advantages of applying Six Sigma approach in the field of health	41
2.4. The theoretical relationship between the dimensions of the quality of health service and the dimensions of Six Sigma Methodology	42
2.4.2The differences between previous studies and the current study	44
Chapter Three	45
3.3. Sample application	45
3.4. Statistical methods used.....	45
3.1. Theoretical frameworks:.....	45
Figure 5-Theoretical Framework.....	46
3.2.Research Hypotheses:.....	47
3.4.Statistical methods used.	50
3.5.Questionnaire validity of the tests:.....	52
3.6. Measuring the stability of the questionnaire:	52
3.7. Testing the missing values:	53
3.8..Normal distribution test:.....	54
3.10. The study sample adequacy test	56
3.11.Application Area:	58
3.12. DescriptionRESEARCH SAMPLE.....	61
Frequency Analysis	62
3.14 .CONCLUSIONAND RECOMMENDATIONS	77
3.15..RECOMMENDATION AND SUGGESTIONS.....	77
. SUGGESTIONS FOR FURTHER RESEARCH.....	78
Supplement (1)	79
Supplement (2)	80
Supplement (3)	84
Reference.....	85

BİLİMSEL ETİK BİLDİRİMİ

Yüksek Lisans tezi olarak hazırladığım [Hastane Servislerinin Kalitesinde Altı Sigma Metodolojisinin Önemi Erbil Hastaneleri Örnekleme] adlı çalışmanın öneri aşamasından sonuçlanmasına kadar geçen süreçte bilimsel etiğe ve akademik kurallara özenle uyduğumu, tez içindeki tüm bilgileri bilimsel ahlak ve gelenek çerçevesinde elde ettiğimi, tez yazım kurallarına uygun olarak hazırladığım bu çalışmamda doğrudan veya dolaylı olarak yaptığım her alıntıya kaynak gösterdiğimi ve yararlandığım eserlerin kaynakçada gösterilenlerden oluştuğunu beyan ederim.

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ÖNSÖZ

Hastane servislerinin kalitesinde altı sigma metodolojisinin önemi Erbil hastaneleri örnekleme, başlıklı tezini Erbil hastanelerinde Altı sigma metodolojisini esas alarak uyarlamaya çalışılmıştır.

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Dedication

I dedicate this modest work to:

- To my love and patrons of the Day of Judgment
- To my Sir the Prophet Muhammad the Messenger of Allah, peace be upon him
- To those who I wished to join me in these joyful moments but the destiny was much quicker (to the pure spirit of my parents), Allah inhabit them vast paradises
- To my dear brother (Sabah) and who I shared with childhood, beautiful days, unforgettable memories, and to those make my days brighter, to my family and dear sisters.

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Özet

Bu çalışma, Erbil ilindeki hastanelerinde Altı Sigma uygulamasının, üst düzey yönetim açısından, idari, teknik, mali ve insani faktörlerin belirlenmesine etkisi, araştırılmıştır. Altı Sigma uygulaması ile elde edilen verilen sağlık birimine önerilerek sağlık kalitesine katkıda bulunulmaya çalışılmıştır. Bu kapsamda, Erbil-Irak'taki özel hastanelere bir anket uygulanmıştır. Toplanan veriler frekans analizi ile özetlenmiş ve altı sigma süreci açıklanamaya çalışılmıştır. Altı sigma kalite anlayışı ile kaliteli hizmet sunumu arasında anlamlı ve pozitif bir ilişki olduğunu, anlaşılmıştır.

Anahtar Kelimeler: Altı Sigma, üst yönetimin destek ve taahhüdü, Sürekli iyileştirme, İnsan kaynakları ve eğitimler, işlemler ve düzenlemeler, geribildirim ve ölçüm performansı ve teşvikleri, Kaliteli hizmetin boyutları.

Abstract

This study aimed to determine the possibility of applying Six Sigma in the private hospitals in the province of Erbil, from the perspective of Top management through the identification of the availability of the key factors of administrative, technical, financial and human like the factors that contribute to the success of the application of Six Sigma, as this study aimed to identify the Other Applied six Sigma to improve the quality of health services, based on the optimistic Top management of the desired quality that can be achieved by the application of six Sigma in the field of health work expectations

Data were collected from the managers and of the heads of department in the private hospital in Erbil- Iraq.

The findings of the research showed that there was significant and positive relationship among six sigma and quality service and the limitations and research recommendation are discussed.

Keywords: Six Sigma, support and commitment of top management, Continuous improvements, Human resources and trainings, operations and regulations, feedback and measurement performance and incentives, Dimension of the quality Service,

LIST OF TABLES

Table 1-The definitions of six sigma methodology could be presented in the following set of samples of researchers shown in the table	28
Table 2-Questionnaire Variables	49
Table 3- Summary of Analysis Procedures and Techniques Employed In the Current Study	51
Table 4-Measuring the stability of the questionnaire.....	53
Table 5-Testing missing values	54
Table 6-Normal distribution testone-Sample Kolmogorov-Smirnov Test.....	55
Table 7-Test the independence of research variables	56
Table 8-The study sample adequacy test	57
Table 9 -Distribution of personnel - under study - by Gender	62
Table 10-Distribution of personnel - under study - by Age	62
Table 11-Distribution of personnel - under study – by Qualificationy	63
Table 12-Distribution of personnel - under study – by Specialization	63
Table 13-Distribution of personnel - under study – by Administrative level	64
Table 14-Distribution of personnel - under study – by Experience	64
Table 15-Distribution of personnel - under study – by Experience	65
Table 16-The correlation between variables:.....	66
Table 17-The influence of the independent variable Top management on the dependent variable Speed of response.....	67
Table 18-The influence of the independent on the dependent variable Six Sigmaon the dependent variable Quality of Service	68
Table 19-The influence of the independent variable Continuous improvements on the dependent variable Speed of response	68
Table 20-The influence of the independent variable Human resources on the dependent variable Speed of response.....	69
Table 21-The influence of the independent variable Processes and Systems on the dependent variable speed of response	69
Table 22-The influence of the independent on the dependent variable Feeding back, performance measurement on the dependent variable Speed of response	70
Table 23-The influence of the independent variable support and commitment of top management on the dependent variable confidence and confirmation	70
Table 24-The influence of the independent variable Continuous improvements on the dependent variable confidence and confirmation	71
Table 25-The influence of the independent variable Human resources and trainings on the dependent variable confidence and confirmation	71
Table 26-The influence of the independent variable Processes and Systems on the dependent variable confidence and confirmation.....	72
Table 27-The influence of the independent Feeding back, performance measurement variable on the dependent variable confidence and confirmation.....	72
Table 28-The influence of the independent variable support and commitment of top management on the dependent variable sympathetic: it means the hospital.....	73
Table 29-The influence of the independent variable Continuous improvements on the dependent variable sympathetic: it means the hospital	74

Table 30-The influence of the independent variable Human resources and trainings on the dependent variable sympathetic	74
Table 31-The influence of the independent variable Processes and Systems on the dependent variable sympathetic	75
Table 32-The influence of the independent variable Feeding back, performance measurement on the dependent variable sympathetic.	75
Table 33-The influence of the dimensions of the independent variable (quality of service) on the dependent variable Human resources and trainings	76
Table 34-Excluded Variables.....	76



TABLE OF FIGURES

Figure 1-Change management philosophies 24
Figure 2- Six Sigma levels 26
Figure 3-Main objectives of the Six Sigma approach..... 32
Figure 4- Six Sigma approach effects on the performance of the hospital 40
Figure 5-Theoretical Framework 46



Chapter ONE

Introduction

This chapter aims to put frame of the study, in the provided a statement, identifying the Research problem, Research Questions, importance, and objectives, operational definitions, design, up on what progress will include the current season include:

1.1. Research Introduction.

1.2. Research problem.

1.3. Research Questions.

1.4. The importance of research.

1.5. Research Objectives.

1.6. Research Boundaries.

1.7. Operation definitions.

1.8. Research Organize.

1.1. Research Introduction.

Most organizations seeking to differ in their performance to achieve its goal by the highest efficiency and effectiveness possible and there is no difference whether private or governmental, premise which governs is the work of administration successfully in good recruit potential and resources through the use of administrative thinking and modern methods to achieve its mission and objectives (Mukhtar 2003), and if the production of goods has captured the thinking of the writers from the perspective of the importance and development, the importance and production services sector and provide quality began to take interest of writers and researchers dramatically, it is noticeable service sector growth significantly in all countries particularly developed ones, its shown that whenever economic status developed in a community the more importance of services increase as a component present in the private national product of this society, here the importance of developing the administrative methods of work and improve the quality of products, whether goods or services. (najim, 2010)

This is the way the six sigma methodology and management philosophy is based on the firm principle of seeking to concentrate the effort to get the products and services closer to a large extent from the maximum quality and proficiency levels and the lowest cost and in record time. However, the modern method of the quality depends on the understanding of top management and the extent of its commitment to the application of the methodology (Baldawi, Nadim, 2007).

The strategy of radical change Six Sigma is a systematic way to use very precise data collection and statistical analysis to accurately identify sources of errors and ways to remove them, and rely largely on Six Sigma statistical analysis associated performance metrics which removes impurities found in other quality programs. (Pande & Holpp, 2002)

One important application of quality in health facilities and specially health facilities differ from any industrial facilities or commercial from where it is linked to the lives of patients and does not accept them in any low level of health services and the reason is that any medical error occurs may lead to bad consequences as cases of total disability and death while in other sectors do not result in the loss of anything

serious comparing with that of medical errors. And especially our people in going through all defeating state because of what we suffer from wars, crisis and ISIS attacks, left a negative effects on health and community so it has to be interest in the health sector and increase the quality of their level, no doubt that this arise from the important fact is that the healthy human is underlay hydration efforts to build an integrated community to serve humanity.

1.2. Research Problem.

The development of the rapid evolution of many administrative concepts urged service organizations and private hospitalsto look for ways, methods and appropriate strategies to achieve their goals. Strengthen the offering of services with their financial resources, physical, human, technical, and the methodology of Six Sigma is one of the modern techniques and dimensions to improve and reduce the disadvantages of the quality of services, including health services.

From the above subject, the importance of the quality of health services leads to the success of the health sector in the city of Erbil. Based on the development offers, study the problems that are embodied in identifying the quality of health services dimensions (response speed, confidence and confirmation, the sympathetic). the impact of curriculum six Sigma on the support and commitment of senior management, continuous improvement, human resources, training, processes and systems , Feeding back, performance measurement and financial incentive. Due to the work of a researcher in the health sector has felt the extent of variation provided in health services at many hospitals and through her personal experience as a patient or visiting patients, she was generated this desire to answer all your questions about the availability of the necessary ingredients for the application of Six Sigma in the privet hospitals in improving quality of health services (hamad,2015)

Based on what mentioned above the study problem can be shown the by raising the following questions:

1. The extent to which hospitals use research sample for Six Sigma methodology.
2. Diagnosing quality dimensions of services in hospitals which are in research sample.

3. Is there a relationship or a significant correlation between the six-sigma technology and improvement of the quality of service together and alone?

4. Is there a significant effect for six sigma system to improve the quality of the hospital service together and alone?

1.3. Research Questions.

According to the research problem major hypotheses has been formulated as below:

1. Is there a correlation between dimensions Six Sigma and the dimensions of the quality of health services?

2. Is there a correlation among Six Sigma dimensions and the dimensions of the quality of health services?

3. Is there any difference among six sigma dimensions effect on the quality of health services?

1.4. The importance of the research.

A -practical significance:

The present research obtains its importance from the role and the use of technology of Six Sigma in quality hospital services in two ways in monitoring and control. Thus to achieve high levels of performance for organizations in comparison with competitors of the labor sector, the same organizations. This requires hospitals of Arbil Governorate to identify the needs to improve the hospital services and thus reduce costs as reflected in the final outcome to achieve high levels of profits. This research is a preliminary step to induce further studies that show the importance of Six Sigma technique as a method of oversight in monitoring and control, both in financial terms or the operational and is likely to lead the current results of the research to perform with the biggest benefit for subsequent studies to develop the performance of hospitals to seek levels high-quality after the image were clarified well.

B-scientific importance:

The use of modern technology in the Six Sigma has spatial boundaries on the research services of quality in a hospital.

1.5. Research Objectives

The main purpose of this research is focused to identify the nature of the of Six Sigma approach in private hospitals in the Governorate of Erbil and to what extent affect the dimensions of six sigma methodology in the quality of hospital services, and through the following objectives:

- 1- To determine the nature of the relationship between Six Sigma dimensions and the quality of health service.
- 2- To evaluated the impact of Six Sigma on the quality of health service.
- 3- To determine the difference of six sigma on health service quality.

1.6. Research boundaries.

The study dealt with the impact of six sigma methodology on the quality of health service, the opinions of manager and heads departments in a sample of government and private hospitals in the province of Erbil, so the Research boundaries are as follows:

1- Objectivity, Includes

A- The dimensions of six sigma

- support and commitment of top management.

-Continuous improvements

-Human resources and trainings

-operations and regulations

- feeding back, measuring performance and financial incentives.

B- The dimensions quality of service

- speed of response

-confidence and confirmation

- sympathy

2. Research Duration

Duration of the study period lasted between (20-2-2016) until (3-12 -2016) beside the theoretical and the temporal.

3-Pupulation of Research Sample:

Population of Sample of government and private Hospital in the province of Arbil (Swedish specialist Hospital, PAR hospital, Media diagnostic center, The West eye hospital Erbil, CMC Hospital, Private, Howler Center for Infertility, Soran private hospital, Howar private hospital, Paky Hospital, Kurdistan private hospital, Daek private hospital ,Sardam private hospital, Zhen International hospital, rasul private hospital)in order to obtain of field data.

1.7.Operation definitions

Six Sigma approach refers to a business initiative that will improve the financial performance of the organization by improving quality and waste disposal.(Sleeper, 2006: 1)

Quality of health service as: "Achieving of high and a good level in the medical and health service provided to patients since the first time, as the quality pose a competitive antecedent. In addition to that, cost, flexibility, delivery time, and creativity in achieving the institution to respond to the market demands and to compete in the market." (Alaa Nabil Abdel Razek, 2011).

1.8. Research Organize

Research consists of three chapters, the first chapter discusses the study to identify the (introduction, research problem, research questions, the importance of research, the goals of the research, the limits of the search, Operation definition of research, research design), in the second chapter touched on the (previous studies, the current study variables, which dealt with a number of dimensions of six sigma as an independent variable, and quality of health service as a dependent variable, also dealt with the theoretical relationship between the dimensions of six sigma and quality of health service , The third chapter consists of (sample Application, the research hypotheses, data collection methods, statistical methods used, the questionnaire validity of the tests, the description of the study sample, analysis and discussion of the results), the most important of (the conclusions and Recommendations).

Chapter TWO

This chapter provides a theoretical framework for the study and the main sub-variables in order to take the theoretical side, focusing on what it is stated in the literature through the following point:

2.1. Literature Review

2.2The quality of health service.

2.3 Six Sigma approach.

2.4The theoretical relationship between the dimensions of the quality of health servicesand the dimensions of Six Sigma methodology.

2.1. Literature Review

Arab Studies:

1. Mohammed, Shatit, Aljazaeri, 2010, and the title of the study is "Measuring and Evaluating the Quality of Health Services." The most important objectives of the study to identify the extent of the hospital's management attention to the issue related to quality of service and the diagnosis of the most important conditions that must be provided in health services. The purpose is to ensure the quality of services, and the disclosure of the main difficulties faced by the hospital administration by offering its services to reduce and achieve mutual benefit, and disclosure of appropriate methods for measuring the quality of health services level. Moreover, the most important conclusions of the research that there is some interests in giving patients personal care, but they are weak and there is a kind of ability of workers to provide personal care to patients. There is also obvious weakness in the management of the hospital working hours according to the needs of patients, and reached by the research recommendations, raising the level of personal care for the sick and raise the level of ability of workers by the hospital management through training and skills development.

2. Aisha 2011-2012, and the title study, "The quality of health services in the Algerian public institutions.". The most important objectives of the study are to develop and market to enrich our knowledge of the field of hospitals in the field by virtue of specialization and the importance of health institutions for the community. This is due to their impact on the human element, and the most important conclusions research, important and indicators of the patient that factors such as age, sex and social level as well and the health status of the patient and other considered factors that affect the rate of satisfaction with the health services. The hospital has to facilitate the work procedures as much as possible and this to ensure fast and easy delivery of health services and the willingness of workers in the hospital for lasting readiness to cooperate with the sick and the speed of their response to their requests, and reached by the research recommendations. Reconsider is spending of priorities on the health sector in accordance with the current available resources to improve the public health of the citizens, and to achieve justice in the distribution of health

services. The development of health insurance covers all categories of system society, and ensures access to a basic package of services, laying the foundations of scientific and clear criteria to rationalize the expansion of health facilities based on actual. Modern and data systems geographic information, and the presence of total quality management in health organizations is no longer just a new management theory, but has become an urgent necessity in order to ensure better and the development of performance on an ongoing basis, and to provide excellent health services.

3. Sultan, 2012, title of the study, "Keeping the quality of health services from the perspective of beneficiaries". The most important objectives of the study, measuring the quality of health services provided in private hospitals and disclosure of a patient look into the health service they have received and the diagnosis of the deficiencies in the provision of services dimensions dimensions health sector. The most important conclusions of the research are the differences of proportions of respondents' agreement about the availability of the dimensions of quality of health services in the civil hospitals. Hospitals under variation in the dimensions of the quality of health services and there are deficiencies in the quality of health services in the field of tangibility with respect to and the quality of the rooms and the timeliness and cleanliness of the hospital. Further, the availability of modern instruments and techniques in most civil hospitals and low quality of empathy, with the patient service level by medical staff inside and the hospital to express the spirit of friendship and concern for him and his poems important and provide a service when it's needed, and reached by the search of the recommendations. There are needs in the quality of health service standards in the civil hospitals. This can be done by looking at it as an integrated system of services through the dissemination of a culture of quality in, and adding integrated system in each hospital. The aim is to measure and analyze patient satisfaction on the level of health services provided to them on an ongoing basis. Additionally, to educate hospital staff on the quality of health services standards through providing training courses to the workers to increase their skills on the grounds. Since workers in hospitals are the main components for the implementation of the quality system and the need to provide labs within the hospital instead of taking patients who stay in the hospital.

4. Jawada, 2011, and the title of the study is "The availability of the elements of the application of Six Sigma in government hospitals in Gaza, and its role in improving the quality of health services from the perspective of senior management." The most important objectives of the study is to understand the possibility of Six Sigma application in governing hospitals in the Gaza from the point due management. This study aimed to identify the impact of six Sigma applications to improve the quality of health services, based on the optimistic senior management of the desired quality that can be achieved by the application of six Sigma in the field of health work. Further, the most important conclusions of this study are the availability of senior management with a clear strategy for operations development. Additionally, availability and clear evidence about the policies and objectives of quality in hospitals, which is reached by the searching of the recommendations. The need for attention to planning and emphasis on a clear approach to quality processes, development and operations of continuous improvement in the Ministry of Health and the need to provide clear evidence about the policies and objectives of quality in hospitals and the need to provide financial support for the adoption process. The aim is to process the application as it is the upon the elements of the system application and the need to pay attention to the concept of six Sigma. Moreover, try to work on educating hospital staff to the concept of six Sigma, and what are the benefits that can accrue to both staff and patients when applying six Sigma and strengthen the senior management direction towards excellence stone in patient service, because the patient is a central part in health services.

5. Ismail, 2006, the title of the study is "The technology of six sigma and applicability in the General Company for the manufacture of medicines and medical supplies in Nineveh. The most important objectives of the study, to help the company's management in looking at their technology (6σ) and determine activated procedures. It also focuses on possibility directions about its role in achieving the highest levels of quality. Additionally, the impacts on the competitive position of the company and the disclosure of the importance of technology (6σ) the methodology of the main conclusions of the research, is taken an effective tool to identify problems and eliminate them before the technology of (6σ). It is one of the most important initiatives used by the organization in the trend towards customer satisfaction

through focusing on increasing the levels of goods and services provided. Moreover, it is reached by the going through the recommendations, which is giving greater work initiatives that will improve the quality of the company's products and systems management work where interesting. In addition to that, the concentration of efforts, to invest in modern technologies for quality systems and the development of the current approved quality systems in the company.

6. Salaima, (2007), the title of the study is the possibility of using Six Sigma to improve health performance in the Arab Medical Center. The most important objectives of the study are to identify the extent of the possibility of using the concept of Six Sigma in the Arab Hospital Medical Center in Jordan. The aim is to improve health performance, and the most important conclusions of the research, is the willingness among workers to use the concept of six Sigma and no medium relationship and positive between the effective commitment to senior management and the possibility of using six Sigma. Further, strong relationship between the possibility of using six Sigma in the hospital and reducing medical errors, which is achieved through the recommendations of the study. The constant search for specifications that commensurate with the improvement of health performance and the adoption of the context of documented abused with information feedback from the customers, since the increase of services provided to the customer lead to raising the level of conviction and health services.

7.Fadizil, 2005; Using design for six sigma to design an equipment depot at hospitals. The most important objectives of the study are the use of DFSS as a tool for six Sigma for the design of warehouse equipment at the hospital that have been identified as appropriate variables for the operation of new equipment. This is conducted through the adoption of DFSS to measure the achievement of customer requirements with respect to time management. The most important conclusions of the research, is the importance of using DFSS a shortcut, any setting map operations to cope with quality problems. It is a method to solve problems and over using in the development of products and services and focus on customer needs. Secondly, it is just four customers per year were dissatisfied with the service provided to them, it has been counting the acceptable number in the delay in the delivery of service to

them according to the criteria DFSS, and obtained by the research recommendations, application and using of this design for all hospital operations.

10.Aghili, 2009; Title of the Study, A six-sigma approach to internal audits. The most important objectives of the study are about statement of the relationship between curriculum Six Sigma and internal audit by integrating the stages of approach. A Six Sigma is using the steps loop DAMIC to determine measurement, analysis, recommendation, and censorship with the phases of the internal audit. It includes planning, performance, analysis, recommendation, and follow-up. The most important conclusions of the research, is about a relationship between the behavior of six Sigma and internal audit that the use of entrances together improves the performance of organizations, which is obtained by the recommendations. Further, from the recommendation of all the other banks and government to apply this sophisticated technique to improve their performance and achieve high quality levels.

2.2. The quality of health services.

This part focuses on clarifying of Literature Review of the concept and definition, its importance, its dimensions, objectives, its application, and its benefits. In order to frame the theoretical data as stated, it will be addressing the following:

2.2.1 The concept of health services quality.

2.2.2 The importance of quality health services.

2.2.3 The goals of health service quality.

2.2.4 The dimensions of health services quality.

2.2.1. The concept of health services quality.

The concept of quality in general as the latest management concepts, which are based on a set of ideas and principles that can be used for any administration purposes. The aim is to achieve the best performance possible. The quality management is the style of leadership and the operation of the organization for continuous performance improvement over the long term, by focusing on the requirements and expectations of patients. The concept quality process is to adopt the principles and the dimensions of quality, as part of the strategic goals of the organization. The application of these principles and dimensions in all aspects of activities processes and commitment are for the purpose of continuous improvement, and to satisfy the needs of customers, this is by doing things correctly. In addition, a service quality that received much attention in the service institutions, and in health institutions, because of developments as taking place in the health field and continued in the demand for health services and increase in providing high level of health quality services. It has also become a requirement joint serves the goals and interests of all parties dealing with health institutions. Additionally, giving a precise definition of the quality of health service is not easy being a service intangible as the rest of the services and the lack of typical criteria for judging the quality of service as in the goods. Therefore, it became the definition of the quality of health service concept. It is also subject to various views from the doctor, the patient and the hospital administration saw each of these special concepts. The concept of service and health service quality views

which are not necessarily reflected in the uniform trend. Health service gap of professional and medical perspective is to provide the best services according to the latest scientific and professional developments and controls the ethics of the practice of the profession. Either from the administrative perspective it means how to use the available resources and the ability to attract more resources, to meet the requirements for providing outstanding service, either from a given patient or the beneficiary of the health service, and most importantly it means the quality of health service as a way to obtain them and (Mazuz 0.2011).

There are definitions raised by researchers to define the quality of service, including:

-To know the quality of service as: "to provide the performance required for the client, which is based on saturations and meet the wishes in accordance with the competitive price, and in a timely manner in accordance with the proper methods and techniques." (Jocoupierreet Lucas Frédérice1995).

- As it can be defined as: "the difference between the obtained service and the expected service obtained by the beneficiary of the service." (Stephan Maisonnaset Jan Claude Dufour2006).

-The following definition focused on the quality of service by the enterprise service providers, "the organization is to design and deliver the service properly at the first time, to perform better qualities in the future and to achieve customer satisfaction at the same time, also to enjoy the competitive compared to the service offered by similar institutions." (Safa Mohammad Hade Gazer et al, 2013).

Among the definitions provided for the quality of health service as follows:

- To learn about the quality of health service as: "Achieving of high and a good level in the medical and health service provided to patients since the first time, as the quality pose a competitive antecedents. In addition to that, cost, flexibility, delivery time, and creativity in achieving the institution to respond to the market demands and to compete in the market." (Alaa Nabil Abdel Razek,2011).

The quality of service can be also defined from the standpoint of the following:
(Nadia xaref2007,2008)

Patient: is the care that is accepted by the same score, including the service recipients to be more realistic and it depends on the assessment of the quality on several criteria with the doctors, the receiving appointments, two-awaited treatment, method of reception and many other standards.

Occupational health: it is about excellence, technical excellence, and commitment, to the medical quality standards in providing health care. Furthermore, to achieve the desired results as it appears in areas like, functional competencies, the ability to develop, and use of diagnostic and therapeutic techniques, appropriate care procedures. This means the application of EBM (Evidence Based Medicine), taking into accounts the needs and desires of patients, and ruled that contain three main points: the ethics of health practice, expertise, and quality of health provided service.

Driving institutions, public authorities and insurance institutions: are the adequacies of care illustration, the respect of the requirements of security, quality of care with the search for the optimal use of resources. It is meaning attempts to adapt the resources available to the needs of the implicit and explicit to patients, and to provide the best service to the greatest number of beneficiaries.

Owners: obtain the best workers and the best facilities to provide good service to the disease and cost the least. They are concerned with the basic of how to use the available resources and the ability to attract more resources to meet the requirements for providing outstanding service class and this includes the importance of providing appropriate service in the required time and the acceptable costs.

Nurses: includes positive technical sequence and the work of prevention and the positive relationship with patients and conformance with others in the same field.

2.2.2. The importance of health services quality.

In the field of health service quality, there are remarkable studies that focus on the ability to meet the beneficiaries' expectations of the level provided by the health service to them. This is by addressing the deficiencies to increase in this service, which will be relatively affecting the achievement of beneficiary satisfaction with the hospital provided by the service. Besides, in the quality of technical information service there are studies that show that this will lead to the achievement of high

levels of total quality, which in turn leads to increase the effectiveness of the selling performance and achieve competitive advantage. (Idris, 1993: 12).

On the other hand realizing the importance of making the benefits and advantages of quality, clear and concrete to the beneficiary in the hospital will be as the following: (al-Azzawi, 2005: 34-35).

1. Concentrating on the needs of the beneficiaries, so that they can achieve their requirements.
2. Accomplishing of a high level of quality in all functional sites without any restricted to services.
3. Taking a series of measures necessary to accomplish the level of quality.
4. Continuous screening of all operations and the secondary actors in the production and delivery of services to the beneficiaries.
5. Verification of the needs for the continuous improvement projects and the development of labor standards.
6. Entrance Development Team to solve problems and improve operations to develop a continuous improvement strategy forever.

Generally, the quality of health service has of great strategic importance to the health organization and society level. The reason is that it represents the most essential factors that determine the demand for the service size and check for the hospital and the city's fame and returns. Furthermore, generating investment returns cannot be depleted and provide opportunities for workers and the development of other city services as they were investigating the beneficiary needs and desires of the moral and physical. (Shaban, 2005: 6).

2.2.3. Health service quality goals

The main objectives of the health service quality are:

- Physical and mental health services of beneficiaries to ensure (the patients).
- Distinct quality services that will provide health service to achieve user satisfaction (patient) and increase loyalty health of the institution, which will become effective update outlet for that health institution.
- Knowledge of the opinions and impressions of the beneficiaries (patients) and measure the level of satisfaction with health services are important means in the field of management research and planning for health parish and related policy development.
- Develop and improve the channels of communication amongst the beneficiaries (patients) of health service providers.

- Enable health institutions to perform their duties efficiently and effectively.
- Achieving better productivity levels, as it is to the required level of health care provided access to beneficiaries (patients) as the main objective of quality application.
- Gaining plan B the beneficiary (patient) as there are core values of quality management, which it must be provided in any health organization that works to improve the quality, and seeking to implement quality systems. Thus, the development of work performance and that is what ultimately leads to earn a B, the beneficiary (the patient).
- Improving workers' morale, as the health institution it can enhance the confidence of their employees and make them feel they are members with effectiveness leading to improved morale and thus obtain better results. (Akram Ahmed Al-Taweel and others2010).
- Increasing demand for the various types of modern health services, this increase was accompanied by an increase in another kind of attention to meeting the needs and expectations of the beneficiary (patient).
- Increasing of the arch rivalry between similar health institutions. (Atiq Aisha 2011 - 2012).
- Appropriateness of treatment and care provided to various disease states.
- To achieve the best clinical outcomes for various disease states.
- Adoption of distinct clinical procedures to reduce complications and events that is avoidable or preventable.
- Adopting workers to form positive behavior when dealing with patients as they preserve their individual dignity or work on their involvement in their care plans drawn by their doctors therapists.
- Securing a conducive environment to the patient safety and reassurance in them sent to the safety measures taken regarding their health to achieve their satisfaction and contentment about procedures submitted to them.
- Ensure the appropriate use of targeted resources. (Talal Bin Ayed Al-Ahmadi2004).

2.2.4. Dimensions of the health quality services

There are several dimensions to the quality of health service. In our research, we have adopted the agreed-dimensional and these circumstances dimensions as they are:

The difficulties faced patients during their evaluation of the service being intangible, and despite that, they have relied to their assessment quality of health service that provided to them based on the level or degree of quality, is relying: (the five dimensions):

1. The Speed Responsiveness

It is suggest that all patients regardless of their origin and their background, to receive quickly care of by staff that working in the health institution (hospital) with the proper treatment and cooperation, as appropriate or timely and non-annoying waiting, and include the response in the field of quality of health service following elements:

- Speed in providing the required health service
- Immediate response to the needs of the patient regardless of the degree or being busy.
- Permanent preparation of workers to cooperate with the patients.
- Immediate response to the queries, complaints and inform the patient the exact date for the service provider and the end date of the service.

That is the response in the field of quality of health services. It indicates that workers in the health institution are able to respond to the cases of illness and injuries rapidly at all times that are given to them. Besides, the rapid initiative to assist the beneficiaries (patients) of health services of the institution and quickness to answer all equerries and complaints as well as the speed of completion and delivery of health services to them when they needed them. (Akram Ahmed term and others,2010).

2. Emphasis (Confidence)

It is known as the emphasis on the knowledge that users merit and civility, safety, reliability and the ability to create and gain confidence. It also refers to information and politeness to those in charge of providing the service, (Inspiring Trust, and confidence). Moreover, their ability to inspire trust and confidence, and it represents a 19% relative dimension, such as, the importance in quality depending on it (Kotler), (Parasuraman, Zeithaml, Berry, 1988).

3. Empathic

It is about care or attention, the care that health institution provides them to the beneficiaries of their services. In other words, security is the relationship and interaction between the auditors' health institution and the members of the medical, technical, administrative, and accounting team. Similarly, it is intended to having the confidence, respect, courtesy, kindness, courtesy, confidentiality, understanding, listening, and communication between health service providers and beneficiaries (patients) as the good relationship between the parties. The purpose is to contribute with its workers in the institution of administrative response of patients at the forefront of administrative success of the health service. Furthermore, it is like responsive patients at the forefront of the concerns of the administration and workers in the health institution and listening to the patient and meeting their needs in a spirit of friendliness and kindness. (Dbon Abdul Qadir 0.2012 p. 216).

2.3. Six Sigma approach

This axis seeks to clarify the concept of Six Sigma objectives, importance, entrances and indicators (dimensions affecting the organization), activities and performance variables. The theoretical data will be presented as the following:

2.3.1 Introduction to Six Sigma approach.

2.3.2 The concept of Six Sigma methodology.

2.3.3 Six Sigma Approach entrances.

2.3.4 The importance of six sigma methodology.

2.3.5 The objectives of Six Sigma Methodology

2.3.6 Benefits Six Sigma approach.

2.3.7 Dimensions of Six Sigma approach.

2.3.8. Application of Six Sigma approach in the field of health.

2.3.9. Advantages of applying Six Sigma approach in the field of health.

2.3.1. Introduction to Six Sigma approach

Featuring the current era of changes and developments in all economic, social and technological fields, these developments have become a climate that imposes itself on all installations and seeks not only to succeed but to keep the ongoing developments and improvements of their performance in order to reach the high levels of quality and excellence. One of the most important approaches to achieve this level of excellence is the Six Sigma approach.

It is believed that the achievement of high quality costs a lot of effort, money and time; however, the fact is that quality assurance guarantees less cost and time but increases profit. This is a new concept for the use of Six Sigma "top quality check at the lowest cost" (Naimi&Sweiss, 2008: 6).

It is the human nature to look for perfection and try hard to avoid mistakes or flaws in their work and activities. Hence, we note that a lot of ideas in six sigma approach are not new, but the focus is the ability of Six Sigma approach to collect all of the ideas into one coherent management process.

Six Sigma approach did not suddenly arise in an overnight. It is a stretch for the practice and development of management science in Japan and the West during the seventies and eighties in terms of overall quality, which led to the development of statistical tools to detect problems in management.

Therefore, the six sigma approach works on the links between higher quality and lower costs of production and services. The application of the approach is not only on the final product but for all stages of production and services. The development of this methodology in the United States and Japan gave better results in quality and reduced mistakes. The General Electric, Motorola and other companies used the Six Sigma approach and achieved advanced results. Therefore, they became the leading global organizations around the world through the extensive use of six Sigma methodologies in all areas of productivity, service and economic sectors (Al Nuaimi, 2009: 662)

Six Sigma is derived from the eighteenth letter in the Greek alphabet, and signed as (σ). Statisticians have used this symbol to denote the standard deviation, which refers to the deviation, variation or dispersion in a specific process for the desired goals. (Pete &Larr, 2002)

This chapter deals with the first part of Six Sigma approach in some details in terms of definition, concept, importance, objectives and dimensions of the application. It will cover all aspects related to the application of the methodology. The second part of the chapter focuses on the quality of health services in terms of concept, objectives and dimensions of quality health services, applications and benefits of six Sigma in the field

2.3.2. The concept of Six Sigma methodologies

The philosophy behind the Six Sigma is the application of the scientific method for the design and operation of management systems and business processes that enable employees to provide greater values to beneficiaries and the owners of the hospitals. The scientific method works as follows:

1. Note some important aspects of the market.
2. Establish a temporary explanation or hypothesis consistent with observations.
3. Develop forecasts based on assumptions.
4. Testing predictions by conducting experiments or further observations. Recording observations and modify the hypothesis based on new facts in the case, their differences and the use of statistical tools.
5. Repeat steps 3 and 4 to reduce the differences between hypothesis and results of experiments or observations. (Pyzdek, 1999: 6)

Unlike other initiatives of quality, Six Sigma is a management philosophy. as such, management systems are thought to be more active in their participation for the application of Six Sigma methodology. It includes the steps involved in building a strategic approach to Six Sigma, identifying key processes that affect the strategic objectives of the organization. The strategy needs to define the processes

and measures of effectiveness and efficiency to be achieved and validated. It came several initiatives for quality, as shown in Figure Adina

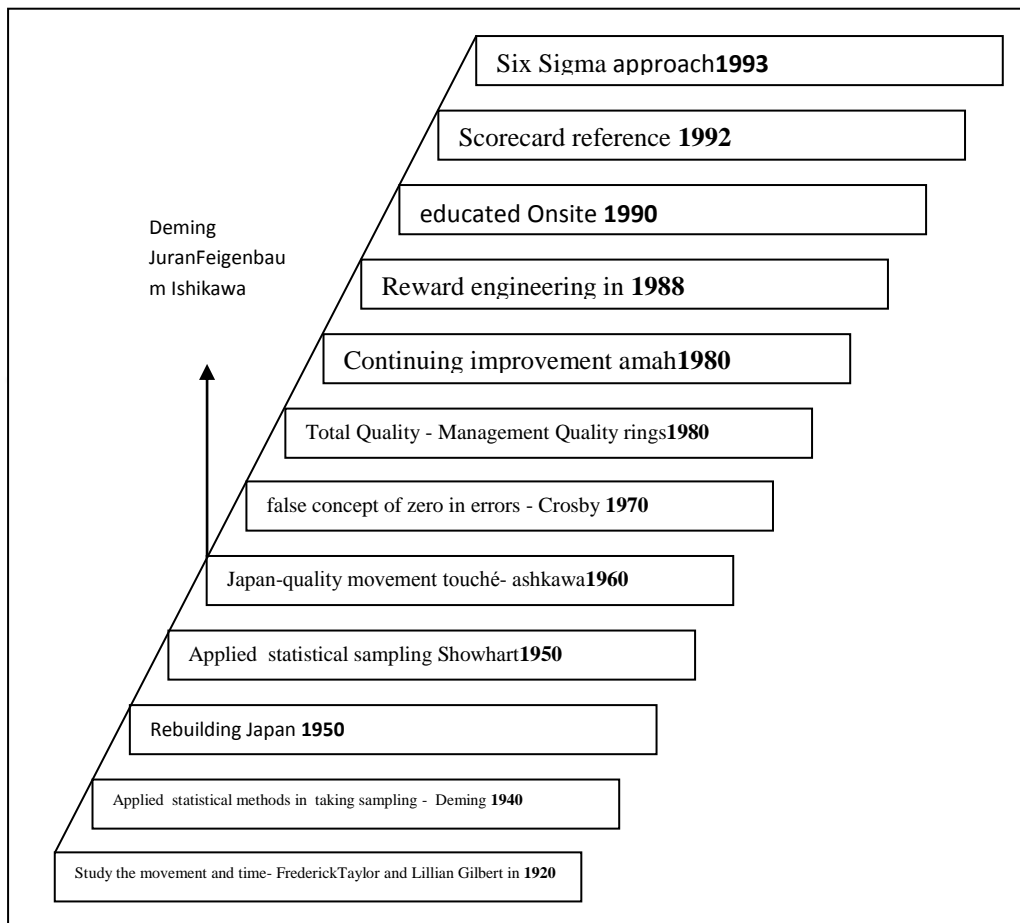


Figure 1-Change management philosophies

Source: Ismail Omar Ali 0.2006, technology Six Sigma and applicability in the General Company for the manufacture of medicines and medical supplies in Nineveh, Masters Letter of introduction to the Council of the Faculty of Administration and Economics, University of Mosul.

The origin of the term Six Sigma arises from the relationship between the difference or variation in the process and requirements of beneficiaries associated with the process. Six Sigma numbers represent how the actual production and distribution compares a range of acceptable values (beneficiaries 'specifications'); where the disadvantage is any value outside of beneficiary's specifications. where the higher the level of Sigma rose more than distribution that fits the specifications whenever it

best when they are "six sigma capable and efficient" means that there is a defect in every 3.4 million jobs despite the expected volatility. . (George, 2003: 25).

The Sigma is the eighteenth letter of the Greek alphabet that indicates standard deviation in statistics. It is a measure of contrast and shows a difference or deviation of a set of data on the average value, or lack of consistency between a set of elements or processes. This concept could become clearer through a form that shows the

distribution of spaces under the normal distribution curve at different levels of Sigma curve (Naimi, Sweiss 2008: 50).

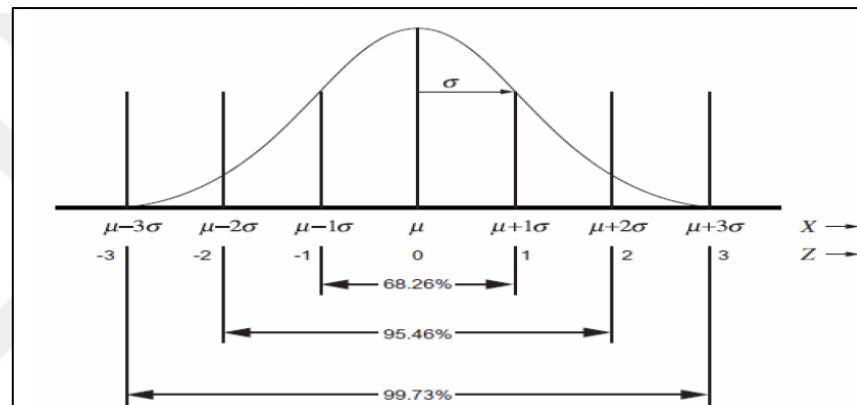


Figure 2-Normal distribution curve

Source: Safawi, SafaYounis, Yahiya Mohammed Muzahim.2009, statistical analysis using Six Sigma approach, published research, Computer Science and Mathematics, Department of Statistics and Informatics, MosulUniversity of 0.17.

After fixing on the above figure we can know why six elements figured exactly, or why six standard deviations is the name of this approach in the quality and excellence, as evidenced by the shape that he can distribute the area under the normal curve in terms of Sigma. When Six Sigma has to have a level of accuracy of performance up to 99.9997%, we are approaching the level of work with almost a flawless rate. Meaning that the label for the six sigma methodology reaches the desired goal and achieves a high level of accuracy where the flaws and mistakes are minimal. (Abu Nahia 2012: 26) clarifies the relationship between all of the six sigma levels and the number of defects per million in the table that follows.

Sigma	Defects for every million Chance
Σ	697.672
2 σ	308.770
3 σ	66.811
4 σ	6.210
5 σ	233
6σ	3.4

Figure 2- Six Sigma levels

Source , Abdul Raman Sharif Hammed. (2015).Use the role of Six Sigma approach to quality services hotel, N0T PUBLİSH THESIS (Iraqi Kurdistan).

From the previous figure, it is clear that accounted for 68.26% of the area lies between $(\mu \pm \sigma)$. This Ratio represents the products or services that fall within the specifications and 31.73% of the specifications $(\mu \pm \sigma)$ reflect the products and services that fall outside the defined specifications. For the rest of the descent, as 95.46% is located between the $(\mu \pm 2\sigma)$ and 99.73% lies between $(\mu \pm 3\sigma)$ reached defective units per million units Producer, the number of defective units when $(\mu \pm \sigma)$ of 697.672, and when $(\mu \pm 2\sigma)$ of (308.770) When $(\mu \pm 3\sigma)$ equal to (66.811) at different levels of (σ) as shown in the table above) .

In fact, the rate and costs of external failure and access to receive the beneficiary of a few quality products (costs arising from the complaints of the beneficiary, the cost of the recovered product, the warranty claims costs, the costs of product liability, cost of sales) loss. It is needed to know the requirements of the beneficiary and work hard to achieve satisfaction and provide products free of defects with (99.99966%) margin of error of (0.0034%) rates, meaning that the number of defective units per 3.4 million jobs, which is named Six Sigma methodology (Safawi and Yahiya, 2009: 34).

Several definitions of Six Sigma have been considered from different perspectives ranging from a narrow perspectives looking at six sigma as a statistical tool for measurement and for the level of quality improvement to broader perspectives as a new strategy for new businesses and their improvements.

Prior to the study of the subject of six sigma in detail, we need to define the term. Six Sigma approach has three distinct elements:

- Scale: a statistical definition of the extent of deviation from perfect process.
- Objective: 3.4 defect per million opportunities.
- Philosophy: long-term business strategy focused on reducing costs through the reduction of variation in products and processes.

Two principles can be presented into the definition of Six Sigma methodology, namely:

- Six Sigma approach begins only fully on the project after the establishment of adequate financial justifications.
- It can be applied to practitioners of six sigma methodology to benefit from the application of statistical methods without the help of statistical experts. (Allen, 2006: 9)

Six Sigma can be defined statistically, where we have two concepts, specification limits and natural distribution. Specification limits or boundaries specifications “are endurance or performance, which ranges on request of the beneficiaries of the products or processes that are purchased. Natural and distribution, or so-called natural curve bell-shaped and also known as the Gaussian curve, contains a number of characteristics that make it a valuable tool and a very useful in statistics and quality. It is a construction of the benefits of the business by addressing the value of the beneficiaries to improve the product or service to lower costs in the business by focusing on reducing contrast of waste with the support of the process (organization, strong, clear) and link strategy to work and support the structure and clear. Breyfogle, 2001: 37), Knowles, 2012: 8).

Table 1-The definitions of six sigma methodology could be presented in the following set of samples of researchers shown in the table

N	Author or researcher	Definition
1	(Sleeper, 2006: 1)	Six Sigma approach refers to a business initiative that will improve the financial performance of the organization by improving quality and waste disposal.
2	Pande and Holpp, 2002: 2	An intelligent approach to managing work that puts users firstly uses facts and data access to reach the best solutions.
3	(Dick, 2002: 1)	It shows that six sigma methodology indicates the extent of a business process or a product, service, and meet market requirements, beneficiaries and provide 3.4 defects out of a million chances.
4	(Al-Naimi, Sweiss 2008: 47)	Six Sigma approach is the smartest way to manage work.
5	(Jones, 2014: 31)	Six Sigma is a driven approach for the data used to influence management decisions to make less waste and increase user satisfaction with a significant focus on financially measurable results.
6	Park, 2003: 126	Defined as a strategic approach to improve the quality of the business, which seeks to increase both user satisfaction and improve the financial value of a hotel.
7	(Gygi, 2005: 9)	It is a systematic solution to the problem.

2.3.3. Six Sigma Approach entrances:

It is evolved over the past years with three basic entries in the application of Six Sigma approach is as the following.

First: a comprehensive strategy of the institution as a whole: It uses this approach in the institutions that have the potential to apply the methodology of Six Sigma comprehensive, as a change for all parts of the institution. Six Sigma approach is as the initiative's strategy from the highest levels in the organization. They are applied in all parts of the institution which requires the integration of curriculum six Sigma in behavior and culture, it should be noted that the application of this approach requires a long time, and are from top to bottom in the organizational structure of the EST with the provision of full support from perches management.

Second, improvement programs: the major institutions that focus on Six Sigma approach are according to this introduction to the units or specific functions in the organization, but in the smaller institutions the application of the Six Sigma methodology is according to this introduction is an internal initiative to improve and be the scope of application. Here is limited and linked by one more the needs of the institution, where the aim is to achieve improvements in the organization of daily activities, according to this approach does not apply Sigma six of the upper levels, but is spreading across the successes that are achieved in one or more of the various units of the institution.

Third: Toolkit: uses this approach in a growing number of institutions today in order to take advantage of the Six Sigma approach in dealing with the problems and errors without the need for drastic changes in the organization, which is used DMAIC methodology Six Sigma tools are also used multiple problem-solving methodology

Through optimization applied programs, and noted that this approach does not result in any of the problems that you may encounter other entrances in the application and perhaps this explains the spread of the entrance and a preference for different institutions. (Lagrsoen,et.al,2011:26).

2.3.4. The importance of Six Sigma Methodology.

The method of Six Sigma has become very popular all over the world. There are several reasons for the popularity of these. the importance of six sigma approach and the many advantages obtained by the organizations through its application as follows:

1. To change the culture of the organization in a positive direction, in terms of the need to perform the right work the first time.
2. Work development to improve the entire organization teams.
3. Fundamental improvements that induced by this approach in operations, and get rid of activities that are non-add value.
4. Transforming the organizational culture of a pattern of anti-pattern of mistakes to prevent errors.
5. Raising the level of user satisfaction, increase their loyalty, and decrease in the number of complaints.
6. Taking steps to remove barriers that are not important in the processes.
7. Increase awareness and understanding of methods to solve problems and methods to use the tools and techniques that lead to increased satisfaction of the employees and improve teamwork organization-wide level.
8. Increase the efficiency of the various administrative decisions because of reliance on data and facts rather than assumptions and expectations.
9. Application of this approach leads to raising the level of productivity that reflected on the profits of more or higher quality in the services provided.
10. Providing data for decisions and the analysis of the database before the decision-making process.
11. Time management.
12. Structured way to solve problems.
13. Marketing faster, increase profit margins, and increase market share.
14. Design and re-design of products / services.
15. Development of leadership skills and project management skills.
16. Reducing the costs of goods and services processing.
17. To improve the process and Systematic learning through systemic introductions.

18. Reduction of capital expenditure.
19. Development environment that motivate workers.

(Ismail, 2006: 19)

Six Sigma is a smarter approach to manage the business, hospital sections. It places the beneficiaries in the first place and depends on the use of information and facts to reach to the best solutions and targets three main areas:

1. Increase user satisfaction.
2. Reduce the time-required cycle.
3. Reduce defects.

The application of Six Sigma methodology at any of the sectors has great benefits, and encompasses the following sectors:

- **Financial sector:** It helps the accuracy in the completion of budgets and financial reports, reduces financial errors, and improves the performance of employees.
- **The health sector:** Reducing medical errors and saving time of the patient's stay in the hospital, waiting periods of patients, as well as reduces the inventory of consumables in the hospital.
- **Construction sector:** reduces mistakes in projects and designs offered within the time available to deliver those designs and helps Six Sigma approach to the management of expenditures within the budgets of the projects.
- **R&D sector:** helps reducing costs, increase the speed of development of processes, and helps the process of linking research and development operations of the business. (Anbari, 2004; 5)

2.3.5. The objectives of Six Sigma Methodology

Six Sigma's goal is to reduce costs and increase profits by eliminating variability and defects, waste, and resulting in the satisfaction and loyalty of the beneficiaries. The contrast and the proliferation of data on the average value, and can be a major cause of defective goods and services. The statistical description of the variance is called the standard deviation, which symbolized by the Greek letter sigma. The goal of the methodology is not to discover errors and submission of leadership for improvement

process, but move within levels that defective zero, and this includes business management target multiple dimensions, other practical path, maintenance, delivery and lead this quality in order to achieve satisfaction beneficiary.

The methodological base of the functions is formulated in a Matrix. This matrix enables the organization to achieve the main kinds of targets. For instance, the goal of timely delivery to the beneficiary comes to know the variables that make up the neck of the bottle, and to know the standard time and the diagnosis of deviation. This can be done by various statistical modalities and treatment of deviation to conduct administrative and organizational changes to delete the deviation may be possible, such as, reducing the time of the business cycle, or re-prioritize goals and those goals can be seen as shown in the below figure (Altme and Merhi.2013: 6).

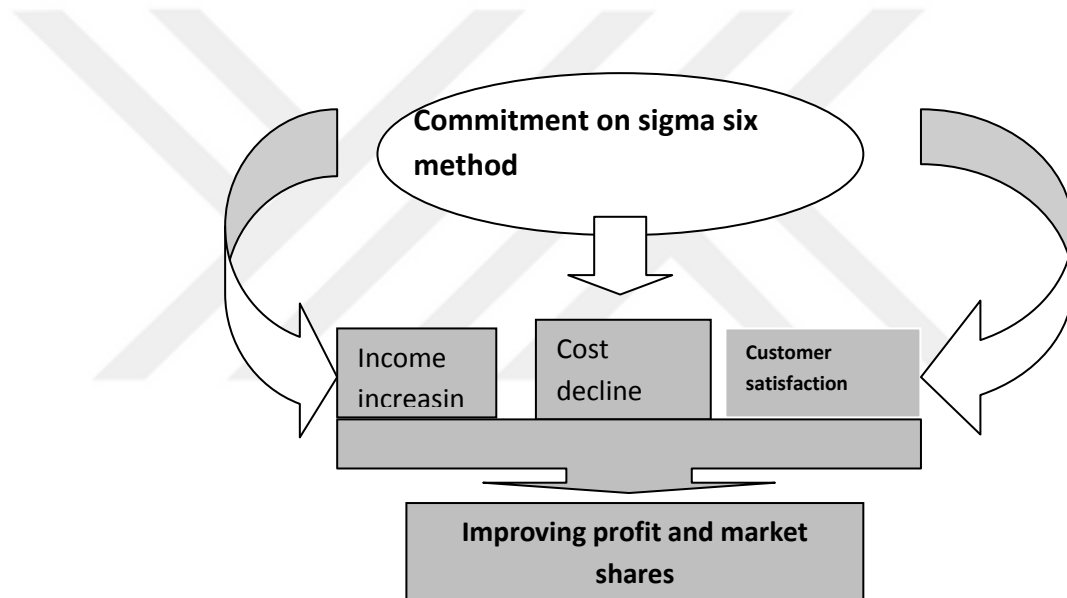


Figure 3-Main objectives of the Six Sigma approach

Source: Hammed, Abdul Raman Sharif Hammed. (2015). Use the role of Six Sigma approach to quality services hotel, NOT PUBLISH THESIS,.P.(Iraqi Kurdistan).

Therefore, the main objective of the application of Six Sigma approach is to follow a strategy to improve the ability of workers and raise their skills to solve problems, so Six Sigma approach works:

- Providing tools and methods to improve the capacity and reduce errors in any process.

- In the quest to reach perfection, because it does not allow it only in the range of (3.4) error per million (DPM0) opportunity
- Assess the performance of operations, reduce disparities, and maintain the stability of the quality of service.
- Improve beneficiary satisfaction levels and then the level of profitability. (Ismail 2006: 24-25).

Based on the above strategy there can be discerned methodology Six Sigma objectives are as follows:

1. Using of statistical tools within the valid methodology, and the organization to gain the required knowledge in order to produce high quality goods and services. Further, to foster it at the lowest costs by reducing contrast, working recycled, loss, waste, and downtime and other losses, a key factor for the success of the strategic objectives Six Sigma approach is working towards attitudes and values.
2. The adoption of the reliable method based on the capabilities associated with the mix of financial and non-financial metrics measurement system and seeking for Six Sigma methodology targets as creating opportunities to penetrate the organization's performance towards the maximum point.
3. The integration of the strategic objectives of the Six Sigma methodology requires five steps (Six Sigma), methodology is designed to increase production performance and prevailing quality systems, so as to reach to unprecedented of user satisfaction levels. It has been using many of the tools to reach the strategic objectives of the six Sigma methodologies, but the focus seemed obvious to improve the process to go towards the higher levels of quality of six Sigma approach.
4. Measuring the degree of process variation, the division process and distinguish sites that need improvements and to increase confidence in the product. (Abbas 2005: 34).

2.3.6. Benefits of implementing Six Sigma Six Sigma

Six Sigma is the methodology of the smartest business management. They put customers in the first place and support the use of information and facts to reach to the best solutions that are targeted at three main areas, namely: increasing customer satisfaction, reducing the time needed for the production cycle, and reduce defects. Here are the benefits that can derive application of six Sigma methodologies (Sujar, et al 2008).

1. To ensure the application of Six Sigma knowledge of permanent and ongoing customer needs, requirements, including what are the variables that may occur to those needs and desires.
2. It ensures about the Six Sigma to improve the performance level of the application is high, which is reflected on the performance levels which are expressed in terms of numbers meant profitability and cost.
3. It ensures the application of Six Sigma to reduce the cost of poor quality (defects in production) COPQ.(Cost of Poor Quality) and the consequential problems, such as, delays in delivery time, customer dissatisfaction and the number of customers.
4. The ability to reduce the processes that have no value and focus on the critical characteristics of processes in quality.
5. Improve the level of harmonization of services through the systematic production and reduce production deviations.
6. Increase the commitment of workers.
7. Increasing awareness and understanding in the methods of solving problems and methods to use the tools and techniques that lead to increasing employee satisfaction.

2.3.7. Dimensions approach Six Sigma.

(Cho, et.al.,2011: 617),and (Pande and Holpp, 2002: 14-16) have identified the entire dimensions of Six Sigma method, as the following

1.Support and the commitment of top management:

A group of leaders in the upper levels of the organization who create Six Sigma method operations organization, and they develop strategic plans and work and dissemination of policy among workers. Besides, by making a list of existing potential indicators and identifying priorities, they can provide the necessary training, consulting, and establishing systems for resource projects, projects, and it is their responsibility to create an enabling environment for the approach of Six Sigma.

The administration by the philosophy known as the Six Sigma approach encompasses three critical success factors: Ingredients strategy, tactics, and most importantly, the cultural component. Culture refers to the beliefs and expectations, and the way to work, and behaviors that characterize the workers in any organization. The culture evolves over a long period, and that often reflect the beliefs and behaviors of senior management. For the reason that Six Sigma affects the way things are done, so the successful implementation will require a change in the culture and that may be difficult.

Successful approach to Six Sigma must be integrated in the work of the organization's strategy. Moreover, active participation by the leaders of the organization is to ensure the survival and success of the curriculum. The following are the main priorities for Administrative Leadership:

- Identifying goals and objectives of the program.
- Business development strategy based on the major beneficiaries of requirements and market conditions as well.
- Identify measures levels of a business to the requirements of the beneficiaries, employees, and shareholders.
- Create and choose (project, task, and the criteria for approval).

- Develop program to regulate the market.
- Identify and train the teams for the spread of the idea of Six Sigma methodology.
- Development of human resources strategy to keep and motivate the middle management to support and contribute to the program.

The support and commitment of senior management to Six Sigma approach is a prerequisite for the success of its application, which is a an important six sigma approach strategic process that should be followed from the top of the organization, which requires encouragement and motivation towards Six Sigma approach. Further, it must be a senior administration leader that has enthusiasm and attention to the application.

The role of the foundation for the leadership of the senior management is to create a clear vision for the Six Sigma approach. Success, communicate, consistently, and repeatedly throughout the organization. It is basic to senior management leadership and responsibility is to ensure that the objectives of Six Sigma methodology and objectives are going correctly in the organization. This is fulfilled by modulating organized activities and follow-up curriculum by working days, as well as creating new jobs and departments, additionally, modifying rewards, incentives, and compensation system. Moreover, driving their decision on the issues The launch of the Six Sigma methodology in the organization is a strategic decision that needs to be initiated by senior management. Subsequently, all the elements of the framework, as well as official optimization strategy, and the activities of the training program and the project team needs the support and commitment of senior management to the successful implementation, as without commitment of strong on the part of senior management, are rarely successful.

The senior management support is a key element for the success of Six Sigma approach, where without it leading to the failure of the curriculum. Therefore, their support is very important, where the dependence on senior management has specific requirements for the dimensions of the Six Sigma methodology.

2. Continuous Improvement:

In the curriculum of Six Sigma, the continuous improvement is the possibility of the exact reduction of common grounds on the variation-desired levels of performance in stable operations. It also prepares the economic terms for organization as it works within specific specifications for the curriculum, lacking capital investment, this clearly shows the advantage of continuous reduction of variation, even if they were all identical units to specifications. The importance of six Sigma methods is confirmed as in the continuous improvement for organizations. They are interested in the development process and based on this principle on the premise that works. It is the fruit of series of interrelated activities that ultimately lead to the outcome, and is continuous improvement is an important element to reduce aberrations that occur in the process art which helps maintaining the quality of performance and increase productivity.

The Six Sigma approach helps business, which enables organizations to dramatically improving the bottom line for the production through the design and monitoring of daily business activities in ways that reduce waste and resources and increased user satisfaction. It guides organizations in reducing the number of errors in everything they do, from the beginning of any purchase orders, eliminating the quality gaps as soon as possible. It is not just the detection and correction of errors. Nevertheless, it provides specific methods to re-operations so that errors never occur in the mattress or the first centers of the organization.

The Six Sigma approach has to allocate resources and improve the leadership of the project through the senior management, and staff training, to implement continuous improvement strategies in the organization efficiently and powerfully. Six Sigma offers continuous improvement that can be used to improve products processes of the organization. It also providing organizations solving problems by relying on the data and information available, it also goes back to the strength and the possibility of organizations in defining their vision of quality in the form of figures in the six sigma levels. It needs to be a team to approach continuous improvement in six sigma precision and caution during assessing the proposed solutions, within showing the ability of the team to keep the process changes. At this phase of the project, it is important to ensure the presence of the teams to give the lessons learned and

informing employees and the organization as well. In addition, to ensure document improvements, data analysis and transmission sequence of the project for a better stage. The communication process in continuous improvement is very important and encompasses many benefits for the Six Sigma approach in the organization.

3. Human Resources and Training

Six Sigma approach needs an efficient human resource to apply an ongoing training before and after the application for the development of workers. This needs to develop a plan to provide training and preparation of human resources teams, develop, and implement a communication strategy. The aim is to keep the organization aware of the achievements of Six Sigma curriculum. The human resource team controls by date and the culture of the organization, they are a vital part of the system that supports the six Sigma approach. Even though, the interview and conversation with a global approach to Six Sigma and controlling is unproductive practices given by senior management, sets us behaviors that are critical to its success, and this depends on the way they were treated by these behaviors .

The training is an integral part of the overall surveillance. It is a regulatory part of strategy. Therefore, it is important for the human resources management when using six-sigma approach in the organization, as well as training is one of the regulatory tools that may be necessary to ensure the integration of solutions for the project. Therefore, it must be linked to analyzing the root that causes the problems, and that may face teams in the six Sigma approach. The failure of any weakness in the training process performance means we must identify weaknesses in training programs and conduct formal amendments to the current program of training workers through proper regulatory function. This function is normally lies in the range of acts of human resources management in the organization.

4. Processes and systems:

It confirms that Sigma approach is a very practical action. In the organization, it is a process in itself, because it is six Sigma processes and systems like a foundation. That helps the organization to achieve continued success, as well as providing an effective information system for the transfer of information and ease of

communication. Additionally, it makes decision-making easy between parts of the organization as a whole, and the provision of a database available to all employees in the six-sigma programs within the organization, where the six Sigma approach is linked to cooperation and does not act by one person. Therefore, there is a need for an effective information system. The processes and systems in the Six Sigma approach needs to develop and submit pursuing. This is not an additional system, it is a renewal of the system basis of information in the organization, that is by replacing the monthly variance reports and turn them into graphs to enable managers to differentiate between the results of the random variation that get in the data .

5. Feedback:

Feedback is provided through the quality programs and performance for employees and managers in a timely manner on an ongoing basis. This is to allow for improved operations raise the level of quality, which contributes to increase the chances of success, creativity and distinction of the organization and to increase benefits of the link. Feedback is a way or process to know the needs, desires, beliefs, and ideas of the beneficiary about the products and services provided to develop and improve the Six Sigma approach applied in the hospital. Further, there are many traditional techniques to identify the beneficiaries, interviews, etc., and today through e-mails, the emergence of the internet process that has become much easier, however, despite that, there are difficulties, such as, lack of knowledge about numbers, location, habits, traditions, and the nature of the beneficiaries' thinking. The most effective method is to visit and interact with the beneficiaries and to know how to use the products and services in the hospital.

6. Measurement performance and incentive system:

Performance refers to an output results that are obtained from the operations, goods, and services that allow evaluation and comparisons relating to the objectives and dimensions of past results, and other organizations. The dimensions of the performance are the processes, products and services throughout the organization (outputs) and it can be expressed in the performance of financial and non-financial terms. The measurement refers to the digital information, which determines the amount of inputs and outputs. The incentive system is to compensate and give moral and material incentives for workers who apply the methodology of Six Sigma as

superior. Measurement performance and incentive system is another dimension of Six Sigma approach, which is measured in performance and in the light of this; it can be paid incentives for workers in the organization. Many of the practical experiences of major organizations proved that measurement performance and incentive system is an active ingredient for the success of the application of Six Sigma methodology, accepted it, and sticks with it, through employee performance evaluation and linking incentive system to achieve the goals and success of the Six Sigma approach.

Performance measurement and incentive system is one of the most important components in the service beneficiaries during using Six Sigma methodology. Here there is a set of elements that used around the quality of service, by adding competition and administrative leadership elements:

- Reliability is the ability to provide services and the provision of services precisely accordingly that they can rely on.
- Responsive and ready to help the beneficiaries immediately.
- Ensure that workers know about the capabilities and their business.
- Empathy is a degree of personal attention and provided carefulness to beneficiaries.

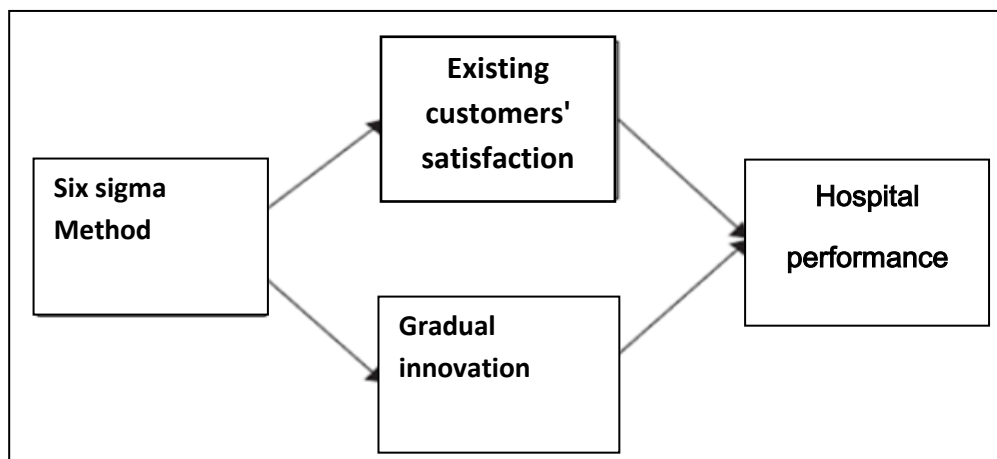


Figure 4- Six Sigma approach effects on the performance of the hospital

Source , Abdul Raman Sharif Hammed. (2015).Use the role of Six Sigma approach to quality services hotel, N0T PUBLISH THESIS (Iraqi Kurdistan).

Six Sigma methodologies have a direct impact on the standard of measurement performance and incentive system in the hospital, as shown in the figure. It also

shows the relationship between Six Sigma approach, innovation, and performance of the hospital. Additionally, Six Sigma method has a positive effect on the progressive innovation for the hospital, as well as the best approach to be effective method, during designed, and developed to improve the current technological route of the hospital, to meet the needs of current beneficiaries. Therefore, many hospitals are investing on their own Six Sigma method to increase satisfaction of current beneficiaries. Because of the improvement in the satisfaction of beneficiaries, with the progressive innovation, is to improve hospital performance.

2.3.8. Application of Six Sigma approach in the field of health

Medical Services are distinguished by accuracy, so any happening in providing the service may lead the life of the patient. The health institutions that apply Six Sigma concepts with low errors rate to a high degree, as well as predictable levels of service provided. The application of Six Sigma in health care has to do with the management of workforce policy and quality improvement, which is more than the application of statistical methods in the measurement. If health institutions care naturally complex and many interactions between physicians, nurses, administrators, regulators, consumers happen who are difficult to agree on one way to change. Therefore, it has to be agreed on a constant way to ensure the success of the efforts of corresponding Parties. (Heuvel, 2006).

The first health institution that has implemented Six Sigma is Commonwealth Health Foundation.

Corporation and in 1998, with the help of General Electric company.

2.3.9. Advantages of applying Six Sigma approach in the field of health

The process of improving the application of Six Sigma requires healthcare institutions to involve all of the doctors, nurses, administrators, including all employees in development efforts. Further, sitting with them in the side of specialists Six Sigma to ensure we obtain the higher the expected results of the application process The following illustrate the benefits of the application of Six Sigma

(Anbari, 2004: 5) indicated that the application of methodology Six Sigma six in any of the sectors has great benefits, as these sectors:

- **Health sector:** the application of Six Sigma in the health sector is very important. The natures of the health sector which does not allow the existence of errors that use the Sigma six sigma approach, reduces medical errors and reduce the time patients stay in hospital and reduce patients waiting times in emergency in addition to reduce inventory materials consumed in hospital).
- **Financial sector:** the application of six sigma in the financial sector helps accuracy in the completion of budgets and financial reports, reduces errors, and improves the financial performance of employees.
- **Construction sector:** the application of Six Sigma in the sector of research and development will help reducing costs and increase the speed of development processes, also helps to connect the research and development operations of the business process.

2.4. The theoretical relationship between the dimensions of the quality of health service and the dimensions of Six Sigma Methodology

Many service organizations, such as, banking, insurance, hospital, hotels, post office and public administration, despite the successful application of Six Sigma methodology in organizations, for instance, insurance, American Express, Citibank, General Electric, and the postal service in the United States, executives and managers from industry services often wonder "Is six Sigma applies to the type of work?" The answer is that Six Sigma has the ability to be successful in almost any industry. Since Six Sigma focuses mainly on user satisfaction, and reduce variability, improve quality and reduce costs.

The interruption frame in the six-sigma methodology is to measures and ensures the beneficiaries requirements, and to be attractive to most of the service organizations. In six-sigma approach, beneficiaries are required to determine the characteristics and defects of the important services that are consumed by them. It is also difficult to measure the quality of the process sigma level of service. In this case, it is possible to prepare a quality level of service to the process of the means, and the organization

can achieve levels if the current level so bad and access to the ideal level unique benchmark to be one of the best organizations. (Park, 2003: 156).

Six Sigma means to improve business services and methodology that maximizes shareholder value by improving the rate of satisfaction of beneficiaries immediately, with less expensive, highest quality, process speed, and invested capital. Therefore, the Six Sigma is as follows:

- Emphasizes on the need to acknowledge the beneficiaries also know the opportunities and eliminating defects.
- Recognizes the disparities that hinder the hospital's ability to provide high quality services.
- Decisions are based on data and include a comprehensive set of quality tools within the methodological framework solves the problems effectively as required.
- It provides effective mandatory cultural infrastructure for sustainable results.

There are several advantages while applying and implementing Six Sigma approach in the services sector, which are as the following:

1. Improve productivity.
2. Reduce defects.
3. Reduce the cost.
4. Growth in market share.
5. Improve relations with the beneficiaries.
6. Improvements in products and services.
7. Reduce the cycle time.
8. Change in the culture. (Jones, 2014: 90).

While applying Six Sigma approach in the services sector the following must be taken into considerations:

1. Learning goals, objectives, and efforts to approach Six Sigma.
2. Be prepared for particular confusions.
3. 3- Start to consider the act of viewpoint (Processors, inputs, processes, outputs, auditors (SIPOC).
4. Controlling through learning opportunities.
5. Anticipate coming changes and challenges.
6. Assuming responsibility for learning.
7. Volunteer, and be patient.
8. (ready for long periods of work).

2.4.1. Take advantage from previous studies

Current study benefited of previous studies in framing the theoretical side and develop hypotheses, so as to provide information contributed to a holistic perception, and accurate for the current study variables in terms of the concept and methodology, as it helped to define the reference and other studies that could benefit from them. As well as a researcher using some of the measures that previous studies in the current study after making some amendments to certain clauses in order to suit the sample under study

2.4.2 The differences between previous studies and the current study

Distinguishes the current study of previous studies, is the following:

- A. This study touched on the concepts of modern theory of psychological empowerment is rarely addressed in previous studies.
- B. The present study attempted to address the real problem that exists in the environment-under study and provide a set of conclusions and proposals have appropriate
- C. This study combining two variables: (dimensions of psychological empowerment, and innovation of employees) and this is what has not happened in any previous study.
- D. This study differed from previous studies in terms of analysis and methods of treatment and methods of statistical tools.
- E. Differ in terms of the spatial and temporal boundaries.

Chapter Three

3.3. Sample application

This chapter aims to show the methodology adopted by the researcher in the study to identify and model assumptions and methods used in data collection, analysis and testing, as well as a description of the study and what it is the community, and based on what will provide the current quarter include:

3.1. Theoretical framework.

3.2. Research hypotheses.

3.3. Data collection methods.

3.4. Statistical methods used.

3.5. Questionnaire Validity of the testes

3.6. Measuring the stability of the questionnaire.

3.7. Testing the missing values

3.8. Normal distribution test.

3.9. Test the independence of the variable of the study.

3.10. The study sample adequacy test.

3.11. Application Area.

3.12. Description Research Sample.

3.13. Correlation Analysis.

3.14. Conclusion and Recommendations

3.15. Recommendations and Suggestions

3.1. Theoretical frameworks:

Systematic treatment of the problem of the study required in the light of its theoretical framework design model Default expresses the theoretical relationship between the variables of the study. The model includes variables presidents, the first deals with Six Sigma as an independent variable factors, and the second deals with

the dimensions of quality Service variable, Figure (3-1) default model for the study, and the model represents a set of hypotheses that were built on the basis of:

- Ability to measure every variable of variables.
- Holistic model study.

The rationale for choosing the model off and put it as it is:

- Variables included in the model reflective of the larger section of the book deal.
- Key variables contained in the model formula contained a relatively great importance to the study sample subset variables.
- Conviction that available to the researcher of the importance of these variables based on previous studies..

Independent Variable

Dependent variable

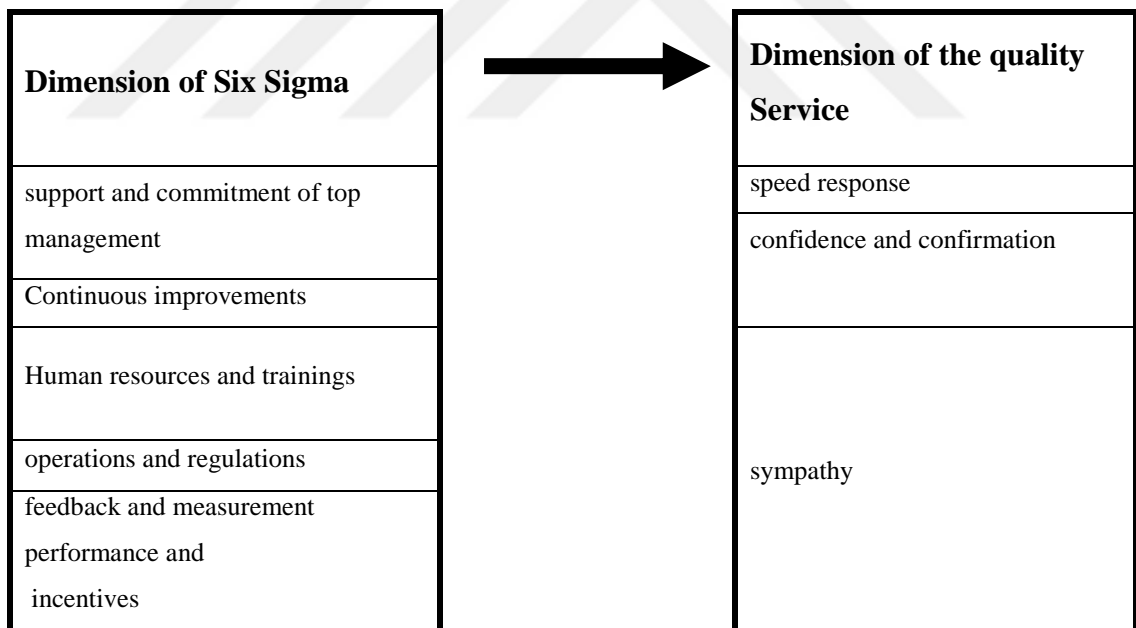


Figure 5-Theoretical Framework

3.2. Research Hypotheses:

The following hypotheses were formulated based on the study's issues:

The first major premise:

There is a moral correlation between Six Sigma standards and the dimension of quality of health services and there are other moral sub-section hypotheses as in the followings:

1. There is a moral correlation between the support and the commitment of senior management and the dimensions of the quality dimensions services in the private hospitals.
2. There is a moral correlation between the continuous improvement and the dimensions of the quality dimensions services in private hospitals.
- 3- there is a moral relationship between human resources, training and the dimensions of the quality dimensions services in private hospitals.
4. There is a moral correlation between the processes, systems and the dimensions of the quality dimensions services in private hospitals.
5. There is a moral correlation between the reverse feeding, measurement and the dimensions of the quality dimensions services in private hospitals.
6. There is a moral correlation between performance measurement, incentive system and the dimensions of the quality dimensions services in private hospitals.

The second major premise:

There are moral effects between the Six Sigma standards the dimension of quality of health services and there are other moral sub-section hypotheses as in the followings:

1. There is a moral effect to the support and the commitment of senior management and the dimensions of the quality dimensions services in private hospitals.
2. There is a moral effect to the continuous improvement and the dimensions of the quality dimensions services in private hospitals.

- 3- there is a moral effect to human resources, training and the dimensions of the quality dimensions services in private hospitals.
4. There is a moral effect to the processes, systems and the dimensions of the quality dimensions services in private hospitals.
5. There is a moral effect to the reverse feeding, measurement and the dimensions of the quality dimensions services in private hospitals.
6. There is a moral effect to performance measurement, incentive system and the dimensions of the quality dimensions services in private hospitals.

The third main hypothesis:

The hospitals achieved Variant or different dimension of quality services according to the six sigma technique.

3.3. Data collection methods.

In order to obtain the data necessary to complete this study and to access the result, information and achieve the objectives of the study were to adopt special methods of both theoretical and field frame, as follows:

1. Theoretical framework: has been relying on books, periodicals, studies, and theses available in a number of university libraries, as well as dependence on the Internet, to develop a theoretical framework.
2. Field frame: A reliance on the questionnaire, which is a key tool in the data collection form, as taken into account in the formulation of its ability to diagnosis and measurement of key variables and sub-study, the researcher has adopted in determining the variables on many studies and research, as well as take advantage of the views of experts, with a specialization in this field.

The questionnaire consists of three basic parts as follows:

First part: Personal information: which includes private personnel information such as gender, age, Qualification, Specialization, Administrative level, Experience and Employment.

Second part: focused on the special dimensions of Six Sigma (- the support and commitment of top management, Continuous improvements, Human resources and trainings, Processes and Systems, feeding back, performance measurement and financial incentive).

The third part: Focus on the standards and the dimensions of quality of service (The speed of response, confidence and confirmation: indicates to earn patients faith, loyalty and satisfaction, the sympathetic: it means the hospital workers' outstanding importance and the level of patient)

(B) Personal interviews with respondents, individuals at Hospital- under study the aim of clarifying paragraphs of resolution in the case of the need to ensure that the correct answer, as well as Director and Head of Department, serving study.

Table 2-Questionnaire Variables

Sq.	The main variables	Sub variables	sequence	Paragraphs	Sources
First	Personal data	Gender		2	
		Age			
		Qualification		6	
		scientific specialization		3	
		administrative level		3	
		Years of Experience		4	
		Employment		2	

second	Dimensions of Six Sigma	-thesupport andcommitme nt of top management	1-6	6	(Meisel,2007) (Truscott,2003:17) (Larson, 2003B:175) (Pyzdek,2003B:106) (Pande and Holpp,2003) Keller,2005:10-11)
		-Continuous improvements	7-12	6	
		-Human resources and trainings	13-18	6	
		-Processes and Systems	19-24	6	
		-feeding back, performance measurement and financial incentive	25-29	5	
Third	quality of service	-The speed of response	1-5	5	(talib, 2006) (Sheriff ,2011) (Hatem, 1998)
		-confidence and confirmation	6-10	5	
		-sympathetic	11-15	5	

3.4.Statistical methods used.

Based on the orientations of the study and its objectives and implications of hypotheses, the researcher used the range of statistical methods and tools by using software (SPSS V.20) (Minitab V.16) in order to analyze the data and test hypotheses were as follows in table (3)below :

Table 3-Summary of Analysis Procedures and Techniques Employed In the Current Study

Analysis procedures	analysis techniques	Definition
Evaluating measurement instrument	Reliability	The stability and consistency of the measuring instruments. Assessed by Cranach's Alpha.
	Construct Validity	A test that look at the fit degree between accuracy of measurement instrument and propose of measurement design through factor analysis
Getting a feel for the data	Normality test	A test that use to determine whether a data collection distributed normal beds on Skuss and Kurtoss
	Frequencies	The number of the repeat observation per unit of time.
	Mean	The average of the observation number
	Variance	A test that used to measure the homogeneity degree of responses.
	S. Deviation	The square root of the variance.
Testing hypotheses	Regression	A test that used to analysis the effects of independent variable in the other variables.
	R	To test the impact of six sigma On quality service.
	F test	A test that used to determine whether there is a significant of regression model.
	T test	A test that used to determine whether there is a significant relationship between variables.

3.5. Questionnaire validity of the tests:

To ensure the reliability and the ability of the questionnaire form to measure the variables of the study, the form was given to 3 experts in management and education (as shown in Table 4). This was conducted to get the experts' opinions about the effectiveness of the proposed questions to produce some notes to be analyzed for making certain changes. The questionnaire form was then accepted by the experts.

3.6. Measuring the stability of the questionnaire:

It was used reliability coefficient (Reliability Analysis) and in a way (Alpha - Cronbach) because it is the appropriate method for phrases descriptive and objective, in order to identify the stability of the questionnaire, which is used to measure the internal consistency based on internal link for phrases rate, as was the distribution of the questionnaire form experimentally on a group of studied amounted (20) individuals were reliability coefficient for phrases questionnaire calculated on the basis of the main variables of the study and its factors and combined with each other, and also was awarded a reliability coefficient of the questionnaire after the distribution of the questionnaire, it turns out that there is a high percentage of congruence in the answers respondents where demonstrate a high degree of stability of the questionnaire, coefficient has reached (Alpha - Cronbach), in both cases more than 60%, which is statistically acceptable value.

Table 4-Measuring the stability of the questionnaire

Variables	Scale Mean if Item Deleted	Scale Variance if Item Deleted	PRE	Post
Too	34.2678	29.215	.673	.926
COI	34.1701	29.380	.714	.923
HRM	34.2904	28.577	.763	.920
PAS	34.4119	29.839	.704	.923
RMN	34.3448	29.178	.769	.920
SOR	34.0816	29.181	.746	.921
CAA	33.9718	30.227	.687	.924
SIH	33.9809	31.429	.524	.932
DOS	34.2970	29.037	.923	.913
DQS	34.0114	30.129	.804	.919

3.7. Testing the missing values:

Based on the table below (5) all variable becomes analysis and they are no any missing data that means the data can be ready for analysis.

Table 5-Testing missing values

		Too	COI	HRM	PAS	RMN	SOR	CAA	SIH	DOS	DQS
N	Valid	133	133	133	133	133	133	133	133	133	133
	Missing	0	0	0	0	0	0	0	0	0	0
Mean		3.7130	3.8108	3.6905	3.5689	3.6361	3.8992	4.0090	4.0000	3.6839	3.9694
Std. Deviation		.86830	.80763	.85456	.76214	.78193	.80175	.73066	.73402	.68174	.64955
Minimum		1.00	1.00	1.00	1.17	1.20	1.60	1.40	1.40	1.17	1.47
Maximum		5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00

3.8..Normal distribution test:

The adoption of the test) / Shapiro-Wilk (Kolmogorov-Smirnova on the variables of the study, a natural breakdown of the questionnaire, as the table shows (6) that there were statistically significant differences for all the dimensions of the independent variable (Dimensions of Six Sigma) and the dimensions of the dependent variable (quality of service), the largest of level of significance (0.05), therefore we accept that the data-entry-drawn study of trace data normal distribution community.

Table 6-Normal distribution testone-Sample Kolmogorov-Smirnov Test

	Too	COI	HRM	PAS	RMN	SOR	CAA	SIH	DOS	DQS
N	133	133	133	133	133	133	133	133	133	133
Normal Parameters ^a Mean	3.7130	3.8108	3.6905	3.5689	3.6361	3.8992	4.0090	4.0000	3.6839	3.9694
Std. Deviation	.86830	.80763	.85456	.76214	.78193	.80175	.73066	.73402	.68174	.64955
Most Extreme Absolute Differences	.163	.111	.145	.133	.147	.129	.142	.154	.091	.087
Positive	.076	.070	.063	.058	.089	.085	.088	.087	.056	.056
Negative	-.163	-.111	-.145	-.133	-.147	-.129	-.142	-.154	-.091	-.087
Kolmogorov-Smirnov Z	1.884	1.285	1.674	1.536	1.694	1.487	1.634	1.778	1.046	1.002
Asymp. Sig. (2-tailed)	.002	.004	.003	.001	.004	.004	.000	.004	.004	.003
a. Test distribution is Normal.										

3.9. Test the independence of the variable of the study.

To test the independence of the variables of the study, and do not overlap with each other, have been used statistical values for (Tolerance), (Variance Inflation) To ensure the independence of the variables of the study, must be values (Tolerance) greater than (0.02) and values (VIF) less than (5) and by reference to the table (7) see that the values of each of (Tolerance) and (VIF) commensurate with the conditions imposed, therefore, make sure that the independence of the variables of the study, and do not overlap with each other.

Table 7-Test the independence of research variables

Model	Co linearity Statistic	
	Tolerance	VIF
(Constant)		
Too	.486	2.058
COI	.406	2.464
HRM	.374	2.671
PAS	.431	2.318
RMN	.353	2.831
SOR	.391	2.557
CAA	.336	2.974
SIH	.530	1.886

3.10. The study sample adequacy test

This table shows the Kaiser-Meyer Olkn test results (KMO), which indicates the extent to verify the adequacy of the study sample, which exceeds the value (KMO) ratio (50%), and seems to investigators, as the value of this indicator is the independent variable (Dimensions of Six Sigma) (71.141) The index reached a value of the variable as well (quality of service) (7). Which indicates to the adequacy of the sample-under study - and analysis. Test result as they appear (Bartlett) as an indicator of the different correlation matrix for each matrix, and for it must be morally this test and the table (8) refers to the existence of moral.

Table 8-The study sample adequacy test

Independent variables	Number of paragraphs	K-M-O	Bartlett	Variance	alpha
Six Sigma				63.196	.913
the support and commitment of top management	6				.926
Continuous improvements	6				.923
Human resources and trainings	6				.920
Processes and Systems	6	71.141	0.00		.923
Feeding back, performance measurement and financial incentive	5				.920
Dependent variables	Number of paragraphs				alpha
Quality of Service					.919
The speed of Response	5				.921
confidence and confirmation	5				.924
Sympathetic	5				.932

** $P \leq 0.01$, * $P \leq 0.05$, N= 133

3.11.Application Area:

1- SWEDISH SPECIALIST HOSPITAL

Swedish Specialist Hospital is to become the first in the country to publish the Swedish in quality of health care performance and services.

It was founded in April 2nd 2012, covers an area of 22000 M2 and has 5150 M2 of buildings. The Hospital is currently serving the outpatients. Among its 45 medical and administrative staffs, 15 physicians 15 nurses, 10 administrators and 5 technicians.

In near future they want to extend the services in new locations in Duhok, Soran, Suleimanie, Akre and Koye

Services:

- Ophthalmology
- Diabetes & Internal Medicine
- Respiratory Diseases
- Plastic Surgery
- Orthopedic & Physiotherapy
- Dentistry
- Ear ,Nose& Throat
- Laboratory
- X-Ray
- Optic Shop & Pharmacy

2- PAR hospital(2013)

PAR hospital is prepared to be a centre of excellence dedicated to provision of the highest quality clinical care to patients in Erbil and Iraq. its medical staff, over 50

consultant physicians and surgeons, together with their outstanding nursing staff and all the other healthcare professions at Par Hospital makes it their mission to improve the health and they well being of patients and communities.

The hospital utilizes the most advanced medical technology in its state-of-the-art medical and surgical care facilities, so you can feel confident that you and their loved ones are getting the highest standard of medical care in a safe environment.

3- MEDIA DIAGNOSTIC CENTER

Media Diagnostic Centre (MDC) offers full service diagnostics to the public and private sectors. MDC is positioned to be responsive to the needs of the health system; developing and implementing new tests and methods that are not available in the region, or they're previously performed internationally.

MDC is a state of the art laboratory; complete with new generation automated analyzers and a computerized Laboratory Information System (LIS). The LIS will house their patient database and test results. It is networked to their automated analyzers ensuring correct, accurate and traceable results. The laboratory is able to service more than 3000 samples per day.

Media Diagnostic Centre is work side-by-side with the Kurdistan Regional Government and the Kurdish and Iraqi medical community to introduce an improved model of medical services.

MDC is the first Laboratory in the region to achieve International Accreditation as a Quality Provider of Medical Testing under the International Standard ISO 15189:2007 Medical laboratories - particular requirements for quality and competence.

4- THE WEST EYE HOSPITAL ERBIL

The west eye, which started its services in ERBIL city in 2010, responds all problems related with eye health uninterruptedly 24 hours a day.

they ensure easy accessibility of the eye health services to the people of Iraq with their advanced technology and specialists. They have been also providing health services to the region's people with their branch in Diyarbakir, Turkey since 2007.

In addition, their first overseas branch started its services in Bucharest, Romania in 2010.

Their Erbil Hospital, which is built on a 3500 m² closed area, has 3 surgery rooms, 5 examination rooms, Excimer Laser and Intranasal units, survey rooms, emergency unit and special rooms with capacity of 15 beds.

5- CMC Hospital

CMC Hospital employs over 100 full time employees. They have all been handpicked for their educational background and/or training, their experience, and their growth potential.

CMC Hospital is an equal opportunity employer.

They do not believe in favoring prospective employees on the basis of religion or gender.

Service

CMC hospital building has five floors in each floor there are ttheynty comfortable rooms which are fully air-conditioned and theyll-appointed to meet the patients needs

There are three types of rooms available to patients who have to stay overnight at the CMC hospital.2013.

6- Private Howler Center for Infertility

Private Howler Center for Infertility and IVF opened in 2008. Op. Dr. Zhian Baker Hassan director of center. Op. Dr. Suhel Mewled their Andrologist. Embryologist is ZiyaDENEK .

since the opening of IVF center they did 2200 cycles until beginning of 2013. their success rate is %40.

their staff experienced to IVF treatment.

treatment services are classic IVF, ICSI, IUI, Embryo Transfer, Trials for natural pregnancy, pregnancy and ANC follow up, Fetal beings follow up, Embryo Freezing/thawing, Oocyts Freezing/Thawing, Sperm Freezing/Thawing,

Spermiogram with Kruger's strict criteria, PDG: Cerotype, Single Gene Mutation, Sex selection, TESE, TESA, MESA, PESA, small laparoscopic surgery, Biochemical tests; blood tests, hormone tests, urine tests, viral tests, etc.

7- PAKY Hospital

It is a private hospital established between 2009- 2013 by a group of surgeons and physicians in different specialties. They are affiliated to Howler Health Directorate and Howler Medical University. They agreed about certain principles and guidelines regarding both ethical issues and businesses in the private health sector.

OBJECTIVES

To be a centre of art regarding the quality of health services presented in PAC Hospital.

The name derives from three words:

P: Protection of rights of patients and health professionals (doctors and paramedics).

A: Assurance of their people about the best health services according to International standards.

C: Cooperation of the poor people.

These 3 words have the same initials and meanings in Kurdish Language.

3.12. Description RESEARCH SAMPLE

Chose a research sample, what they own knowledge and experience and since they are in the upper levels of management and the relationship of the subject of research the nature of their work significantly where the questionnaire distributed to the director of hospital and the head of department and the decision section, researcher has distributed 150 form questionnaire to a sample - under study mentioned above. And it has a screening process and the exclusion of non-potable forms thus became final after the constraint mentioned 133filter, and the researcher has adopted the style of personal interviews with many of the individuals under study to illustrate paragraphs resolution to get the most amount of information.

Frequency Analysis

Table 9 -Distribution of personnel - under study - by Gender

Gender		Frequency	Percent
Valid	Male	87	65.4
	Female	46	34.6
	Total	133	100.0

Indicate the table data (9) that males constitute (65.4) of the total number of individuals under study, while the percentage of females (34.6) of limitation. This reflects that the majority of individual's respective personnel study are male.

Table 10-Distribution of personnel - under study - by Age

Age		Frequency	Percent
Valid	Less than 30	50	37.6
	31 to 40	50	37.6
	41 to 50	18	13.5
	More than 51	15	11.3
	Total	133	100.0

Table data indicate (10) showed that the people in our sample who are less than (30) years old has (37.6) percent of the total number, similarly, people group with age between (31 and 40) takes (37.6) percent of the total number in descending order the people with age between (41 to 50) to takes (13.5) while the final group who are in age more than (51) takes (11.3) percent.

Table 11-Distribution of personnel - under study – by Qualification

Qualification	Frequency	Percent
Valid Diploma	47	35.3
Bachelor	54	40.6
Higher Diploma	6	4.5
Master	13	9.8
Doctorate	13	9.8
Total	133	100.0

Table data indicates (11) that Bachelor makes up (54) of the total number of individuals under study, while the percentage of Diploma is (35.3). In descending order the table showed the percentage of sample for people who has Master is(9.8) and similar doctorate has (9.8), finally the higher diploma has (4.5).

Table 12-Distribution of personnel - under study – by Specialization

Specialization	Frequency	Percent
Valid Medicine	73	54.9
Business Administration	29	21.8
Others	31	23.3
Total	133	100.0

The above table explains that the specialization in our sample is arranged in this order. While the highest percentage for medicine occupation is equal to (54.9). The

business administration specialization people take (21.8) and other types of people in our study sample take (23.3).

Table 13-Distribution of personnel - under study – by Administrative level

Administrative level		Frequency	Percent
Valid	Director general	3	2.3
	Director	53	39.8
	Others	77	57.9
	Total	133	100.0

From administration view the percentage of people who are working as director is equal to (39.8), while the people that have director general position takes (2.3) percent of the total number in our sample. Finally, people with other administrative position have (57.9).

Table 14-Distribution of personnel - under study – by Experience

Experience		Frequency	Percent
Valid	less than 3	29	21.8
	4 to 7	43	32.3
	8 to 11	28	21.1
	more than 12 years	33	24.8
	Total	133	100.0

The above table clarify that majority of people in our sample have (4 to7) years of experience, while (29) person have less than (3) years of experience. In descending

order people with (8to 11) years are (28) person from the total number, finally people with more than (12) years is equal to (33) person from the total number.

Table 15-Distribution of personnel - under study – by Experience

Employment		Frequency	Percent
Valid	Medical specialty	71	53.4
	Administrative specialization	61	45.9
	Total	133	100.0

It is seen from the table that people with medical specialty experience is equal to (71) person from the total number of samples, while administrative experience people is equal to (61) person from the total number of samples.

Table 16-The correlation between variables:

3.13. Correlations

		Too	COI	HRM	PAS	RMN	SOR	CAA	SIH	DOS	DQS
Too	Pearson Correlation	1	.651**	.560**	.551**	.621**	.474**	.360**	.319**	.815**	.450**
	Sig. (2-tailed)		.000	.000	.000	.000	.000	.000	.000	.000	.000
	N	133	133	133	133	133	133	133	133	133	133
COI	Pearson Correlation	.651**	1	.610**	.583**	.640**	.592**	.387**	.268**	.833**	.490**
	Sig. (2-tailed)	.000		.000	.000	.000	.000	.000	.002	.000	.000
	N	133	133	133	133	133	133	133	133	133	133
HRM	Pearson Correlation	.560**	.610**	1	.651**	.691**	.576**	.567**	.331**	.842**	.574**
	Sig. (2-tailed)	.000	.000		.000	.000	.000	.000	.000	.000	.000
	N	133	133	133	133	133	133	133	133	133	133
PAS	Pearson Correlation	.551**	.583**	.651**	1	.700**	.521**	.411**	.279**	.826**	.473**
	Sig. (2-tailed)	.000	.000	.000		.000	.000	.000	.001	.000	.000
	N	133	133	133	133	133	133	133	133	133	133
RMN	Pearson Correlation	.621**	.640**	.691**	.700**	1	.519**	.471**	.373**	.869**	.531**
	Sig. (2-tailed)	.000	.000	.000	.000		.000	.000	.000	.000	.000
	N	133	133	133	133	133	133	133	133	133	133

SOR	Pearson Correlation	.474**	.592**	.576**	.521**	.519**	1	.687**	.479**	.641**	.850**
	Sig. (2-tailed)	.000	.000	.000	.000	.000		.000	.000	.000	.000
	N	133	133	133	133	133	133	133	133	133	133
CAA	Pearson Correlation	.360**	.387**	.567**	.411**	.471**	.687**	1	.664**	.526**	.908**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000		.000	.000	.000
	N	133	133	133	133	133	133	133	133	133	133
SIH	Pearson Correlation	.319**	.268**	.331**	.279**	.373**	.479**	.664**	1	.375**	.823**
	Sig. (2-tailed)	.000	.002	.000	.001	.000	.000	.000		.000	.000
	N	133	133	133	133	133	133	133	133	133	133
DOS	Pearson Correlation	.815**	.833**	.842**	.826**	.869**	.641**	.526**	.375**	1	.602**
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000		.000
	N	133	133	133	133	133	133	133	133	133	133
DQS	Pearson Correlation	.450**	.490**	.574**	.473**	.531**	.850**	.908**	.823**	.602**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.000	.000	.000	
	N	133	133	133	133	133	133	133	133	133	133

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

The whole effect of the independent variables on the dependent variables:-

Table 17-The influence of the independent variable Top management on the dependent variable Speed of response

De. variable In. variable	Speed of response					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Top management	.438	.219	.225	38.031	6.167	.000

the table above showing that any change in the independent variable of(Top management) will change the dependent variable(Speed of response) and depending on the result of table (17) that the independent variable(Top management) effects on the(Speed of response) effects by B (.438), Adjusted R Square(.219), R Square(.225), F. test(38.031), T. test(6.167)and the model become Significant (0.00).

Table 18-The influence of the independent on the dependent variable Six Sigmaon the dependent variable Quality of Service

De. variable In. variable	Quality of Service					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Six Sigma	.574	.358	.363	74.541	8.634	.000

the table above showing that any change in the independent variable of(Six Sigma) will change the dependent variable(Quality of Service) and depending on the result of table (18) that the independent variable (Six Sigma) effects on the(Quality of Service) effects by B (.574), Adjusted R Square(.358), R Square(.363),F.test(74.541),T. test(8.634)and the model become Significant (0.00).

Table 19-The influence of the independent variable Continuous improvements on the dependent variable Speed of response

De. variable In. variable	Speed of response					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Continuous improvements	.587	.345	.350	70.532	8.398	.000

the table above showing that any change in the independent variable (Continuous improvements) will change the dependent variable (Speed of response) and depending on the result of table (19) that the independent variable (Continuous improvements) effects on the (Speed of response) effects by B (.587), Adjusted R Square(.345), R Square(.350),F.test(70.532),T. test(8.398)and the model become Significant (0.00).

Table 20-The influence of the independent variable Human resources on the dependent variable Speed of response

De. variable In. variable	Speed of response					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Human resources	.540	.327	.332	65.015	8.0063	.000

the table above showing that any change in the independent variable (Human resources) will change the dependent variable (Speed of response) and depending on the result of table (20) that the independent variable (Human resources) effects on the (Speed of response) effects by B (.540), Adjusted R Square(.327), R Square(.332),F.test(65.015),T. test(8.0063)and the model become Significant (0.00)

Table 21-The influence of the independent variable Processes and Systems on the dependent variable speed of response

De. variable In. variable	Speed of response					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Processes and Systems	.549	.266	.272	48.915	6.994	.000

the table above showing that any change in the independent variable (Processes and Systems) will change the dependent variable(speed of response) and depending on the result of table (21) that the independent variable (Processes and Systems) effects on the (speed of response) effects by B (.549), Adjusted R Square(.266), R Square(.272),F.test(48.915),T. test(6.994)and the model become Significant (0.00)

Table 22-The influence of the independent on the dependent variable Feeding back, performance measurement on the dependent variable Speed of response

De. Variable In. variable	Speed of response					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Feeding back, performance measurement	.532	.264	.270	48.342	6.953	.000

the table above showing that any change in the independent variable (Feeding back, performance measurement) will change the dependent variable(speed of response) and depending on the result of table (22) that the independent variable (Feeding back, performance measurement) effects on the (speed of response) effects by B (.532), Adjusted R Square(.264), R Square(.270),F.test(48.342),T. test(6.953)and the model become Significant (0.00).

Table 23-The influence of the independent variable support and commitment of top management on the dependent variable confidence and confirmation

De. variable In. variable	confidence and confirmation					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
support and commitment of top management	.303	.123	.130	19.550	4.422	.000

the table above showing that any change in the independent variable (support and commitment of top management) will change the dependent variable (confidence and confirmation) and depending on the result of table (23) that the independent variable (support and commitment of top management) effects on the (confidence and confirmation) effects by B (.303), Adjusted R Square(.123), R Square(.130),F.test(19.550),T. test(4.422)and the model become Significant (0.00)

Table 24-The influence of the independent variable Continuous improvements on the dependent variable confidence and confirmation

De. variable In. variable	confidence and confirmation					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Continuous improvements	.350	.143	.150	23.104	4.807	.000

the table above showing that any change in the independent variable (Continuous improvements) will change the dependent variable (confidence and confirmation) and depending on the result of table (24) that the independent variable (Continuous improvements) effects on the (confidence and confirmation) effects by B (.350), Adjusted R Square(.143), R Square(.150),F.test(23.104),T. test(4.807)and the model become Significant (0.00).

Table 25-The influence of the independent variable Human resources and trainings on the dependent variable confidence and confirmation

De. variable In. variable	confidence and confirmation					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Human resources and trainings	.485	.316	.322	62.094	7.880	.000

the table above showing that any change in the independent variable (Human resources and trainings) will change the dependent variable(confidence and confirmation) and depending on the result of table (25) that the independent variable (Human resources and trainings effects on the (confidence and confirmation) effects by B (.485), Adjusted R Square(.316), R Square(.322),F.test(62.094),T. test(7.880)and the model become Significant (0.00).

Table 26-The influence of the independent variable Processes and Systems on the dependent variable confidence and confirmation

De. variable In. variable	confidence and confirmation					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Processes and Systems	.394	.162	.169	26.569	5.155	.000

the table above showing that any change in the independent variable (Processes and Systems) will change the dependent variable(confidence and confirmation) and depending on the result of table (26) that the independent variable (Processes and Systems effects on the (confidence and confirmation) effects by B (.394), Adjusted R Square(.162), R Square(.169),F.test(26.569),T. test(5.155)and the model become Significant (0.00).

Table 27-The influence of the independent Feeding back, performance measurement variable on the dependent variable confidence and confirmation

De. Variable In. variable	confidence and confirmation					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Feeding back, performance measurement	.440	.216	.222	37.337	6.110	.000

the table above showing that any change in the independent variable (Feeding back, performance measurement) will change the dependent variable(confidence and confirmation) and depending on the result of table (27) that the independent variable (Feeding back, performance measurement) effects on the (confidence and confirmation) effects by B (.440), Adjusted R Square(.216), R Square(.222),F.test(37.337),T. test(6.110)and the model become Significant (0.00).

Table 28-The influence of the independent variable support and commitment of top management on the dependent variable sympathetic: it means the hospital

De. Variable In. variable	Sympathetic					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
support and commitment of top management	.269	.095	.101	14.795	3.846	.000

the table above showing that any change in the independent variable (support and commitment of top management) will change the dependent variable(sympathetic) and depending on the result of table (28) that the independent variable (support and commitment of top management) effects on the (sympathetic) effects by B (.269), Adjusted R Square(.095), R Square(.101),F.test(14.795),T. test(3.846)and the model become Significant (0.00).

Table 29-The influence of the independent variable Continuous improvements on the dependent variable sympathetic: it means the hospital

De. Variable In. variable	Sympathetic					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Continuous improvements	.244	.065	.072	10.132	3.183	.000

the table above showing that any change in the independent variable (Continuousimprovements) will change the dependent variable (sympathetic) and depending on the result of table (29) that the independent variable (Continuous improvements) effects on the (sympathetic) effects by B (.244), Adjusted R Square(.065), R Square(.072),F.test(10.132),T. test(3.183)and the model become Significant (0.00).

Table 30-The influence of the independent variable Human resources and trainings on the dependent variable sympathetic

De. Variable In. variable	Sympathetic					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Human resources and trainings	.284	.102	.109	16.066	4.008	.000

the table above showing that any change in the independent variable (Human resources and trainings) will change the dependent variable(sympathetic) and depending on the result of table (30) that the independent variable (Human resources and trainings) effects on the (sympathetic) effects by B (.284), Adjusted R

Square(.102), R Square(.109),F.test(16.066),T. test(4.008)and the model become Significant (0.00).

Table 31-The influence of the independent variable Processes and Systems on the dependent variable sympathetic

De. variable In. variable	Sympathetic					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Processes and Systems	.268	.071	.078	11.016	3.319	.000

the table above showing that any change in the independent variable (Processes and Systems) will change the dependent variable(sympathetic) and depending on the result of table (31) that the independent variable (Processes and Systems) effects on the (sympathetic) effects by B (.268), Adjusted R Square(.071), R Square(.078),F.test(11.016),T. test(3.319)and the model become Significant (0.00).

Table 32-The influence of the independent variable Feeding back, performance measurement on the dependent variable sympathetic.

De. Variable In. variable	Sympathetic					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
Feeding back, performance measurement	.350	.133	.139	21.208	4.605	.000

The table above showing that any change in the independent variable (Feeding back, performance measurement) will change the dependent variable(sympathetic) and depending on the result of table (32) that the independent variable (Feeding back,

performance measurement) effects on the (sympathetic) effects by B (.350), Adjusted R Square(.133), R Square(.139),F.test(21.208),T. test(4.605)and the model become Significant (0.00).

Table 33-The influence of the dimensions of the independent variable (quality of service) on the dependent variable Human resources and trainings

De. variable In. variable	Human resources and trainings,					
	B	Adjusted R Square	R Square	F. test	T. test	Sig
quality of service	.436	.354	.603	37.396	8.025	.000

The table above showing that any change in the independent variable (quality of service) will change the dependent variable(Human resources and trainings) and depending on the result of table (33) that the independent variable (quality of service) effects on the (Human resources and trainings) effects by B (.436), Adjusted R Square(.354), R Square(.603),F.test(37.396),T. test(8.025)and the model become Significant (0.00).

Table 34-Excluded Variables.

Model	Beta In	T	Sig.	Partial Correlation	Co linearity Statistics
					Tolerance
Too	.188 ^a	2.204	.029	.190	.686
COI	.222 ^a	2.509	.013	.215	.628
PAS	.173 ^a	1.849	.067	.160	.576
RMN	.257 ^a	2.652	.009	.227	.522

3.14 .CONCLUSIONAND RECOMMENDATIONS

From the evidence of this research study, it is possible to establish and reach conclusions, some of which confirm theorists' views, which are:

1. A well-designed strategic plan contributes to directing all activities towards achieving the air force base's mission, goals and objectives.
2. Changing the management style from an emphasis on command and control to an emphasis on leadership, with leadership being viewed as enabling and helping others to perform their work by removing barriers and constraints.
3. Involvement, training and empowerment of employees are a must, as well as recognition that they are the primary source of a competitive advantage.

3.15..RECOMMENDATION AND SUGGESTIONS.

1. The concept of TQM adopted in this study was defined as: A management philosophy for continuously improving overall business performance based on leadership, supplier quality management, vision and plan statement, evaluation, process control and improvement, product design, quality system improvement, employee participation, recognition and reward, education and training, and customer focus.
2. Implement TQM is merely to implement these TQM constructs through a set of practices such as using relevant tools or techniques.
3. The extensive review of the TQM literature provided a solid foundation for conducting this research.
4. A TQM approach is top down through line management in a quality council and quality task groups, and bottom-up through quality teams.

Communication of the success of quality programmers and of progress is vital. Finding ways to disseminate information and to obtain feedback is a high priority.

5. A change in the TQM philosophy affects the working life of people and as such can create resistance to change. Resistance to change must be translated to positive feedback that can direct the development process to establish a new culture.
6. The success of any TQM approach critically depends upon the commitment of top management, who must be, and must be seen, to be involved. Top management must establish unity of purpose and direction of study sample. They must create and maintain the internal environment in which people can become fully involved in achieving objectives.

. SUGGESTIONS FOR FURTHER RESEARCH

- determine training and development programmers should be to adapt to the demands set by TQM to the institution.
- Determine the factors that could enhance improved customer satisfaction.
- TQM and Empowerment and its effect on company performance

Supplement (1)

Questionnaire expert opinions model

In measuring the validity questionnaire

Survey Form of Experts Opinions

Mr. / Ms.

We present the survey form and its clauses for the purpose of the scientific research. It includes different aspects to achieve the objectives of the master thesis which is “The impact of six sigma methodology on the quality of health services in Erbil private Hospitals”. It’s therefore an analytical study of the opinions of a sample of the opinions of deans and their assistants and heads of scientific departments in a sample of government and private universities in the province of Erbil. Due to your scientific experience, ability and most capable to deal with such clauses and your participation to provide an accurate view about the subject has a positive influence in producing this thesis at the expected level. As well as your contribution to gaining the accurate results will enhance the achievement of the objectives of this study. So the researcher invites you (after the your perusal on the definitions of each variables) to give your opinions about the questionnaire, dimensions and the clauses encompasses indicating necessary notes in the light of answering the following questions of questionnaire, dimensions and its clauses:

1. Do the questions measure the main variables of the study?
2. Are the clauses clear and do they measure the purpose which set for?
3. Is every clause listed under belongs to a dimension of the each specified dimensions.
4. Are there other clauses that can be added within each dimension, or disregard the inappropriate clauses?
5. Is the alternatives of the measurement appropriate? If not so, do you suggest other alternatives?

We are grateful for your high cooperation with us, we wish you all the success and accept our sincere respect.

Researcher

Sameaah Sulaiman Xoshnaw

E-mail: samea.sleman@gmail.com

Phone #:07504542275

supervisor

PROF.DRSAIT PATIR

Supplement (2)

First/ Personal Information:

A gender Male () Female ()

B) years old

2. Qualification

Diploma ()

Bachelor ()

Higher Diploma ()

Master ()

Doctorate ()

The last, the number of ()

3. Scientific specialization

Medicine () Business Administration ()

Otherwise, select ()

4. administrative level

Director general ()

Director ()

Otherwise, please explain ()

5. Years of Experience

Three years or less ()

4-7 year ()

8-11 year ()

12 years and over ()

6. Employment

Medical specialty ()

Administrative specialization ()

Second/ the questions related to variables of the study

First variable: Six Sigma

Second: axis of the study: kindly tick (✓) where you see appropriate:

Clauses						
First: the support and commitment of top management		1	2	3	4	5
1	Administration works on providing conducive environment to adhere to quality standards at work					
2	Administration seeks to allocate appropriate budget for the implementation of quality improvement programs					
3	Management is committed to the principles and foundations of contemporary quality implementation of programs					
4	The management is concerned with the department of quality management in the hospital and follows up its performance and benefits from its results and proposals					
5	The management encourages cooperation with applicable authorities locally and internationally and takes advantages of it when implanting					
6	The management supports the proposals to develop the services					
Second: Continuous improvements						
1	The management considers the principle of continuous improvement of performance as a basis to achieve quality programs					
2	The management tries to identify the patient's suggestions and adopt them in the process of improving the quality of services in the hospital.					
3	The management conducts a comprehensive and ongoing review of administrative procedures to achieve concepts to improve the quality of service at the hospital.					
4	Implementing the contents of quality leads to reduce errors in the administrative and financial procedures, and when the delivery of services to the patient in the hospital.					
5	The management encourages (by rely on modern techniques) procedures and make the improvements on the software used in the various units of hospitals.					

6	Implementing the contents of quality in the hospital leads to diagnose unlikely cases precisely.					
Third: Human resources and trainings						
1	The management appoints experts and consultants in quality management program.					
2	The management provides trainings according to clear basis and standards for employees in various administrative levels in quality fields.					
3	The management considers all employees as a part of quality improvements.					
4	Management recognizes that the employees are important parts of the elements of quality improvement.					
5	The management means the continuity of the trainings and evolve them to develop the applicable quality programs.					
6	The management implements training programs based on clear principles and standards.					
Fourth: Processes and Systems						
1	The management focuses the efforts of quality programs toward various administrative and financial operations.					
2	Management recognizes that the different processes and activities are the starting point for program quality.					
3	The management works to develop the exchange and flow of information between the different sections associated with quality programs System.					
4	The management works on establishing the preparation and implementation of quality program database.					
5	The management provides Direct contact system with coaches of Quality Program.					
6	the management shows its willingness to use systems to help in choosing and trading- of between quality programs.					
Fifth: Reverse nutrition, performance measurement and incentive systems.						
1	management sets many financial and non-financial indicators to measure performance in accordance with clear criteria.					
2	management seeks continuous evaluation of the results of the quality programs and corrects mistakes and deviations.					
3	management has the willingness to link the incentives, rewards and promotions system to the quality programs success.					
4	Supported Measurement and Evaluation methods contribute to improving the overall performance of hospital.					

5	Management relies on multiple methods for measuring and monitoring of the performance to obtain the necessary information to plan its effectiveness with respect to presenting services to the hospital.					
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Second variable: the quality of service

First : The speed of response: Management of the hospital's desire to deliver the services to the patients on timely manner.						
1	Management seeks to achieve speed in responding to patient service.					
2	Management responds quickly to requests from outpatient.					
3	Employees determine precisely when they can offer their services.					
4	The staff in the hospital are keen to provide their service at a precise time.					
5	The hospital operations are characterized to communicate with the patient during hospitalization.					
Second: confidence and affirmation: indicates to earn patients faith, loyalty and satisfaction.						
1	The management is characterized by its precise financial transactions and statements presented to the patients.					
2	The staff of the hospital possess personal dignity and honor.					
3	The staff of the hospital possess skills and high efficiency in delivering the needed services to the patient.					
4	The staffs are keen to avoid any mistakes in delivering the services.					
5	The possesses the high level of safety when dealing with patients.					
Third: the sympathetic: it means the hospital workers' outstanding importance and the level of patient care						
1	The hospitals staff understand the needs of patients accurately.					
2	Employees possess a high level of kindness and respect.					
3	The hospital takes the customs, traditions and norms prevailing in society when serving the patient.					
4	The employee give personal care to each patient.					
5	The employee are always willing to cooperate with patients.					

Supplement (3)

List the names of the jury to form questionnaire

Seq.	Scientific title and certificate	The name	Specialization	Site Work (faculty /university)
1	PHD	Bayar M. Rashid Omer	Management	Director of Quality Assurance Unit-Cihan university-Duhok
2	PHD	Zeravan Abdulmuhsen Asaad	Management	Head of the Department Finance and Banking-Cihan university-Duhok
3	PRO.	Mthfar Hammed Ali	Management	Lecturer at Saladinuniversity Erbil
4	PHD	Aram Masoued	Management	Lecturer at Cihan university-Erbil
5	PHD	Khald hammed amen merxan	Management	Lecturer at Saladin university Erbil
6	PHD	ahlam Ibrahim wale	Management	Dean-Saladin university Erbil
7	.PHD	Mhabitnure Abdulla	Management	Head of Tourism DepartmentSaladin university Erbil

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İngilizce	KPDS (....) ÜDS (....) TOEFL (....) EILTS (....)
...	Çok iyi

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