



An-Najah National University
Faculty of Graduate Studies

**ASSESSING SERVICE QUALITY AND
CUSTOMER SATISFACTION USING
SERVQUAL AND KANO MODELS: A CASE
STUDY APPROACH IN SOFTWARE INDUSTRY**

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**This Thesis is Submitted in Partial Fulfillment of the Requirements for the Degree
of Master of Engineering Management, Faculty of Graduate Studies, An-Najah
National University, Nablus, Palestine.**

2023

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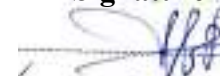
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Dedication

لأنَّ نسبة الفضل إلى أهله من شيمِ الوفاء، ولأنَّ وشائجَ القلوب تُفضي إلى صدق الانتماء

أهدي رسالتي هذه إلى عنوان الوفاء، ونبراس الطريق، أبي وأمِّي الحبيبين اللذين دونهما ما اهتدينا سواءَ السبيل

إلى صِنوِّ الروحِ والفؤاد، أخويَّ الحبيبين: أخي الغالي كريم، وأختي الحبيبة فرح

إلى سكّني وسكّنتي، عنوان القلب ونبضه، شريك العمر أيمن

إلى أصحاب الفضل العالي، عنوان المرحلة، وسفراء العلم والمعرفة، أساتذتي الكرام، ومشرفي الدكتور الفاضل

يحيى صالح

إلى وطني العزيز، الذي لا أرضى عنه بديلاً، ولا أحيده عنه قيد أنملة، فلسطين الهوى

إليهم جميعاً أهدي هذه الرسالة.

Declaration

I, the undersigned, declare that I submitted the thesis entitled:

ASSESSING SERVICE QUALITY AND CUSTOMER SATISFACTION USING SERVQUAL AND KANO MODELS: A CASE STUDY APPROACH IN SOFTWARE INDUSTRY

I declare that the work provided in this thesis, unless otherwise referenced, is the researcher's own work, and has not been submitted elsewhere for any other degree or qualification.

Student's Name Yusra Shebli

Signature Yusra

Date 28/5/2023

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Abstract

This study aims to assess the services quality and customer satisfaction in the software development industry in Palestine. To achieve the objectives of the study and answer its hypotheses, the researcher used the descriptive analytical approach which is based on the study of the problem.

The researcher also used a questionnaire to collect data by surveying the sample of the study which consists of 160 participants from Al-Israa software company customers.

The research findings indicated that the results of perceived and expected levels of quality in the software industry sector using the SERVQUAL model show that the mean of expectations is higher than the mean of participants for all services quality dimensions, and the degree of customer satisfaction was moderate which achieved 73.2%. In addition, tangibles, responsiveness, and assurance factors do not affect customer satisfaction in the software industry sector, but the reliability and empathy factors affects customer satisfaction in the software industry sector.

Based on the results of the study, the researcher recommends a set of recommendations, which focus on software development companies benefits of the Kano's model research findings to improve the services offer and identify the specific services that increase client happiness, and the necessity for Palestinian software companies to create organizational structures and methodical strategies to deliver services in accordance with client requirements rather than relying on the skill of personnel. According to Kano and SERVQUAL analysis, the key components that require re-evaluation in terms of significance are those related to time, specifically: communicating to customers when the service will be given, delivering service on time, and minimizing overall waiting time.

Keywords: Customers; Kano Model; Satisfaction; SERVQUAL; Software.

Chapter One

Introduction and Literature Review

1.1 Introduction

Customer satisfaction is one of the primary objectives of all businesses to ensure their survival and sustenance. Customers are a force in favor of companies that do their best to attract, gain and retain their loyalty. Achieving a high degree of internal customer satisfaction for companies ensures the satisfaction of external customers, which makes companies continue in the market, grow, develop and protect themselves from bankruptcy. Customer satisfaction is a measure of performance for organizations and a controlling factor for marketing by comparing what the customer gets with what was expected, reducing organizations threat to it. The extent of its compatibility with its products or services, and thus customer satisfaction, increases the organizations ability to help it reach the best level of growth by satisfying the needs and desires of customers from the organization products, which increases its profits and maintains its market share (Suker, 2021).

It 'shouldn't be denied that the quality of services for various business fields is one of the essential issues which researchers and specialists are most concerned about, the growth of services and the increase of companies operating in the same activity to the existence of competition in the current economy is based on competition, where companies are keen to possess competitive means that help them compete to ensure excellence and continuity, due to complex nature of customers because of technological progress in terms of information earning on products and services, the reliability of products has become an essential part of any checklist for purchasing a service or product irrespective of the geographical location (Odeh, 2021).

Previous studies that have shed light on the quality of organizations services used to perform customers satisfaction in one-dimension only. Nowadays, service organizations' awareness of the importance of achieving quality in services has increased to achieve excellence in their performance and gain a competitive advantage, given the role that service quality plays both services supplier and the recipient. Organizations must follow appropriate strategies and multiple means to achieve the

desired quality service, and provide the best service to the beneficiaries (Lee and Chen, 2006).

This study applies a refined Kano model developed from the traditional Kano model that was used in much previous research. The traditional Kano model has been used in related studies to determine features of services that achieve customer satisfaction. The Kano model has mathematical ways to calculate the relevant information more quickly and easily. The refined Kano model has been combined with quality function deployment (QFD) to classify 'services' features of customer satisfaction, make the required improvements, and measure the levels of such improvements. Some recommendations have been given by Bukhlouh (2020) for the specialist to encourage the operation process and thus enhance performance. Companies and business organizations seek to hold the customer's loyalty by providing the best products and services. Considering the great competition from companies and competitors, companies seek to achieve client satisfaction by providing the best services and focusing on those services being of high quality.

Many previous studies have dealt with the connection between the quality of provided services and client satisfaction, so they have approved the high influence of the quality of services on achieving customer satisfaction (Suker, 2021). Moreover, Ismail (2021)'s study highly agrees with Suker (2021) in that the level of services qualities greatly impacts satisfying customers. Furthermore, the findings of Bukhlouh's study (2020) have shown a major statistically significant effectiveness of service quality in enhancing customer satisfaction; this was stressed by Abdullah's study (2020), which has shown a positive impact on the quality of service in attaining customer satisfaction. In addition, Ismail (2020) indicates the same results as the above-mentioned studies in that service quality greatly influences customer satisfaction. Finally, Sharif (2020) agreed with the importance of the quality of the services provided in business for achieving customer satisfaction in various domains (tangibility, reliability, safety, responsiveness, and empathy).

On the other hand, Al-Bakkar (2022) study disagree with the above-mentioned studies, he concluded that the quality of services could not capture customer satisfaction, the study found that service quality has no statistically significant impact in its dimensions

(tangibility, safety, trust, reliability, and speed of response) on achieving customer satisfaction.

Despite that, service quality has become one of the modern competitive strategies for all organizations and companies, which makes it a free and openly competitive market. Customers currently have different alternatives to choose according to what suits them, as they look at the quality of the service from the foundations of choice, which are imposed on the company departments to understand the needs of customers to achieve their needs and working to gain their loyalty. This is a very crucial factor in competing with modern markets that direct their attentions to attract customer satisfaction rather than focusing on the quality of the products (Ismail, 2020).

Therefore, the significance of high-quality customer service is becoming increasingly clear as a requirement for winning over new clients, earning their happiness, and attracting them across all industries. Any commercial operation now places a high priority on service quality. Customers' expectations, which are reflected by their beliefs about the service and act as the benchmarks against which the performance of the service is measured, are used to assess the quality of the service. As a result, because customer happiness has grown to be the center of attention for service and profit institutions, the quality of services in all dimensions and the attainment of customer satisfaction have become obsessions. They are always looking for and figuring out what the "clients" wants and expectations are, and they give them a service that makes them happy with the institution. (Munusamy, 2010).

In addition, the scope of competition between companies is expanding, as these companies seek to have products according to the aspirations and desires of the customer, and this will be achieving high quality services and products, getting closer to the customer, listening to their needs and responding to them, and thus providing high quality services that aims at achieving 'customers' satisfaction, gaining their trust then enhancing the company's competitive position (Bukhlouh, 2020).

The current study aims to indicate and analyze the connection between the services quality and customers satisfaction in software companies in Palestine. More specifically, the SERVQUAL and Kano models are employed to model and investigate

this relationship. More details on the SERVQUAL model are given in the following sections.

1.2 Software Industry Sector in Palestine

After the signing of the Oslo Peace Accords, the creation of the Palestinian National Authority (PNA), and the privatization of the telecom sector in the early 1980s, a group of hardware resellers for major hardware vendors observed an increase in demand for hardware and software from governmental and not-for-profit clients. This led to the emergence of a surge of innovative ICT product and service suppliers, many of whom are currently thought leaders in their fields.

The Palestinian economy now depends heavily on the ICT sector, which contributes \$530 million in yearly value addition and accounts for 7% of the GDP. Industry is becoming more and more competitive. It provides services to businesses in the area that are immediately onshore and is trying to expand its business with global customers like Intel, Siemens, Volvo, Microsoft, and Microsoft to name a few. The majority of sector-related services fit structurally into one of four groups (listed below), with contact center services and applications-related information technology (IT) services making up the bulk of what Palestinian businesses presently sell to clients at international corporations.

International companies have established a foothold in the local market after many years of activities, much like other Palestinian business sectors, through many alliances and direct and indirect presence agreements. On the other hand, Palestinian businesses have built up a clientele of foreign businesses operating locally or globally. The table below lists a selection of active companies from both the IT and non-IT sectors of the industry.

As a firm specializing in the creation of cutting-edge and cutting-edge software at the level of the nation and the Arab world, Al-Israa Software firm for Programming and Computer was founded in Nablus in 1997. More than 50 people are now employed by Al-Israa, and they are split up into the major areas of research and development, operation and follow-up, marketing and sales, finance, audit, and quality. To better service and follow up with clients in the central and southern areas, the business created a branch in Ramallah in 2004 in addition to its headquarters in the city of Nablus.

International Standard Classification of Occupations (ISCO) has built a solid reputation as one of Palestine's top software development businesses over the course of the last five years. ISCO's main areas of interest include information systems integration and specialized software development. Since the company's founding, ISCO has concentrated on offering integrated software and services solutions to a diverse clientele, satisfying clients that range from small and medium businesses to huge corporations.

More than 7000 clients in Palestine, Saudi Arabia, Jordan, and other nations have chosen the Al-Israa company's services and goods. To advance and raise the level of business in all sectors at the national level, the firm is interested in creating and executing integrated financial and administrative solutions of the highest worldwide caliber.

1.3 Problem Statement

Since the high spread of technologies worldwide, services in all business fields keep changing to adapt to the developments of the technological age. Therefore, these huge changes in electronic life have completely changed the attitudes towards services and their designed models. Also, modern theories have affected the matter of services quality in business fields. For example, software suppliers work as hard as possible to provide distinguished services and unique customer experiences. This leads to increase demands on systematic approaches that may identify customers' needs and behavior. Also, it sheds light on various scientific methods that analyze different content of the database.

This study aims to assess the service's quality following customer satisfaction in the software development industry in Palestine. To achieve this, the well-known SERVQUAL model is used to assess service quality, and the 'Kano's model is employed to assess customer satisfaction in an integrative manner. The study develops a scientific framework using Kano questionnaire to measure consumers' perspectives towards the features of service assessed by the SERVQUAL model; the elements are classified in accordance with required improvement.

Software industry managers may enhance service quality and increase customer satisfaction by integrating the SERVQUAL scale with the Kano model to provide an

appropriate action strategy. There are various distinct perspectives on service characteristics. These perspectives are based on the attributes' roles in alternate assessment processes, how they relate to software products, how they provide value, how they increase customer pleasure, and how they improve quality. One of the most popular model for measuring service quality is SERVQUAL, which defines service quality as the discrepancy between customer participants' expectations and actual firm service quality performance. As a result, expected quality and perceived quality make up service quality. Expected quality defines the customer's expectations for the service they have gotten, in contrast to perceived quality, which is described as the customer's assessment of the general position and perfection of the service they received.

1.4 Research Questions

Considering the presentation of the study problem, the main questions raised by the study can be summarized as follows:

1. What are the perceived and expected levels of quality in the software industry sector in Palestine using the SERVQUAL model?
2. What is the customer satisfaction level about software industry sector in Palestine using the Kano model?
3. What are the impact of dimensions (tangibles, reliability, responsiveness, assurance, and empathy) on the customer satisfaction software industry sector?

1.5 Study Hypotheses

The main hypothesis of this study is: Service quality dimensions (tangibles, reliability, responsiveness, assurance, and empathy) affect customer satisfaction in the software industry sector in Palestine.

More specifically, the following sub-hypotheses are formulated:

- Tangibles affect customer satisfaction in the software industry sector in Palestine.
- Reliability affects customer satisfaction in the software industry sector in Palestine.
- Responsiveness affects customer satisfaction in the software industry sector in Palestine.
- Assurance affects customer satisfaction in the software industry sector in Palestine.
- Empathy affects customer satisfaction in the software industry sector in Palestine.

1.6 Importance of the Study

The current study investigates the level of service quality offered by software industry companies. Moreover, it gauges the influence of applying an effectiveness feature of service to attain the required quality and enhancing customer satisfaction. This proves that more efforts must be afforded by the software industry. Furthermore, the current study sheds the light on a crucial matter, which is the connection between quality services and the customer satisfaction, this may motivate other researcher to pay much attention to such a crucial topic due to its importance and effects. In addition, the significance of the study arises from the effects of SERVQUAL –based service quality dimensions (tangibles, reliability, responsiveness, assurance, and empathy) on Kano-based customer satisfaction in the software industry in Palestine. In addition, the current study determines the important factors of long-term performance in developing markets; through identifying the needs and desires of the customers.

1.7 Research Objectives

This study aims to explore the relationship between customer satisfaction and service quality dimensions by assessing them in the software development industry. More specifically, the study also aims to achieve the following objectives:

1. To assess the perceived and expected levels of quality in the software industry sector in Palestine using the SERVQUAL model.
2. To measure the customer satisfaction level in the software industry sector in Palestine using the Kano model.
3. To identify the impact of SERVQUAL dimensions (Tangibility, reliability, responsiveness, assurance, and empathy) on the customer satisfaction in software industry sector in Palestine.

1.8 Literature Review

1.8.1 Theoretical Background

Quality has become a strategic tool that enables institutions to compete and excel in light of the rapid changes in the environment. When we use the term quality, it becomes clear to us that the service is excellent and meets users' expectations. Quality acquires its importance from its role in helping organizations achieve a competitive advantage, as

quality is an administrative policy followed by institutions and bodies to reach the required level of excellence (Odeh, 2021).

Alwan (2005) explained the importance of quality in the changing environment. It increases profit by discovering errors and working to avoid them is beneficial to the institution or organization in terms of reducing cost, time, and effort. The organization's obligation is to bear legal responsibility in the event of damages to customers due to inappropriate services, and thus remove potential damages in the case of poor services.

Quality is a concept that enables organizations to achieve their goals constantly to be able to keep pace with emerging developments and challenges, as organizations must take all measures and strategies and follow all means and methods to provide the best service to the beneficiaries. In addition, quality creates a unique feature to maintain customer' satisfaction and positive competition, where it has been considered as a priority by depending on assessment that received from consumers (Zeithaml & Bitner, 1988).

The software industry has developed highly in recent years; it must work hard to attract consumer satisfaction by providing effective quality services with competitive fees. Nowadays, customers are more interested in the quality of the services rather than just focusing on the amount of money being paid for the services. In other words, customers prefer to spend more money to be satisfied with the quality and results; they care more about the quality than the quantity. For example, in software services, customers would keep modifying their apps until they reach their potential, even if they would pay a lot of money (Karaki, 2010).

Businesses must pay close attention to the discrepancies between 'customers' expectations and their perceptions of the level of service quality. The SERVQUAL scale is developed using a model of the service quality gap based on the idea of expectation-disconfirmation. This scale has been widely used to assess the degree of service quality in numerous service-related businesses. A model called the importance-performance analysis (IPA) helps management to direct quality by applying marketing tactics. Additionally, it helps staff members to recognize the defining characteristics when boosting service quality and client happiness. The IPA are used to examine business choices since they assist firms understand their present competitive

environment, as well as possibilities to enhance business operations and provide strategic direction for the company. (Muhammad, 2020).

The two-dimensional quality of the Kano model was assumed. To create a desired product or services that readily satisfy customers' demands, an analysis is used as a technique. The Kano model's objective is to raise a particular product or service's quality in order to increase competition and satisfy customers. The Kano model may also be used to improve the quality of service in healthcare facilities, as well as to identify the essential components of high-quality goods and services and to satisfy consumer expectations. (Cheng & Lin, 2011).

1.8.2 Service Concept

The expansion of the services sector, the increase in specializations in its fields, and the increase in investments in it helped to the emergence of new competitors at the local, national and international levels, defying traditional concepts and practices in its management, and services became the main and most important field of competition. For any measurement and assessment, there is a need for a serious pause and to search for means that help rationalize the use of resources in it, as services have turned into scientific specializations and enjoy high technical expertise, which requires that they be managed in a rational and correct manner (Najm, 2010).

Therefore, one of the most prominent features of the past three decades of the last century was the massive growth in the service sector, which led to the continuous emergence of new services that differ from traditional services and cover a large part of the requirements of daily life as the service sector has become one of the important and basic sectors of employment in the world (Hussein & Abboud, 2016).

The concept of service remained unclear for a long time due to its association with material goods, but the development of life and the increase in demand for various types of services and the increase in spending on them, with the difficulty of describing them because of their intangible nature, all of this led to interest in its concept and the emergence of several definitions for it. There are services that are fully or partially associated with the physical commodity, such as buying a car, which is often sold with a package of services, while other services represent complementary parts of the process of marketing sold goods, such as the information on food preservation boxes, and there

are types of services It is provided directly without requiring its connection to a commodity such as (health services, insurance, municipal services). These multiple service functions s have developed the concept of service for several interpretations (Levens, 2012).

Customers may interact differently with the same service, and the same customer may interact differently with the same service in different circumstances (Zaribaf, 2012). This is also confirmed by the relationship's opinion that it is difficult to give a clear concept of service, due to the difficulty of limiting the characteristics and behaviors directly related to the service.

The International Standard Organization (ISO), the ISO 8402 standard, defines service as “a result that arises from the activities in the interaction between the supplier and the customer, and from the internal activities of the supplier to respond to the needs and desires of the customer” (Al-Obaidi, 2015).

The American Marketing Association (AMA) defined services as “intangible products, or they are to a large extent, and they are not transported or stored, and they also perish quickly. If they are completely intangible, they are exchanged directly from the producer to the user” (Al-Shablawi, 2016).

According to above, there is no clear agreement on the definition of the term service. There are many different points of view, but they give a similar concept.

Through the above definitions and the viewpoints of researchers and writers, we find that there are elements or concepts that help in the completion of the service that form the so-called (service triangle), and enable senior management in companies or organizations to think clearly and accurately to form a clear vision regarding the service industry and its provision, which is related to the service industry; including the following:

1. Assistance in designing service systems
2. The upper management directs not to fall into many of the problems that face the production of the service.
3. One of the benefits of the service triangle is to identify the reasons for providing poor services to the customer.

From the aforementioned, the service is defined as an intangible performance or activity that is provided by organizations to the beneficiary customers and does not result in ownership and cannot be sold and aims to fulfill their desires and needs and requires interaction and communication with customers.

1.8.3 Services Quality

Multiple viewpoints have appeared for writers and researchers in defining the concept of quality for services and commodities, because of the different characteristics of each of them, or even its price, and from the point of view of the service provider, it is associated with the conformity of the service to the specified specifications.

The term "quality" is derived from the Latin word "qualitas," which refers to the nature of an object, its degree of solidity, or the nature of a person. Originally, the term meant accuracy and perfection, but more recently, it has taken on new meanings because of the growth of management science, the industrial revolution, the emergence of large corporations, and increased competition (Kaddoura, 2011).

Quality is defined by the European Organization for Quality Control (EOQC) and the American Society for Quality Control (ASQS) as "the total sum of features and characteristics that may affect the ability of a service or good to meet specific customer needs" (Coleman, 2014).

The ISO 9000: 2000 standard defines quality as "a set of distinguishing features of services, activity, performance, process, institution, or person, which makes her/him able to meet the expected and declared needs of the customer, or that s/he is able to meet them in the future." Therefore, quality represents a set of attributes and characteristics of services that determine their suitability to achieve the purpose for which they were produced in order to meet the expected desires of the customer (Al-Nsour, 2012).

The researchers define service quality as the condition of discordance between participants' expectations and those of beneficiaries. The degree of pleasure that the service may achieve for the beneficiaries and consumers by meeting and fulfilling their wants and wishes is another way that some people define the quality of service. (Salman, 2016).

Service quality is defined as the degree of satisfaction achieved from customer service by meeting their needs, expectations and desires, or it is the degree of harmony between customers' expectations and participants of the service. Some also define service quality through the three dimensions of services (Abboud, 2014):

1. The technical dimension is the application of science and technology to a specific problem.
2. The functional dimension is represented in the models in which the process of transferring quality to the customer takes place, and this is represented by the psychological and social interaction between the service provider (the supplier) and the customer who uses the service.
3. Material capabilities, which is the place where the service is provided and spoken. Defining service quality as a dynamic state related to physical goods, services, people, processes and the surrounding environment, so that this state is in line with expectations.

Through the above definitions of service quality, we infer that service quality depends mainly on the extent of harmony between what customers desire and what they actually get. Customers' expectations for service, if they are consistent with what service providers provide and accomplish, there will inevitably be a quality of service that leads to satisfaction, for both parties, as well as the continuation of communication and relationship between them.

1.8.3.1 The Dimensions of Service Quality

The dimensions represent the foundations through which the customer looks at how to organize information related to the quality of service in their minds, so the individual tends when s/he perceives events, things, or individuals to organize his participants'. To link the things that are perceived with each other so that it forms an integrated system and is interpreted through certain meanings and indications. In the context of defining these dimensions, the study carried out by (Lewis & Boom) in 1983 dealt with the importance of results and processes in defining service quality. As for the processes, they mean the procedures for providing service to the customer, as indicated by Greenrooms in 1994 that the service is not a one-dimensional concept, but rather includes multiple dimensions related to the essence of the service and the services supporting it. There are three dimensions of service quality, namely: technical quality

(technology), which is related to what will be received by the customer, which is the essence of the service and functional quality: it is the way in which the service is provided to the customer, i.e. the model of providing the service, and the image of service institutions as a dimension. The customer's participants of the previous dimensions are poured into, which is reflected in her/his overall evaluation of the quality of service (Hamoud, 2016)

Parasuraman, et al. (1985) and Lovelock (1996) indicated that when they looked at the research related to quality of service, they found that there are many problems facing researchers in interpreting and measuring service quality, and the reason, in their opinion, is that these researchers use one dimension in their view of the quality of service, so they worked on trying to find the dimensions through which the customer perceives the quality of service. As the Parasuraman (1985) study found, according to the focus group, customers used ten dimensions in assessing the service response quality: responsiveness, reliability, competence, access, courtesy, communication, credibility, security, understanding the customers, tangibles.

In other studies, conducted by (Zeithaml & Bither (1996), Babakus & Boller (1992)) the criteria for the previous ten dimensions of service quality were reduced and standardized to five dimensions in which the customer evaluates the quality of service in considering them, including:

1. Equipment, facilities, personnel and tangible objects
2. Reliability in dealing.
3. Response speed
4. Confidence in dealing
5. Attention.

Below is a brief presentation of these five dimensions:

- **Reliability:** It expresses the ability of the organization or institution from the point of view of customers to provide services at the time the customer requests and accurately, satisfying his/her ambition and desires. It also expresses the extent to which the organization fulfills its obligations towards customers. This dimension includes five variables that measure the organization's fulfillment of its promised obligations beneficiaries and its eagerness to solve their problems, its commitment to

health and accuracy in the performance of the service, its commitment to providing its services at the time it promised to provide the service to the beneficiaries, and finally its keeping accurate records of its contents and services (Kadoura, 2011).

- Responsiveness: This dimension relates to the ability of the service provider to provide service to customers permanently and to do so when the customer needs it, as well as the service provider's feeling of happiness and enthusiasm when providing the service to the customer and his/her readiness for that, such as a restaurant employee who is ready and willing to serve customers (Al-Shablawi, 2016).
- Tangibility: This dimension deals with the organization's physical resources, including tools, machinery, equipment, offers from service providers, and methods of getting in touch with them. The organization's internal and exterior layout is intended to give consumers a comfortable environment (Amin, 2016).
- Assurance: It refers to the behavior of the organization's personnel with honesty and kindness, and dealing with customers with confidence and making them feel safe. This dimension is of clear importance for the services that the customer desires and realizes because trust is an important and essential element in successful mutual associations, which represents the service provider's desire and willingness to adopt it in a specific commercial exchange. Or specific facilities for the customer to place his/her full confidence in all the employees of the organization (Hussein & Abboud, 2016).
- Empathy: It includes personal attention and care for customers, and it is the concern, care, and the ability of the institution to direct attention and increase efforts to understand the needs and desires of the consumer and provide what s/he asks for. In addition to being the degree of care for the beneficiary and taking care of him/her in particular, and the keenness to find solutions to his/her problems in refined human ways (Al-Naimat, 2015).

1.8.3.2 Service Quality Measurement

In recent years, the process of measuring the quality of services has faced a great controversy through many researches and specialized studies in this regard, with the aim of searching for the appropriate model for measurement through the dimensions and elements expressing the quality of service, and that the tremendous development that occurred on the standards used in the field of measuring the quality of goods. The

process of measuring quality in the services sector is still very difficult, as is common in productive industrial companies, due to its stereotyped nature, which may be reinforced in some cases, including (Al-Obaidi, 2013):

1. Lack of competition in the service market, especially public services
2. The difficulty of measuring the quality of services is due to the multiplicity of viewpoints that can be identified in two reasons: a) the perceptual difference of customers and b) the difference in their way of judging the quality of services.
3. The process of judging the quality of services is carried out according to the approach in which it is performed and not according to standards related to the service and its components.
4. The level of customer involvement and his or her capacity to supply correct information that aids service providers in identifying the wants and desires of each customer and trying to satisfy them depends on the quality of service, but some customers' lack of knowledge may impede this.

The aforementioned makes it evident that researchers cannot establish rigid criteria for evaluating service quality and apply them uniformly across all service businesses. Instead, it is imperative and necessary for each service sector to create appropriate metrics to assess the caliber of services delivered in the context of the environment, provided that these metrics include standards that simultaneously achieve the goals of the customer, the service provider, and the service organization. However, this does not exclude the existence of universal guidelines that may be used by certain comparable service firms (Najm, 2010).

The following is a review of the approaches to measuring service quality from the customer's perspective (Abdelkader, 2012):

1. Measuring the number of complaints: The number of complaints that customers submit to the company over a specific period represents an important measure that expresses that the services provided are substandard or that what is provided to them of services does not match their perception and expectations of them and the level they want to achieve. This measure enables service organizations to take the necessary steps to prevent the occurrence of problems.
2. The gap scale (SERVQUAL): This model is known as (SERVQUAL) and this technique is based on customers' expectations for the level of services and their

interpretation of the level of performance of the service previously delivered, followed by the identification of the gap between these expectations and participants' performance. The degree of concordance between the quality of services given to customers and what consumers anticipate from them is used to measure the level of service quality using the five dimensions that describe the manifestations of service quality mentioned earlier. To provide high-quality services, businesses must continuously strive to exceed their clients' expectations by researching, evaluating, and anticipating their needs., and it can be expressed as follows:

$$\text{Quality of Service} = \text{Expectations} - \text{Perception} \quad (1)$$

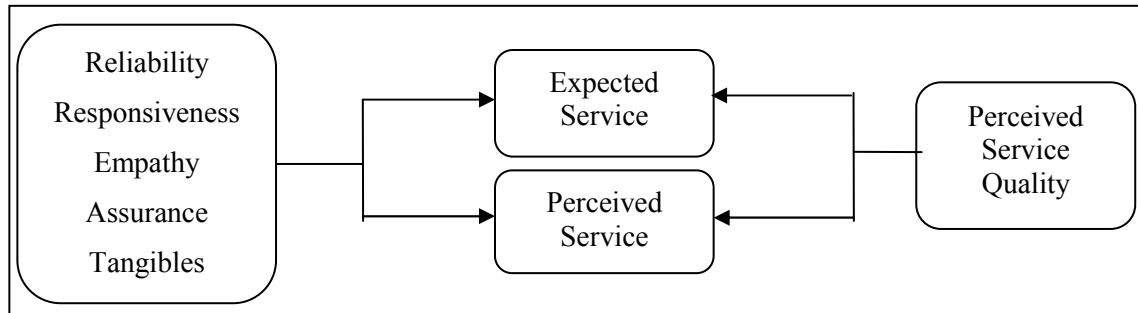
3. The actual performance model (SERVPERF): In 1992, researchers developed SERVPERF, a new model for measuring service quality that relies on assessing the actual performance of the service provided. This is because the quality of the service can be directly assessed through customer trends, and it can be expressed as follows:

$$\text{Service quality} = \text{actual performance} \quad (2)$$

The service's real-time performance provides customers with an accurate evaluation of the quality of service offered by the organization, without the need to compare it against their expectations. This evaluation model is more realistic and credible compared to using the SERVQUAL scale. However, it does not help management identify specific areas of strength and weakness in the service, which may be influenced by multiple factors beyond just the customers' experience, as in the SERVQUAL model. For a detailed breakdown of the components of the SERVQUAL model. Figure (1.1) shows the details of SERVQUAL model components.

Figure 1.1

SERVQUAL model



Note: Parasuraman et al., 1988

4. Value Scale: The link between the benefit and the price that establishes value is the foundation of this metric. This metric is available in-service institutions because the greater the perceived benefit levels of the service, the cheaper the cost of acquiring it is, increasing the value supplied to clients and, in turn, their demand for services. It pays to concentrate your efforts on giving your clients the best service at the most affordable price.
5. Satisfaction scale (Kano model): The most widely used model for measuring customers' attitudes towards the quality of services provided is by utilizing a set of questions that reflect the nature of their satisfaction or dissatisfaction with the services received. This model allows service organizations to identify areas of strengths and weaknesses in their services, enabling them to adopt a quality strategy that meets the needs of their customers and ensures their satisfaction. In this study, the Kano model is used to measure customer satisfaction with service quality.

1.9 Customer Satisfaction

In successful organizations of all kinds, customer satisfaction is a major factor in planning marketing and service activities, which is why researchers have paid a lot of attention to customer satisfaction, which is also a function of expected and perceived performance. Dissatisfaction can lead to abandonment of working with the organization in the future, if the performance meets expectations, the customer will feel comfortable and satisfied, but if the performance exceeds expectations, the customer will remain connected and loyal to the organization (Al-Naimat, 2013).

Many writers and researchers have mentioned various concepts of customer satisfaction, as shown in Table (1.1), according to their chronological sequence:

Table 1.1*Definition of customer satisfaction*

References	Definition
(Walker, 2010)	The knowledge or perception that customers have, the expectation, performance and evaluation of goods and services.
(Marshall& Johnston, 2010)	Evaluation of the good or service that achieves customer satisfaction and loyalty to the organization.
(Palumbo& Greena, 2010: 146)	A complex concept that cannot be measured directly because it is not related to the client's mental structure, desires and psychological directives.
(Fusser, 2011: 11)	The level of satisfaction or satisfaction at which customers stop looking for alternatives to a good or service. Customers communicate with the organization and interact with the product or service provided.
(Levens,2012: 71)	Customers communicate with the organization and interact with the product or service provided.
(Khan, 2013: 12)	The set of characteristics or attributes that can fulfill the desires and needs of the customer and are presented in a way that is better than that of competitors.
(Abbas, 2013: 183)	Active state that represents the customer's emotional reactions.
(Akbar, 2014: 9)	A positive emotional state of mind resulting from evaluating all aspects of working with the other party.

Through the concepts presented in Table (1) above, it is found that they share the most important characteristics:

1. Customer satisfaction is feelings, an emotional or cognitive reaction, and positive satisfaction that appears in the customer as a result of using a product or service.
2. Customer satisfaction is a process of continuous evaluation of the performance and work of service organizations.
3. Satisfying the wishes and needs of the customer in the best available way, that is, it is the process of comparing the services provided and what the customer expects.
4. Citizen satisfaction is one of the important measures and criteria in measuring the services quality, and it is the basis of our research by using the Kano mode.
5. Satisfaction is an essential point for the success and continuity of organizations.

It is clear from the foregoing that customer satisfaction is an unstable concept because it can be quickly touched by any negative change that may occur in the service delivery processes. The service provider also requires that s/he has a vision of the effects of the

service after its provision. Therefore, customer satisfaction must be followed up according to the following stages (Abdelkader, 2012):

- Understanding the needs and desires of the customer
- Activating feedback to follow up on customer feedback.
- Establishing a continuous measurement program to measure customer satisfaction.

Some also believe that there is a relationship between the performance of the commodity or service and the customer's expectations and the satisfaction achieved with her/him, and they see that the customer's satisfaction is a function of relative levels of expectations and perceived performance, meaning that the individual has three cases of satisfaction (Hamoud, 2016):

- If the results do not reach the level of her/his expectations, s/he will feel unfulfilled. the satisfaction.
- If the results are equal to her/his expectations, s/he will feel satisfied.
- If the results exceed her/his expectations, s/he will feel highly satisfied and pleased.

Customers have been classified into two types (Khan, 2013):

- Internal customers: The internal customer means the employees in the organization, and they are the people working in all departments who deal with each other to accomplish the work of a quality that is compatible with their requirements and the requirements of others.
- External customers: They are the ones who deal with the service produced by the organization and receive it in the form of final outputs.

Some concluded, based on the Kano model, that there is a relationship between customer satisfaction and the diversity of its requirements, and the organization must classify the customers' requirements into needs, expectations, and desires, due to the variation in their impact on customer satisfaction, and the organization must gradually meet those requirements and needs, starting with the basic ones that cannot be overlooked. And then add the rest of the requirements to reach the highest level of satisfaction when you can meet the attractive or exhilarating requirements. Therefore, these requirements are classified into three groups (Samuel, 2015):

1. Basic requirements: These requirements are not expressed by the customer due to the inevitability of their availability. When these requirements are not met, they lead to the customer's feeling of dissatisfaction and discontent.
2. Performance requirements: the group that the customer requests and expresses frankly, and there is a directly proportional relationship between the customer and the fulfillment of these requirements in the commodity or service and the level of satisfaction.
3. Attractive requirements: They are requirements that the customer does not expect, so s/he does not express them. Their availability makes customers happy, and their absence does not make them feel dissatisfied.

Through what has been presented, upon receiving the services or purchasing the commodity, it comes out with one of the following two results (Al-Naimat, 2013):

- A positive value and a sense of satisfaction if the actual characteristics and features of the product or service exceed or match expectations.
- Negative value and the feeling of dissatisfaction if the expectations of the characteristics and characteristics of the good or service exceed the actual characteristics of it.

1.9.1 The Importance of Customer Satisfaction

Customer satisfaction is one of the pillars of the survival of organizations and is the focus of their operations. Therefore, the importance of customer satisfaction came from here. This importance can be summarized as follows (Mezian, 2012):

1. The customer's satisfaction with the service provided to her/him by the organization will make her/his decision to return to it quickly and s/he will talk to others, which generates new customers.
2. Customer satisfaction with the service provided to her/him by the organization will reduce the likelihood of customers going to other or competing organizations.
3. An organization that cares about customer satisfaction will have the ability to protect itself from competitors, especially regarding price competition.
4. An organization that seeks to measure customer satisfaction can determine its market share.

5. Customer satisfaction represents feedback to the organization with regard to the service provided to it, which leads the organization to develop services provided to the consumer.

Customer satisfaction is a good indicator of the quality of service provided. Additionally, customer satisfaction helps organizations provide metrics to assess and improve capabilities. through the following (Salman, 2016):

- Submitting relevant policies and revoking any that have an impact on satisfaction
- It serves as a manual for organizing organizational resources and using them to the needs and goals of the customer conducting the latter's opinions, which are regarded as feedback.
- Determining the degree of performance of company personnel and if they will need additional training programs.

The importance of customer satisfaction can be determined through many axes and trends that deal with the various parties providing and benefiting from the service, and among these axes and trends (Kotler & et al., 2016).

1. Organizations that seek to provide products commensurate with customers' expectations must draw positive strategies and policies aimed at reaching the quality of the commodity or service.
2. The distinguished commodity or services provided to customers is one of the most important requirements for the continuity of the relationship between the service or production organization and its customers.
3. Customers are the ones who value build the expectation in their minds, and act on that expectation.

1.9.2 Dimensions of Customer Satisfaction

The dimensions of customer satisfaction are as follows (Meziane, 2012):

1. After the efficiency of the employees in the organization and their kindness in their dealings, and it includes: the good morals of the employees in their dealings with auditors, meeting their needs, their presence always at the top of their work, their implementation of transactions without discrimination and their adherence to the deadlines set for completing transactions.

2. After the procedures for the conduct of transactions, which includes completing the completion of transactions at a specified time without delay, clarity and simplicity of procedures, and their distance from routine.
3. After the services provided by the department, it includes: the effectiveness of the Public Services Office, the appropriateness of the informative signs indicating the locations of the directorates and departments, the availability of health facilities, appropriate waiting rooms, a photocopying service, the availability of parking lots, the presence of forms and documents related to the progress of the transaction at all times, as well as the effectiveness of the model of telephone communication with the department.

1.9.3 Measuring Customer Satisfaction

Customer satisfaction is one of the assets of the organization and one of the important things for business organizations because it is the main axis of its continuity. Staying in it has become for those who have a competitive advantage that cannot be imitated. Therefore, in light of the new changes, it has become necessary for organizations not only to achieve customer satisfaction, but rather to strive and using various models to measure the satisfaction of its customers, and the measurement of customer satisfaction was defined as “the efforts made by organizations to determine the extent of customer satisfaction with the services they provide to them with the aim of making the necessary organizational and programmatic adjustments so that they become more responsive to the needs and aspirations of the members of the community that serve them” (Khan, 2013).

Others believe that customer satisfaction is of great importance, so all organizations wishing to achieve continuity and growth in the market need to measure it (Al-Khafaji, 2012):

1. To determine the extent of customer satisfaction.
2. To help organizations identify the reasons for not achieving their goals.
3. To find out whether the target group has benefited from the service provided.
4. To find out if the management style followed achieves customer satisfaction or needs to be reviewed.
5. To help supervisors to expand the scope of activities and services provided by the organization to include other communities.

6. To avoid repeating mistakes in the same activities and services that the organization will provide.

And because customer satisfaction is an effective tool in achieving the goals of the organization, as the increased satisfaction of customers leads to an increase in its profits and the number of its customers, and the results achieved from measuring customer satisfaction are due to many positive goals of the organization, the most important of which are (Hussein and Abboud, 2016):

1. It helps business organizations understand customer behavior and identify customers' expectations, needs, and desires.
2. Its disclosure of possible differences in participants of the quality of the commodity or service provided to the customer and between the point of view of the organization's management.
3. It is a source of reliable information about the market, and thus any commercial organization can develop its plans accordingly.
4. It evaluates the organization's current position among its competitors and identifies competitive opportunities in potential markets.

1.9.4 Customer Satisfaction Challenges

Customer satisfaction is a measure of how well a company meets its customer needs. There are many potential challenges that businesses need to overcome in order to achieve customer satisfaction. Some major challenges include (Al-Khafaji, 2012):

1. The view of quality internally and externally: the quality measure was previously based on what the organizations possess of engineering techniques, production resources, and human resources, and their availability is considered the quality of the product or service, while some studies provided a lot of data related to commodities to develop the external view of quality that is based on the customer to the customer.
2. Quality of service: Organizations monitor the quality of the goods or services provided, and the customer is not responsible for the quality of these operations, and his role is limited to obtaining the service. Therefore, they must take effective measures and means to provide the service as required, and in the event of a defect in it, they must provide persuasion to the customer. For the resulting vinegar and alleviation of the situation.

3. Quality achieves profit: After conducting many studies and reports in organizations, it was confirmed that there is a relationship between quality and profit. Quality is a source of competitive advantage for organizations that leads to: Increasing the degree of loyalty. Pleasing the customer. Increasing the profitability of the organization in the medium and long term.

1.9.5 Relationship of Quality of Service to Customer Satisfaction

The relationship "satisfaction leads to quality" is wrong, the correct one is "quality leads to satisfaction". The evidence is that organizations that listen to their customers' needs ensure their satisfaction. Therefore, customer satisfaction becomes the primary goal of quality, because quality aims to improve service levels to achieve customer satisfaction, and a successful enterprise is one that listens to customers' opinions and provides services to customers. As a result, many organizations work with clients to design, develop and improve their services, as well as a continuous evaluation process for them, defining clear procedures for client complaints and suggestions, dealing with them and making every effort to deliver them to everyone, include those with special needs (every client gets special treatment, making them feel like they are the only clients of the organization). All this is done to make the client satisfied with the quality of service provided by the organization, and this satisfaction lies in fulfilling the client's needs as well as wishes and expectations. Are these needs, needs and expectations disclosed and does the organization use one or more customer satisfaction measures to collect opinions, complaints, observations, and suggestions. By responding to customer expectations and wishes and listening to comments and complaints, the customer's situation and the organization is moving towards greater satisfaction (Al-Obaidi, 2015).

1.10 Kano Model

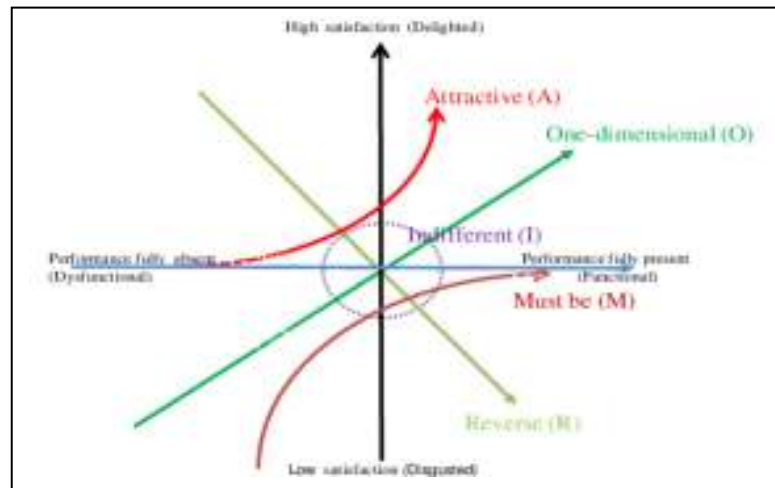
The Kano model is one of the quality management standards that are concerned with knowing the needs and expectations of customers and arranging their priorities to improve and develop the services provided. This model aims to hear the voice of customers, identify their desires, and classify them into the characteristics of the model.

Realizing the needs of customers and their requirements for the services provided is of great importance to managing these needs, so it is important to listen to the opinions of customers to understand and meet those requirements by using the Kano model to

classify them and identify the basic and important ones (Belhassen, 2012). Figure 1.2 shows the details of Kano model components.

Figure 1.2

Kano model



Note: Kano, 1984

1.10.1 The Origins and Concept of the Kano Model

The Kano model is a theory for developing goods and services, as well as improving customer satisfaction. This model was developed by the Japanese scientist Noriaki Kano and a team of three scientists according to a study (Attractive quality must be quality) published in the Journal of the Japanese Society for Quality Control in 1984. The study came in a Kano model chart showing customers' requirements for the quality of goods or services (Colean, 2014).

The Japanese scientist Noriaki Kano is one of the nine teachers in the field of management, as he was apprenticed by his teacher Ishikawa, who is also one of the pioneers of quality. Noriaki Kano worked as a university professor in Japan and was awarded the Deming Individual Award in 1997.

Professor Noriaki Kano is a preeminent thinker in the world of quality. He is also known as the conceptualist of the Kano Model (Quality Attractive) and Quality Control.

The Kano model is one of the models that shows customer satisfaction and explains the different situations and different things that affect customer satisfaction (Al-Barwari and Bashwa, 2011).

The objective of the Kano model is to assess customer satisfaction for the characteristics and characteristics specified in the services and goods provided by the organization, and the possibility of identifying and distinguishing the characteristics that have a significant impact on customer satisfaction/ Noriaki Kano pointed out the importance of studying the voice of the customer (VOC) because customers have hidden, invisible needs (Gupta & Srivastava, 2011).

The theory of the Kano model (attractive quality) is to achieve the best of how to develop customers' satisfaction and evaluation and awareness of quality characteristics as well as the attributes that are more important to customers than their improvement as well as indicating the extent of the difference in the degree of satisfaction of the customer.

1.10.2 Kano's Hierarchy of Customer Requirements Quality Management

According to what scientist Noriaki Kano proposed, similar to the Maslow pyramid for the gradation of human needs, the goal of attaining the highest quality and achieving complete customer satisfaction cannot be achieved at once but can be achieved with gradual hierarchical levels. Kano explained that this pyramid consists of three degrees or hierarchical levels of requirements for the organization to gradually meet those requirements, starting at the base, which is the minimum standards that must be met in the good or service, all the way up to the top of the pyramid when it is able to include features that customers did not anticipate, which increases their happiness and delight. (Pham, 2015).

The organizations that want to implement a correct philosophy and methodology for quality management must achieve three levels or hierarchical grades, as explained below (Al-Obeidi, 2015):

- The first level: This level of quality represents the minimum advantages that must be available in the good or service, and these advantages are usually known in advance to customers, and it is obtained.
- The second level: includes the advantages of the first level, but with a higher level of quality than the first level.

- The third level: This level includes aspects of quality that customers did not expect, as it not only achieves satisfaction, but also makes them feel happy and pleased because it exceeded their expectations.

1.10.3 Advantages of the Kano model

We can identify the advantages and benefits of the Kano model as follows (Samuel, 2015):

1. The Kano model helps to understand deeper the requirements of service and goods. It can identify the attributes that strongly affect customer satisfaction and the organization works to meet them.
2. If, for financial or technical reasons, there are deficiencies in some characteristic of a product or service that the organization cannot simultaneously provide, the organization may resort to Kano's characteristic to determine that the characteristic having that characteristic has the greatest impact on customer satisfaction.
3. In today's world, there is increasing pressure to continuously improve products and services. Organizations are strategically turning to innovative product and service designs for new characteristics. The Kano model enables the identification of attractive attributes that yield the greatest customer satisfaction.
4. The Kano Customer Satisfaction Model can be used in conjunction with other models and processes to improve a product or service and achieve customer satisfaction, just like a QFD tool. One of the basic requirements of this process is to identify, understand, and then categorize customer needs. This classification is one of the previous conditions in the QFD tool and uses the Kano model. Therefore, to determine the importance of individual item attributes to customer satisfaction, process activities aimed at improving the item are required.
5. The discovery and fulfillment of attractive needs creates opportunities for differentiation. A good/service that only satisfies a need must be viewed as one-dimensional, intermediate, and therefore interchangeable.
6. In general, requirements (attractive), (one-dimensional) and (should be) benefit expectations are different for different customer categories. From this point of view, for the solution of specific problems, suitable, tailor-made solutions can be formulated to ensure the best satisfaction of different categories of customers.

In short, the benefits of applying the Kano model in the organization can be identified as follows (Belhassen, 2012):

1. Determining customer needs and requirements.
2. Continuous improvement of commodity quality by focusing on quality attributes that delight customers.
3. Increasing product design efficiency.
4. Classifying and analyzing commodity requirements according to their importance from the customer's point of view.
5. Determining customer satisfaction or dissatisfaction.
6. Improving customer satisfaction and ensuring the success of organizations in the future.

1.10.4 Disadvantages of Kano Model

The Kano model has a number of disadvantages (Pham, 2015):

1. The Kano model takes the opinion of customers separately, but the classification of requirements results from the total vote of the total number of respondents to the questions, and thus it will marginalize the opinion of some customers and their opinions are not taken into consideration.
2. Limitations of needs and need classification: Kano's original model, which categorized each need based on the opinion of the majority of respondents, seemed sufficient for a clear correspondence of customer needs. Mindset, such an answer dominates all others, but it is less clear whether there is, for example, a narrow distribution of answers (25% for basic requirements, 24% for neutral, 27% for neutral attractive, 24% opposite) in this case, the classification of needs is less clear, which is one of the weaknesses of the Kano model.

1.11 The Proposed Conceptual Model

The perspectives of the service provider and the service users' participants both influence service quality. The opinions of service users can be used to evaluate a service. The service's quality may be determined by comparing the service's perception to expectations for the supplied service. Juran & De Feo ((2010) study aimed to measure service performance, there are several evaluation norms, which complicate

objective assessment. Businesses can keep clients and generate more revenue if the public has a favorable opinion of the service quality (Ghoneim, 2017).

Service quality measures are based on consumer satisfaction surveys and consumer expectations, determined by their personal needs, previous experience with the service providers themselves, and verbal communication. The idea of a quality scale was built on the issue of the conflict between expectations and consumers' participants of service quality. Moreover, competition is very important in a business environment, where measuring customer satisfaction is very important. Therefore, companies should use marketing techniques in a very professional way to meet 'customers' expectations. Consumer satisfaction with service quality is measured by the gap between their original expectations and actual participants of service. Therefore, high perspectives of service quality bring more guests, spreads favorable word of mouth, and increases brand loyalty (Abu Ali, 2021).

Quality is one of the most important strategic issues that concern any organization, especially service organizations, to raise its performance in terms of productivity and service. Nowadays, competition has increased, and quality has become one of the most important areas in academic research. Quality has proven its role as a strategic tool in achieving competitive advantage and supporting good relations with users. Service quality is essential for achieving customer satisfaction. Also, it relates to customer perspectives and expectations about the given service. It is a very crucial matter for the companies to focus on how to examine and improve the quality of the service. The service quality is a difference between 'consumers' expectations of services and their current participants'. Therefore, the quality of the service can be considered high when 'customers' experiences exceed their expectations (Al-Alak, 2021).

Service quality objectives are the main means used by government institutions and business organizations to focus on the ambitions of the management structure, as the quality policy is defined and written with the requirements of employees, targets, audiences and consumers, and its needs and objectives. Quality objectives in related tasks and levels, that these objectives keep pace with the requirements of the product, and are measurable, also they maintain the objectives of this quality under the quality policy through making all employees aware of the importance of the objectives (Kumaraswamy, 2012).

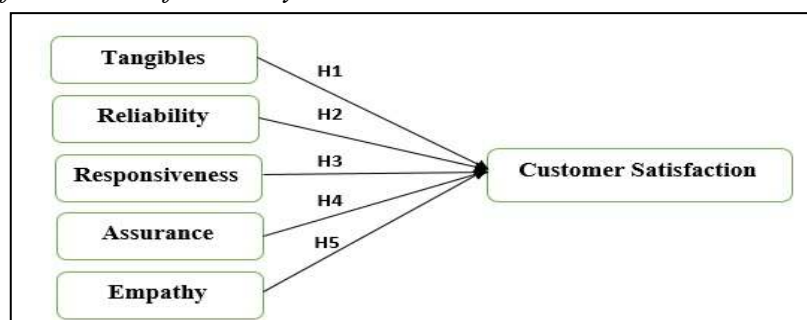
Moreover, Kumaraswamy (2012) study has devised a detailed conceptual model of service quality to assess the level of service quality. This is done by comparing the "consumers" expectations of the service with how they feel about the service. Several studies identified five dimensions for measuring service quality: physical assets, reliability, responsiveness, safety, and empathy, creating the SERVQUAL scale. Therefore, it takes a long time to measure the SERVQUAL scale and therefore cannot be used as a valid tool for assessing service quality in any organization (Zeithaml, and Bitner, 1985).

Customer satisfaction with the services provided is a crucial metric for assessing the quality of services provided, and satisfaction has taken center stage in the study of customer behavior to identify their needs and requirements. Many service companies are competing today to obtain the greatest number of customers who are satisfied with the services they specialize in providing. The researcher discusses the Kano model, customer happiness, and service quality in this chapter.

This study focuses on five main dimensions related to service quality (tangibles, reliability, responsiveness, assurance, and empathy) and customer satisfaction. Figure 1.2 shows the conceptual model of the study.

Figure 1.3

Conceptual framework of the study



Note: By the researcher

1.12 Previous Studies

Yang et al. (2010) study aimed to develop an integrated model between the Kano model and draws. The customer is used to obtain accurate characteristics of the quality of services that enhance customer satisfaction and raise the status of the researched educational institution. This model is also useful in evaluating the performance of the

educational institution. The results of the study showed high reliability of the model and that the priority of the researched institution should be to develop services where necessary. It enables the educational institution to make decisions to prioritize the most important service. The results added to the possibility of using this model in different sectors.

Rashid et al. (2010) study determined the development of a simulation system designed according to the Excel program that simulates the responses of customers according to the Kano model to find out the minimum possible number of customers necessary to determine the characteristics of the product if they are basic, performance or attractive qualities, and to discuss how to integrate the system into the process of developing goods in a more realistic manner. The application of the simulation system according to the Kano model helped the product development team to identify how to integrate the system into the product development process by determining the number of customers who should be asked to determine the characteristics of the product as basic, performance, attractive, negative, or neutral.

Ho et al. (2013) study proposed a new approach to decision analysis by integrating Kano's model and service quality to help the considered organization identify the essential characteristics of service quality that help to improve customer satisfaction. The study concluded that the Kano model is effectively combined with service quality to gain an in-depth understanding of the characteristics of basic service quality and customer perception, desire, expectation, and satisfaction, and help organizations set priorities to improve service quality. Hotel services help improve Satisfy customers and gain a competitive advantage.

Barzoki et al. (2014) study proposed a model for analyzing and classifying workers' needs by studying managers' behaviors that affect their motivation and performance by applying and testing Kano's model for this purpose. The study concluded that the use of the Kano model can identify five types of managers' behaviors that can affect the motivation of employees, which are (basic, performance, attractive, neutral, and the opposite behavior) and that there are 58 cases of behaviors classified within the attractive category that can affect employee motivation. And increasing their level of satisfaction if they are fulfilled, including (actively listening to workers and encouraging them to discuss, paying attention to motivating employees and encouraging

them to participate in decision-making, listening to and respecting all opposing opinions, creating a sense of belonging and loyalty among workers towards the organization).

Radfar et al. (2014) study identified and identified effective criteria for citizens' satisfaction with municipal facilities in the city of Tabriz in Iran, and the extent of the ability to understand and investigate the quality of service in the areas located within the city's municipal borders, and the importance of citizens' requirements to determine their expectations regarding the quality of services provided and try to know the characteristics of the service that citizens aspire to. It can help in strategic planning to achieve high citizen satisfaction by the municipality in question. The conclusions of this study, according to the analysis of the results, showed that there were three characteristics that emerged for the 20 requirements, which are (basic, performance, attractive), since 9 of the 20 requirements had basic characteristics, and 8 requirements were performance characteristics, and 3 of the remaining requirements were attractive. Most citizens have very high demands and needs for the quality of the basic requirements be-must, as most of the services that the citizen needs are concentrated in this dimension.

Apornak (2017) study indicated A tool with descriptive information and expert advices for analyzing customer demands and translating them into their required productions, QFD is used to measure customer satisfaction as a competitive advantage in organizations that lead to customer satisfaction. One of the most crucial steps in obtaining client happiness is identifying their wants. The Kano model may group requirements into three groups called "must be," "attractive," and "dimensional." We may combine QFD with Kano to determine the demands of our clients. The segmentation of consumer demands results in the presentation of services and goods that the customers desire. In this work, we focus on a semi-modern institution in our case study employing Kano model in QFD with classifying consumers' wants.

Addi (2017) study aims to identify the requirements that play a key role in the evaluation of customers for municipal services provided by the Municipality of Dora, as well as determining the level of satisfaction or dissatisfaction in the services provided in order to focus on the requirements of great importance from the point of view of customers that generate a sense of satisfaction and happiness The municipal

departments focus on them in order to serve the citizens. The research concluded with a number of conclusions, the most important of which was that the classification of customers' requirements was limited to three basic groups (M), one-dimensional (O) and one attractive (A), depending on the type of municipal service. No undisclosed requirements (I) or reverse (R) (Q). The results also showed that the requirement (pedestrian adequacy and non-exploitation for commercial and personal purposes) obtained the highest value of the index of satisfaction coefficient towards the municipality in the case of fulfillment, and the requirement (limiting the use of agricultural land for residential purposes and taking action against them) The highest index value of the coefficient of dissatisfaction in case of non-fulfillment and will work And citizens' dissatisfaction with the municipal district.

Mei and Ming (2018) study used The Google Play App Store contains more than 200 mobile security and antivirus programs, and it offers a wealth of functionality, according to research that utilized the Kano model to gauge user satisfaction with MSAs. In order to determine how consumers, score and rate the quality characteristics of these features using the Kano model questionnaire, this study integrates and extracts 12 mobile security and antivirus features from the top 25 suppliers of MSAs. According to the Kano model, the study divided the characteristics of mobile security and antivirus (MSA) applications into (attractive requirements, one-dimensional requirements, fundamental needs, neutral requirements, and inverse requirements). According to the study's findings, all characteristics are categorized into one-dimensional or neutral criteria based on consumer satisfaction values.

Min et al. (2019) study used the Kano model in the automotive industry to improve the services of car drivers in the future. A test study was conducted on a sample of 56 potential buyers of four-door sedans, and 56 valid survey lists were collected for statistical analysis. The questionnaire evaluated the respondents' added value and their satisfaction with 30 items or requirements across eight main dimensions of quality (basic safety functions, entertainment and multimedia systems, information and communication systems, value-added systems, and effective matching, automated service systems, hardware and software integration, and customer service), which were divided into two groups (specific functions and intangible value-added services). According to the sample's perspectives, the study concluded that the customer's needs

could be broken down into 30 different categories, including 10 "attractive requirements," "one-dimensional requirements," 3 "basic requirements," 4 "neutral requirements," and 6 "opposite requirements." In terms of refining the proposed product and lowering consumer unhappiness based on product quality categories, the Kano model has been highly successful.

Dewi (2020) Study integrates SERVQUAL with the Kano model to evaluate service quality, to identify the quality standards that needed to be improved, SERVQUAL was employed in the study. The quality standards at this approach are based on the discrepancy between what customers expect from the services they receive and what they actually get. The Kano technique is used to classify service characteristics that meet client demands in the meanwhile. By synchronizing the SERVQUAL gap value and the Kano model grade, SERVQUAL integration and the Kano model were completed. When service attributes from both ways are assessed, service attributes that will be the focus of management's efforts to raise service quality are produced. The findings demonstrated that the SERVQUAL weak kinds and appealing and one-dimensional categories were the attribute criteria that needed to be emphasized. Customer satisfaction will rise as a result of improvements in characteristics in appealing and one-dimensional categories.

Al Shabasi (2020) A proposed approach for measuring consumers' satisfaction with SME financial statements was created through research. Based on the Kano model, which is employed in the field of enhancing customer satisfaction, the researcher applied this concept to financial statements from the standpoint that they are the outputs of the accounting system or product provided by the accounting cycle, and that users of financial statements are clients to whom these "financial statements" are provided. The study is based on the deductive and inductive models and uses a sample of 130 items for a rigorous analysis. By including a list of user wants and requirements in the financial accounts and calculating the level of satisfaction, the Kano model claims with these requirements if they are available and the degree of dissatisfaction in the absence of them. The researcher presented a model for predicting the degree of satisfaction that can be used to predict the degree of satisfaction of users of financial statements. SEMs for the sample under study were 64%, while the average ratio of the degree of satisfaction of financial statements for small and medium enterprises users of the sample under

study was 57%. This study established a new scientific advancement in the field of accounting by connecting a quality model created expressly to gauge how satisfied accounting customers—users of financial statements—are with the financial statements themselves.

Dowidar (2021) study aimed to reach the characteristics of the Al-Rajhi Bank website according to the of Kano model for quality dimensions, as well as to determine the most important dimensions of website quality that bring joy to customers on the Al-Rajhi Bank website, and finally to check the indicators of satisfaction and dissatisfaction with the requirements of customers according to the Kano model. The researcher used the descriptive analytical approach, and the researcher relied on the sampling method and chose a simple random from the research community represented by all Saudis and residents who have accounts in Al Rajhi Bank, and the researcher reached many results represented in the possibility of dividing the quality of the bank's website according to the Kano model. Also, the site does not provide features that cause delight to the customer, as it turned out that the most important dimensions of the quality of the Al-Rajhi Bank website were one- dimensional, Must-be, Attractive, and Indifferent, or Reverse attribute or exciting quality characteristics in the Al-Rajhi Bank website, as it turned out. There are cases of dissatisfaction with some dimensions of the quality of the website, such as the quality of the organization of the site, and the quality of ease of dealing with the site.

The current study is distinguished from previous studies in its reliance on two models together (SERVQUAL and Kano Models) to assess the services quality following customer satisfaction in the software development industry in Palestine, while the software industry sector is one of the sectors that are not covered by previous studies, which focused on the restaurant sector or government institutions such as municipalities. Thus, the current study is concerned with a new sector to determine the needs of customers in order to gain their satisfaction based on the dimensions of the quality of services provided to them.

Chapter Two

Methodology

2.1 Chapter Overview

This chapter outlines the research types and approaches utilized in assessing service quality and customer satisfaction in the Palestinian software industry. It covers the research strategy and approach, data collection methods, research tools, questionnaire components, and sampling techniques used to determine the research population and sample size. Additionally, it explains how questionnaire validity and reliability were ensured and describes the study's population and sample. Finally, the chapter presents the data analysis techniques employed to test the proposed model's constructs and their relationships.

2.2 Study Setting

The purpose of this research is to evaluate the service quality performance and customer satisfaction in the Palestinian Software Industry from customer perceptions by considering differences between expectations and actual perceptions of service; furthermore, it provides a categorization of those elements in terms of importance and evidence of which parts of service need further improvement and what are the strongpoint.

The study data were collected through SERVQUAL and Kano questionnaire distribution to Al-Israa company customers. Convenience sampling was adopted to identify the respondents of the questionnaires.

Results of the two models are analyzed and integrated to evidence areas of service quality that need urgent improvement; those are recognized by selecting service quality items that resulted in high gap scores between customers' expectations and perceptions toward the service and concomitancy, with high scores in terms of importance.

2.3 Research Types and Approach

Research methods are the many techniques, schemes and algorithms utilized in research. Choosing a suitable research methodology is thought to be a crucial component of every research project. Research methods are any techniques a researcher uses when conducting a study. In essence, they are planned, scientific, and value-free.

The research type or research design is referred as "the conceptual framework under which research is done"(Akhtar, 2016). A good study design should also be theory-based, situational, doable, redundant, and effective. The three main categories for study kinds are exploratory, descriptive, and causal design. When there is little or outdated information available about a topic, exploratory research is used. Therefore, it is suitable for researchers who are interested in learning about and uncovering novel correlations, concepts, patterns, etc. In exploratory research, the review of the literature is thought to be the initial step in comprehending a problem. Even though the fact that this form of research relies on qualitative methods, using quantitative strategies is an option (Akhtar, 2016).

Descriptive studies or statistical research are typically conducted when it is necessary to characterize a topic of interest, such as a community or social events, and they typically make use of some sort of organized data gathering procedure, such as data observation or structured question interviews or questionnaires. Since hypotheses are regularly put to the test in this kind of research, it is confirmatory in nature. Descriptive studies come in two different varieties. Studies are specifically referred to as cross sectional if they offer summaries or descriptions of a business problem at a certain time. While descriptive studies use longitudinal studies to describe occurrences across time by gathering information on the sample units at different points. A causal link or change in one event leading to a change in the other (the effect), is known as a cause-and-effect relationship. Explanatory study, commonly referred to as causal research, looks at the connection between two events. (Hair et al., 2011).

Both quantitative and qualitative methods, or a combination of both, can be utilized in both basic and applied research. Quantitative research is based on quantitative measurements, which describe or express a process in terms of one or more quantities. The output of this type of research is typically a numerical value or a set of numbers. Quantitative research often involves the collection of data from theories, hypotheses, or experiments, which is then analyzed using statistical methods such as descriptive or inferential statistics. In contrast, qualitative research focuses on understanding qualitative phenomena related to quality.

Explanatory, descriptive, and exploratory research are the three primary categories. The goal of explanatory (causal) research is to establish the causal connection between the

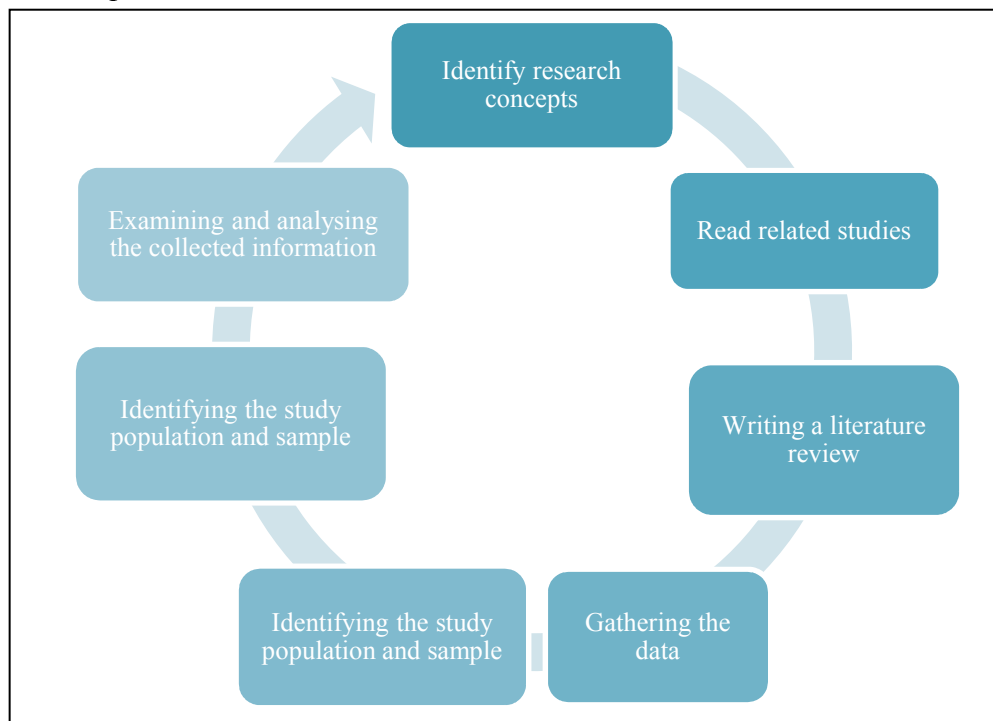
study variables. Descriptive research, on the other hand, tries to characterize the research features and offers responses to the who, what, where, when, and how inquiries. Finally, exploratory research is frequently employed to investigate an issue that has not yet been identified (Saunders et al., 2016). Because this strategy complemented the deductive (quantitative) approach, descriptive and explanatory research is employed.

Using of the SERVQUAL and Kano models, a deductive method approach is applied to address the study issues. In the Palestinian software industry sector, the amount of service quality is measured using deductive (quantitative) reasoning. The focus of quantitative research, according to Singh (2007), is on acquiring numerical data to explain a particular occurrence through data collection from surveys and questionnaires. As a result, the is employed in this study as part of the inductive process.

Accordingly, the research steps were developed as depicted in Figure (2.1), to provide the research data collecting strategy, to answer the research questions and hypotheses.

Figure 2.1

Research steps



2.4 Research Data

The study relied on two fundamental categories of data (primary and secondary data):

1. Primary Data: in this research the primary data were obtained from a structural questionnaire, which was conducted with Al-Israa Software Company customer's, where this research aims to describe and analyze their views, since this research aimed to describe and analyze their perspective, then the distributed questionnaires was collected and analyzed by making statistical analysis using Smart PLS computer software.
2. Secondary Data: This information, which was utilized to present the research's connected study, was gathered from a variety of sources, including books, journals, papers, websites on the internet, and several other resources and references that were accessible and pertinent to the research topic. In order to organize the study and categorize its objectives, which were to identify the variables influencing customer satisfaction utilizing software created by Al-Israa Software Company, the literature review method was introduced.

Moreover, Primary quantitative data were collected through the distribution of pre-structured questionnaires to Al-Israa company customers located in Ramallah city; distribution occurred both personally (on-site) and electronically to increase the number of respondents and decrease the lapse of time to reach the required number of samples to perform the study.

As the number of company customers can't be found statistically, a general approach was used to estimate the Al-Israa company population; it was calculated assuming the total number of customers who visited the company within the six month of the study. The total population was 2190; from this number, the necessary sample size was approximated by covering a confidence interval of 95%, an acceptable margin of error of 5%, and given a response distribution of 50% through the following formula:

$$n = \frac{N \times p(1 - p)}{([N - 1 \times (d^2 \div z^2)] + p(1 - p))} \quad (3)$$

Where:

n: Sample size.

N: Population size (5 thousand).

Z: Confidence level at 95% (1.96).

d: Error proportion (5%).

P: Probability of picking a choice (50%).

Consequently, by substituting population size, it has been found that the proper random sample size for the study is 160 customers of Al-Israa company customer, the questionnaire was distributed in Arabic language because its the native language of the customers, and all retrieved questionnaires were valid for analysis.

2.5 Research Tool

Depending on what has been found in the literature review, research methodology and strategy, a questionnaire with five parts was designed. The primary data needed to be collected and acquired for the research's analysis were obtained using of a questionnaire. Due to Arabic being the mother tongue in Palestine, both an Arabic and an English version of the questionnaire were created, with the English version being utilized for the research's actual content. Before achieving the final design, the research questionnaire was modified twice, once at the supervisor's request and once in response to expert advice.

2.5.1 Questionnaire Parts

The questionnaire consists of five main parts:

Part One: The research purpose and significance were described in this section of the questionnaire. Additionally, this section reassured participants of the information's confidentiality and prompted them to complete the questionnaire.

Part Two: This part was put was use to collect demographic information about respondents, which included it takes into account respondents socioeconomic characteristics and private information. Multiple choice selection is used to collect responses. More precisely, it seeks to gather data on:

- Gender
- Age

- Academic level
- Place
- Job
- Experience years
- Sector.

Part Three: SERVQUAL questionnaire: it considers data collection related to the quality of services (expected and perceived) of Al-Israa Software Company constructed in close-ended statements designed based on the five-point Likert scale (5= strongly agree, 4= agree, 3= neutral, 2= disagree, 1= strongly disagree). The items classified into five domains which represent the quality of service factors:

- Tangibles (five items).
- Reliability (five items).
- Responsiveness (five items).
- Assurance (five items).
- Empathy (five items).

Part Four: this part consisted of (7) items related to the customer satisfaction constructed in close-ended statements designed based on the five-point Likert scale the following table show the details:

Table 2.1

Quantitative interpretation of Likert Scale

Likert scale description	Likert-Scale Value	Likert-Scale interval
Strongly disagree	1	1.00- 1.80
Disagree	2	1.81- 2.60
Neutral	3	2.61 – 3.40
Agree	4	3.41 – 4.20
Strongly agree	5	4.21 – 5.00

The final evaluation of overall service quality and customer satisfaction was done by converting Likert scale into three Quality Levels: Low level (that ranges from 1 to 2.33), Moderate level (2.34-3.66) and High Level (3.67-5.00).

Part Five: Kano questionnaire: this part consisted of (32) items related to the specifications required for the quality of services in close-ended statements designed based on the five- Likert scale (5= strongly agree, 4= agree, 3= neutral, 2= disagree, 1= strongly disagree). Appendix A explains the Arabic and English version of study tool (questionnaire).

The SERVQUAL scale was adopted as a framework to develop the Kano two-dimensional questionnaire, every item the reference scale was subdivided into two questions aimed at investigating:

1. A functional or positive question – that measures customer’s reaction to the service when the feature is provided.
2. A dysfunctional or negative question – that measures a customer’s reaction to the service that does not fulfill the feature in question.

Functional and dysfunctional responses of the attributes were given through 5-point Likert scale ranging from 0 ("Dislike it in that way") to 4 ("I like it in that way"); answers were then coded to transform them from a binary input given by answering functional and dysfunctional questions (ex. 4,1) to one of the six-Kano categories investigated to classify the service features; kano-investigation matrix was used, then, to categorize each service feature by following the method of Matzler and Hinterhuber (1998), as given in Table (2.2).

Table 2.2

Kano two-dimensional matrix

Customer Requirements		Dysfunctional Questions				
		I like it that way	I must be that way	Neutral – I don't care	I can live with it in that way	I dislike it
Functional Questions	I like it that way	Q	A	A	A	O
	I must be that way	R	I	I	I	M
	Neutral – I don't care	R	I	I	I	M
	I can live with it in that way	R	R	I	Q	M
	I dislike it	R	R	R	R	Q

Note: A=attractive dimension; O= One-dimensional or performance; R=reverse dimension, M= mandatory, Q= questionable, I= Indifferent dimension.

Data were then subjected to discrete analysis, which involves calculating the frequency of individual Kano category types within each service feature, providing them with the Kano classification based on the most frequent response, and considering the "mode" of occurrence of the data.

After that, the customer satisfaction coefficient for each service quality category was examined., in order to assess the extent of customer satisfaction and those of dissatisfaction for every singular service feature, through Matzler and Hinterhuber (1998) formula, as follows:

$$CS = \frac{A + P}{(A + P + M + I)} \quad (4)$$

$$DS = \frac{A + P}{(A + P + M + I) * (-1)} \quad (5)$$

Where:

CS and DS indicate the extent of customer satisfaction and the extent of customer's dissatisfaction, respectively.

A= Attractive Kano's dimension

P= Performance Kano's dimension

M= Must-be elements

I= Indifferent dimension.

2.5.2 Sampling Technique

Researchers are interested in how they will choose research samples, so, it is important to determine the methods that suit with research purposes, then define research population and sample size. The research population was the software industry sector customers in West Bank. The research sample is limited to Al-Israa Software Company.

2.6 Reliability and Validity of the Research Instrument

Two techniques are utilized to guarantee the correctness of the results taken into consideration for the study: reliability and validity. Validity and reliability should be the main factors considered while doing quantitative research to evaluate the consistency of the findings and their potential for replication.

The ability of an instrument to produce the same results when measuring something consistently is known as reliability. If the results are consistent, it is feasible to conclude that the questionnaire has a high level of research dependability. The measurement is regarded as accurate when the same object is tested again, and the outcomes are consistent. A measurement device is more trustworthy over time and for various components when it is more objective.

The Cronbach Alpha coefficient is the most used test to check the internal consistency of research variables. It assumes a value that ranges from 0 to 1; generally, Cronbach Alpha coefficients less than 0.60 are considered bad, between 0.6 and 0.7 are acceptable, and above 0.80 are regarded as good. Higher Cronbach Alpha values indicate higher internal consistency and greater accuracy and reliability of the measurement tool. Table (2.3) displays the Cronbach Alpha coefficients for each variable in the SERVQUAL questionnaire.

Table 2.3

Cronbach Alpha Coefficients for Operational Variables (SERVQUAL & Kano)

Variable	SERVQUAL	Cronbach Alpha			kano		
		Expectations	Perceptions	Satisfaction	Expectations	Perceptions	Satisfaction
Service quality	25				32		
Tangibles	5	0.711	0.728		7	0.761	0.726
Reliability	5	0.721	0.811		7	0.709	0.841
Responsiveness	5	0.741	0.778		6	0.813	0.741
Assurance	5	0.823	0.761		6	0.798	0.769
Empathy	5	0.710	0.764		6	0.712	0.725
Customer satisfaction	7			0.809			

Cronbach Alpha values for expected service quality are 0.711, 0.721, 0.741, 0.823, and 0.71 for tangibles, reliability, responsiveness, assurance, and empathy, respectively. Meanwhile, Cronbach Alpha values for tangibles, reliability, responsiveness, assurance, and empathy are 0.728, 0.811, 0.778, 0.761, and 0.764, respectively. All results showed coefficients higher than 0.70, which means questionnaire items provide an efficient and real measure of service quality.

The Cronbach Alpha for customer satisfaction resulted in higher results, 0.809, which means reliability in customer satisfaction measurement is higher. The factor analysis of the constructs of the variables is extremely excellent, which suggests that the questionnaire can be used to collect the needed data.

Kano-questionnaire reliability is given in Table 4, which shows the reliability of both functional and dysfunctional items.

The reliability analysis of the functional and dysfunctional questionnaire is given above in the table, which suggests that the dimensions of the KANO questionnaire are reliable to be used in further analysis.

A split-half reliability test was performed to assess the results' reliability further. Cronbach alpha values were used to determine the validity of the trial by evaluating the internal consistency of the SERVQUAL questionnaire, as seen in Table 2.4.

Table 2.4

Split-Half Reliability test (SERVQUAL & Kano)

			SERVQUAL		Kano	
			Expected	Perceived	Expected	Perceived
Cronbach's Alpha	Part 1	Value N of Items	0.844 3 ^a	0.846 3 ^a	0.815 11 ^a	0.838 3 ^a
	Part 2	Value N of Items	0.881 2 ^b	0.851 2 ^b	0.913 11 ^b	0.874 2 ^b
	Total N of Items		5	5	5	22
	Correlation Between Forms			0.815	0.817	0.818
Spearman-Brown Coefficient	Equal Length		0.877	0.879	0.876	0.861
	Unequal Length		0.911	0.900	0.916	0.857
Guttman Split-Half Coefficient			0.851	0.855	0.852	0.854

Correlation between the constructs items is strong, reflecting the internal coherence of the data, suggesting the validity of the dimensions and the variable as a whole. Meanwhile, Table 5 explains the validity of the functional and dysfunctional questions of the Kano questionnaire. Also, for the Kano model questions correlation coefficient between the constructs is strong, which suggests coherence in the data.

2.7 Statistical Analysis

Statistical Package for the Social Sciences (SPSS) 22 software was used in this study to analyze the descriptive data of the respondents and to examine the mean, standard deviation for each construct as well as the level of service quality and customer satisfaction in the software industry.

In addition, the links between the research models were tested, and the outcomes of suggested hypotheses were investigated, using partial least squares structural equation modeling (PLS-SEM). One of the most popular software programs for PLS-SEM was Smart PLS (v.4). This program was used to create the study model, the connections between the variables, and the data entry for each variable. First order and second order constructs were employed in the model, and a repeated indicator strategy was used to design the model and assign indications for each construct.

The validity and dependability of the various indicators and the model as a whole were then verified using PLS algorithm calculations, which used tests and threshold values to evaluate each test. To test hypotheses, bootstrapping was then used to determine the significance of all correlations. In addition, to analyze models, Smart PLS uses two methodological components. First, the evaluation of the measuring model, where reliability tests are used to analyze the reflective model. Whereas the average variance extracted (AVE), composite reliability (CR), and indicator reliability (item loading) are used to evaluate the convergent validity, respectively.

Chapter Three

Data Analysis and Results

3.1 Chapter Overview

The quantitative data obtained from research tool (questionnaires) are analyzed and the findings are presented in this chapter. The SERVQUAL and Kano models are used to measure service quality and customer satisfaction from the perspective of research samples in the target region in the first part. To identify the factors influencing the data analysis in assessing service quality and customer satisfaction using SERVQUAL and the Kano model in the Palestinian software industry in accordance with the proposed framework, it then presents the results of descriptive statistics and hypotheses testing derived from the Statistical Package for Social Science (SPSS) software. Additionally, this chapter gives the suggested framework employing the discovered factors.

3.2 Introduction to Descriptive Analysis

The questionnaires were analyzed using SPSS software to acquire the research results. Because it has several characteristics and properties that can produce suitable findings, SPSS was chosen for this study. These findings help to accomplish the research goal by giving a number of statistics for each item on the questionnaire. To determine the causal linkages between questionnaire components, SPSS is helpful. Additionally, the Smart PLS software's Partial Least Squares Structural Equation Modeling (PLS-SEM), which can work with tiny sample sizes, was employed to evaluate the hypotheses. One of the popular software programs for PLS_SEM is Smart PLS because it can demonstrate links between the quality dimensions employed and their effect on customer satisfaction by responding to the queries.

3.2.1 Descriptive Analysis

According to the questionnaire design, respondents have different personal information; these differences introduce different responses toward the assessing service quality and customer satisfaction using SERVQUAL and Kano model. The following results shows these differences.

3.2.2 Personal Information

The total number of participants' from Al-Israa Software Company customers is 160, with response rate 100%, the following description present the characteristics of the participants'. Table 3.1 show the demographic results of the study sample.

Table 3.1

Distribution of the Demographic Variables

Variable	Characteristics of the Variable	Frequencies	Percentage
Gender	Male	95	59.4%
	Female	65	40.6%
	Total	160	100%
Age	20- 30 years	53	33.1%
	31- 40 years	56	35%
	41- 50 years	27	16.9%
	More than 51 years	24	15%
	Total	160	100%
Scientific degree	Tawjihi	20	12.5%
	Bachelor	113	70.6%
	Master	22	13.8%
	PhD	5	3.1%
	Total	160	100%
Place of residence	City	103	64.4%
	Village	50	31.3%
	Camp	7	4.4%
	Total	160	100%
Job title	Manager	54	33.8%
	Head of the Department	38	23.8%
	Employee	68	42.5%
	Total	160	100%
Experience year	Less than 5 years	48	30%
	5- 10 years	46	28.7%
	More than 10 years	66	41.3%
	Total	160	100%
Business domain	Industrial	43	21.3%
	Services	47	29.4%
	Commercial	53	33.1%
	Banking	26	16.3%
	Total	160	100%

Table 3.1 describe the following results:

1. The sample included 95 males who form 59.4% of the participants', and 65 females who form 40.6% of the participants'.
2. Age was divided into four intervals, the results shows the details of the participants' age, the most frequent age interval is (31- 40 years) with 35%, then (20-30) years with 33.1%, then (41- 50) years with 16.9%, and the last interval is (more than 51) years with 15% of the research participants'.
3. Scientific degree was divided into four categories, the results shows the details of the participant's scientific degree, the most frequent scientific degree category is (Bachelor) with 70.6%, then (Master) with 13.8%, then (Tawjihi) with 12.5%, and the last category is (PhD) with 3.1% of the research participants'.
4. Place of residence was divided into three categories, the results shows the details of the participant's place of residence, the most frequent place category is (City) with 64.4%, then (Village) with 31.3%, and the last category is (Camp) with 4.4% of the research participants'.
5. The job title was divided into three categories, the results shows the details of the participant's job title, the most frequent job title category is (employee) with 42.5%, then (manager) with 33.8%, and the last category is (head of the department) with 23.8% of the research participants'.
6. The experience year was divided into three intervals, the results shows the details of the participant's experience years, the most frequent experience year interval is (more than 10 years) with 41.3%, then (less than 5 years) with 30%, and the last interval is (5- 10 years) with 28.7% of the research participants'.
7. The business domain was divided four categories, the results shows the details of the participant's business domain, the most frequent business domain category is (5- 10 years) with 38.8%, then (10- 15 years) with 21.8%, then (less than 5 years) with 20.5%, and the last category is (more than 15 years) with 19.4% of the research participants'.

3.3 Statistical Differences among Survey Factors (Expectations and Participants')

This section compares the expectations and perspectives of participants about the dimensions of service quality depending on the SERVQUAL model dimensions. The following five subsections assess the quality of services based on five dimensions

(Tangibles, Reliability, Responsiveness, Assurance, and Empathy). The following subsection discusses the overall quality model.

- **First Axis: The Tangibles Dimension**

The summary statistics including the arithmetic means and standard deviations of the participants' expectations and perceptions for each statement in the tangible dimensions as well as the gap between the means of them. Table 7 presents the answer of the participants' in this part.

- **Second Axis: The Reliability Dimension**

The summary statistics including the arithmetic means and standard deviations of the participants' expectations and perceptions for each statement in the reliability dimensions as well as the gap between the means of them. Table 7 presents the answer of the participants' in this part.

- **Third Axis: The Responsiveness Dimension**

The summary statistics including the arithmetic means and standard deviations of the participants' expectations and perceptions for each statement in the responsiveness dimensions as well as the gap between the means of them. Table 7 presents the answer of the participants' in this part.

- **Fourth Axis: The Assurance Dimension**

The summary statistics including the arithmetic means and standard deviations of the participants' expectations and perceptions for each statement in the assurance dimensions as well as the gap between the means of them. Table 7 presents the answer of the perceptions in this part.

- **Fifth Axis: The Empathy Dimension**

The summary statistics including the arithmetic means and standard deviations of the participants' expectations for each statement in the empathy dimensions as well as the gap between the means of them. Table (B.1) In Appendix B Show presents the answer of the participants' in this part.

The results for tangible dimension illustrate the following facts:

1. The means of expectations are higher than their associated participants perception mean, which cause a negative gap ranging between 0.15 for the statement “The design of software services is commensurate with the scope of the company's reputation”, and 0.27 for the statement “The company cares about your feedback and strives to achieve it”.
2. The total score of the participants’ expectations of tangible dimension is 4, while the perceptions is 3.79. Furthermore, the dimension gap is (-0.21).

The results for the reliability dimension illustrate the following facts:

1. The means of expectations are higher than their associated participants perception mean, which cause a negative gap ranging between 0.26 for the statement “The company maintains customer information and communicates with them”, and 0.42 for the statement “The company delivers its services right the first time”.
2. The total score of the participants’ expectations of reliability dimension is 4.1, while the participants’ is 3.77. Furthermore, the dimension gap is (-0.33).

The results for responsiveness dimension illustrate the following facts:

1. The means of expectations are higher than their associated participants perception mean, which cause a negative gap ranging between 0.21 for the statement “The company informs its customers exactly when services will be provided to them”, and 0.37 for the statement “The company employees are accommodating to special requests”.
2. The total score of the participants’ expectations of reliability dimension is 4.1, while the perceptions is 3.8. Furthermore, the dimension gap is (-0.30).

The results for assurance dimension illustrate the following facts:

1. The means of expectations are higher than their associated participants perception mean, which cause a negative gap ranging between 0.27 for the statement “The company employees deal tactfully with customers”, and 0.33 for the statement “I feel safe in my dealings with the company's employees”.
2. The total score of the participants’ expectations of assurance dimension is 4.23, while the perceptions is 3.94. Furthermore, the dimension gap is (-0.29).

The results for empathy dimension table illustrate the following facts:

1. The means of expectations are higher than their associated participants perception mean, which cause a negative gap ranging between 0.25 for the statement “The company employees give me personal attention and attend to the services I need”, and 0.43 for the statement “The company has convenient working hours for customers”.
2. The total score of the participants’ expectations of empathy dimension is 4.04, while the participants’ is 3.73. Furthermore, the dimension gap is (-0.3).

• **Overall SERVQUAL Model**

In order to assess the quality of services provided by Al-Israa customers, Table (3.2) gives the arithmetic means and standard deviations of participants’ expectations and participants’ for each dimension of the SERVQUAL model as well as the total scores of the model based on 160 different participants’.

Table 3.2

Means and standard deviations (SD) and the weighted gap foe overall SERVEQUAL model

No.	Statement	Expectations (E)		Perceptions (P)		Gap= P-E	Weight	Weighted Gap
		mean	SD	mean	SD			
1	Tangibles	4	.655	3.79	.723	-.21	.145	-.041
2	Reliability	4.1	.635	3.77	.677	-.33	.23	-.065
3	Responsiveness	4.1	.652	3.8	.697	-.30	.209	-.059
4	Assurance	4.23	.675	3.94	.727	-.29	.202	-.057
5	Empathy	4.03	.751	3.73	.796	-.30	.209	-.059
Total		4.03	.751	3.73	.796	-.286	1	-.286

The results of Table 8 reveal that the mean of expectations is higher than the mean of perceptions for all five dimensions. Furthermore, the largest gap is equal.33 which is for “Reliability” dimension, followed by the two dimension “Responsiveness” and “Empathy” with gap equal.3, then the “Assurance” dimension with.29, and the last dimension is the “Tangibles” with gap equal .21.

Moreover, according to the total score for participants' expectations for all dimensions is 4.03, while the perception is 3.73. Furthermore, the dimension gap is -.286. In addition, the weighted gap is calculated to show the importance of each dimension, the reliability dimensions resulted in a weighted gap with a value of (-.065) which means the reliability dimension is the most important dimensions of the SERVQUAL model as seen by the participants', then the two dimensions (Responsiveness and Empathy) with weighted gap of (-.059), then (Assurance) dimensions with (-.057), and the (Tangibles) dimension with weighted gap of (-.041).

3.4 Statistics for Customer Satisfaction Level

This section analyzes the customer satisfaction level. Each statement's mean and standard deviation were given, as shown in Table (B.2) in Appendix B. To evaluate the findings of the current study, a Likert scale with five equally sized categories was utilized. Scores between 1.2 and 2.33 were regarded low, 2.34 to 3.66 were considered moderate, and 3.67 to 5 were considered high. These categories were derived according to the equation $\text{Interval length} = (\text{highest weight} - \text{lowest weight}) / (\text{three levels}) = (5 - 1) / (3) = 1.33$.

The results of Table 9 show that the total degree of customer satisfaction was satisfied.

3.5 Statistics for the Specifications Required for the Quality of Services

This section analyses the specifications required for the quality of services. The mean and standard deviation of each statement were reported. In the current study Likert scale of five-point equal-sized categories was used adopting the same scaling used in Table 9.

The results of Table 9 show that the total degree of specifications required for the quality of services was moderate level.

3.6 Testing for Normality

Before testing hypotheses, the Kolmogorov-Smirnov test was used to test if data follows a normal distribution to assess the analysis method to analyze the collected data. Table (3.3) shows the normality testing results for the five SERVQUAL dimensions for both perceived and expected satisfaction data.

Table 3.3*Kolmogorov-Smirnov Test of Normality*

Dimension	Statistic	Df	Sig.	Result
Perceived service quality				
Tangibles	0.213	158	0.000	Not normal
Reliability	0.214	158	0.000	Not normal
Responsiveness	0.226	158	0.000	Not normal
Assurance	0.255	158	0.000	Not normal
Empathy	0.254	158	0.000	Not normal
Expected service quality				
Tangibles	0.198	158	0.000	Not normal
Reliability	0.211	158	0.000	Not normal
Responsiveness	0.261	158	0.000	Not normal
Assurance	0.218	158	0.000	Not normal
Empathy	0.205	158	0.000	Not normal
Customer satisfaction				
	0.187	158	0.000	Not normal

3.7 Assessment of Measurements Models (Outer Model)

The construct validity and reliability of constructs are evaluated as part of the evaluation of reflective measurement methods. Convergent validity determination procedure includes evaluating the indicator reliability (CR), composite reliability, and average variance extracted (AVE).

3.7.1 Convergent and Discriminant Validity

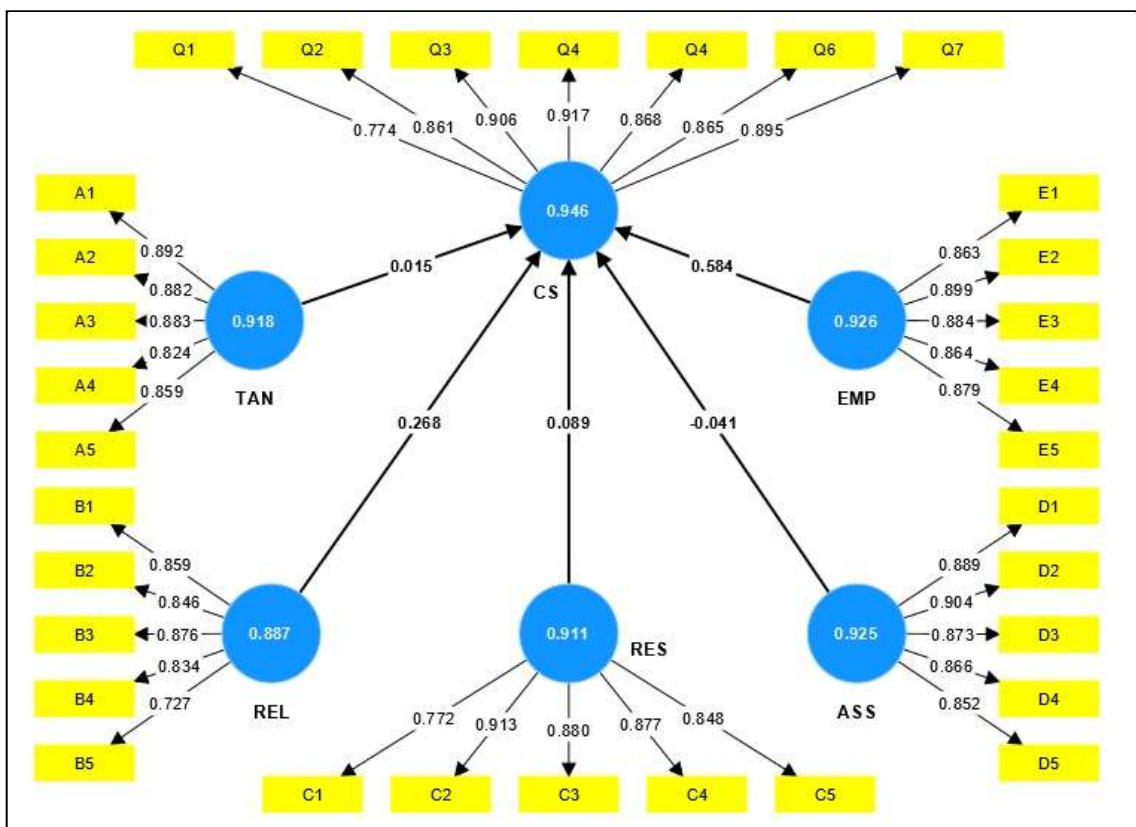
The degree to which a measure correlates well with other measures of the same construct is known as convergent validity. Identifying three tests is part of assessing convergent validity in reflective measurement models:

- Factor loadings: A general rule of thumb is that the outside loadings should be 0. 708 or higher. A higher outer loading indicates that the indicators have a great deal in common on a build. Although it is permitted to be over 0.60 in exploratory investigations, all of the item loading achieves the criterion and agrees with the suggested values.

- Composite reliability (CR): For each indicator, the CR is assessed to make sure the internal consistency is maintained. The CR ratings range from 0 to 1, with higher CR values denoting better reliability levels. Hair et al. (2011) state that a number greater than 0.70 is acceptable. All of the CR values above the criterion of 0.7, as shown in Figure (3.1) below. Consequently, the constructions' dependability was verified.
- Average variance extracted (AVE): The total of the squared loadings of the indicators on the construct divided by the number of indicators is the average variance extracted (AVE). A greater AVE indicates that the concept accounts for more than half of the variation in its indicators (Hair et al., 2011). This study AVE values, which range from 0.887 to 0.946, show high convergent validity. Figure 3.1 displays the AVE values.

Figure 3.1

Average variance extracted (AVE) measurement



All of the research model's constructs CR was reported. The usual metric for assessing internal consistency is Cronbach's alpha. It is advised to choose a value greater than 0.7.

3.8 Assessment of Measurements models (Inner Model)

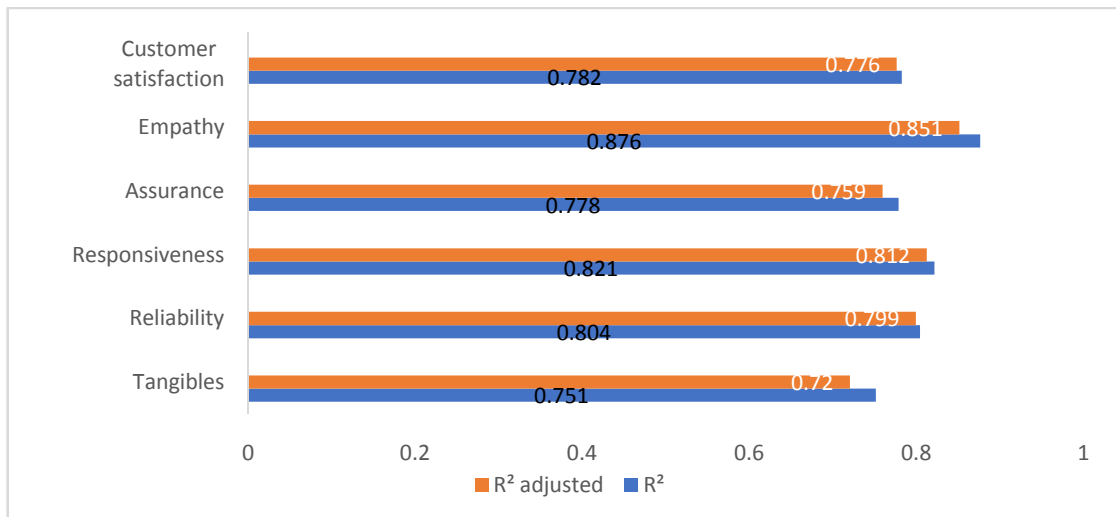
The next stage is to evaluate the structural model and look at the connections between constructs after the measurement validity and reliability have been confirmed. The following are the primary factors considered in PLS-SEM while evaluating the structural model:

3.8.1 The coefficient of determination (R^2)

The most used metric for assessing the structural model is the coefficient of determination. It stands for the prediction precision of the model. The range of R^2 values is 0 to 1, with a higher value indicating greater prediction accuracy. According to Hair et al. (2011), the value of R^2 depends on the complexity of the research model, and as a general guideline, R^2 values of 0.75, 0.50, or 0.25 may be characterized as strong, moderate, or weak for endogenous latent variables. The findings in figure 3.2 below demonstrate that the research model's endogenous latent variables obtain an R^2 value higher than 0.751.

Figure 3.2

R^2 values

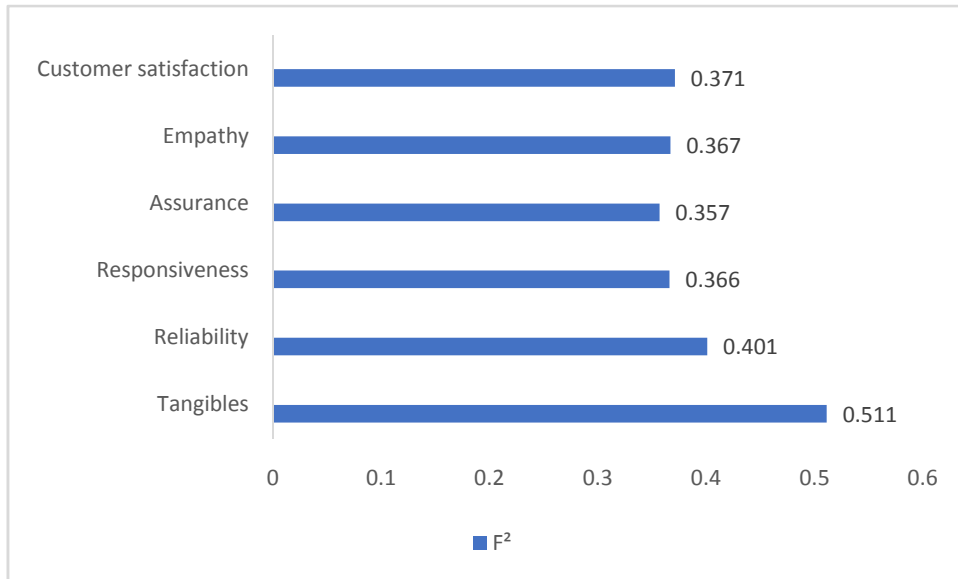


3.8.2 The effect size (F^2)

The effect size describes the impact on the endogenous constructions of removing a certain external construct. The values of F^2 equal to 0.02, 0.15, and 0.35, respectively, represent small, medium, and large effects of the exogenous latent variable. The findings in figure 3.3 show the results related to research dimensions.

Figure 3.3

F² values

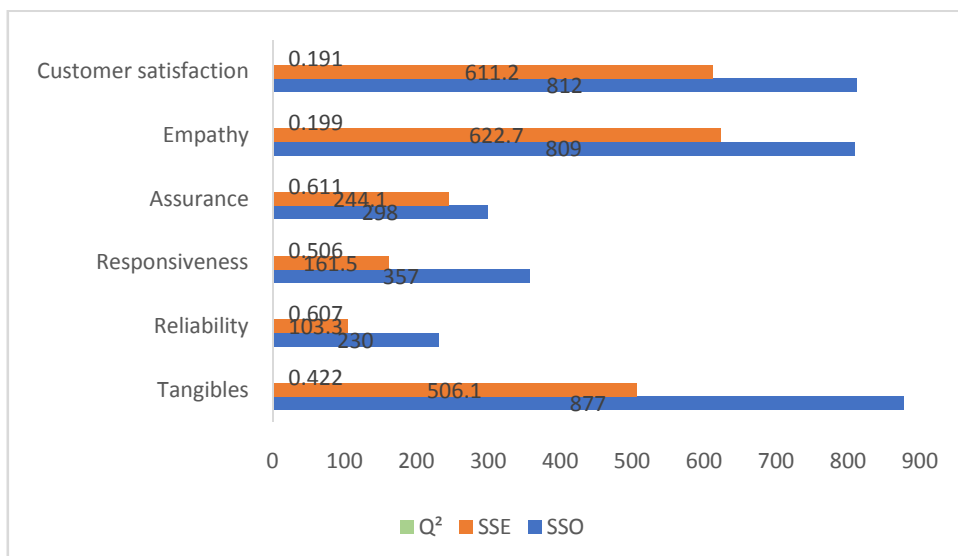


3.8.3 Blindfolding and predictive relevance Q²

Q² or (Stone-Geisse's Q²) value is an indicator of the model's predictive relevance in the structural model. A value of Q² more than 0 for a specified reflective endogenous latent variable, points to path model predictive relevance for this construct. The blindfolding procedure was used to obtain the value of Q². The values of Q² for all constructs were larger than zero so the model has sufficient predictive quality. Figure 3.4 show the results.

Figure 3.4

Q² values



3.8.4 Goodness of fit index (GoF)

The goodness of fit for the model (GoF) defined as the geometric mean of both average variances extracted (AVE) and the average of R^2 of the endogenous variables, it measures the ability to rely on the study model.

The results classified as the following:

- GoF value is less than 0.1 there is no fit.
- GoF between 0.1 and 0.25 there is a small fit.
- GoF values between 0.25 and 0.36 the fit is medium.
- GoF values larger than 0.36 there is a large fit.

The calculated value of GOF is 0.772 in this model which is considered sufficient global PLS model validity.

3.8.5 The Significance of the Path Coefficients - Hypotheses Testing

The structural model was calculated to examine the linkages among the study model after the PLS-SEM method had run. For this, the path coefficient test was applied. The path coefficient values range from -1 to 1.

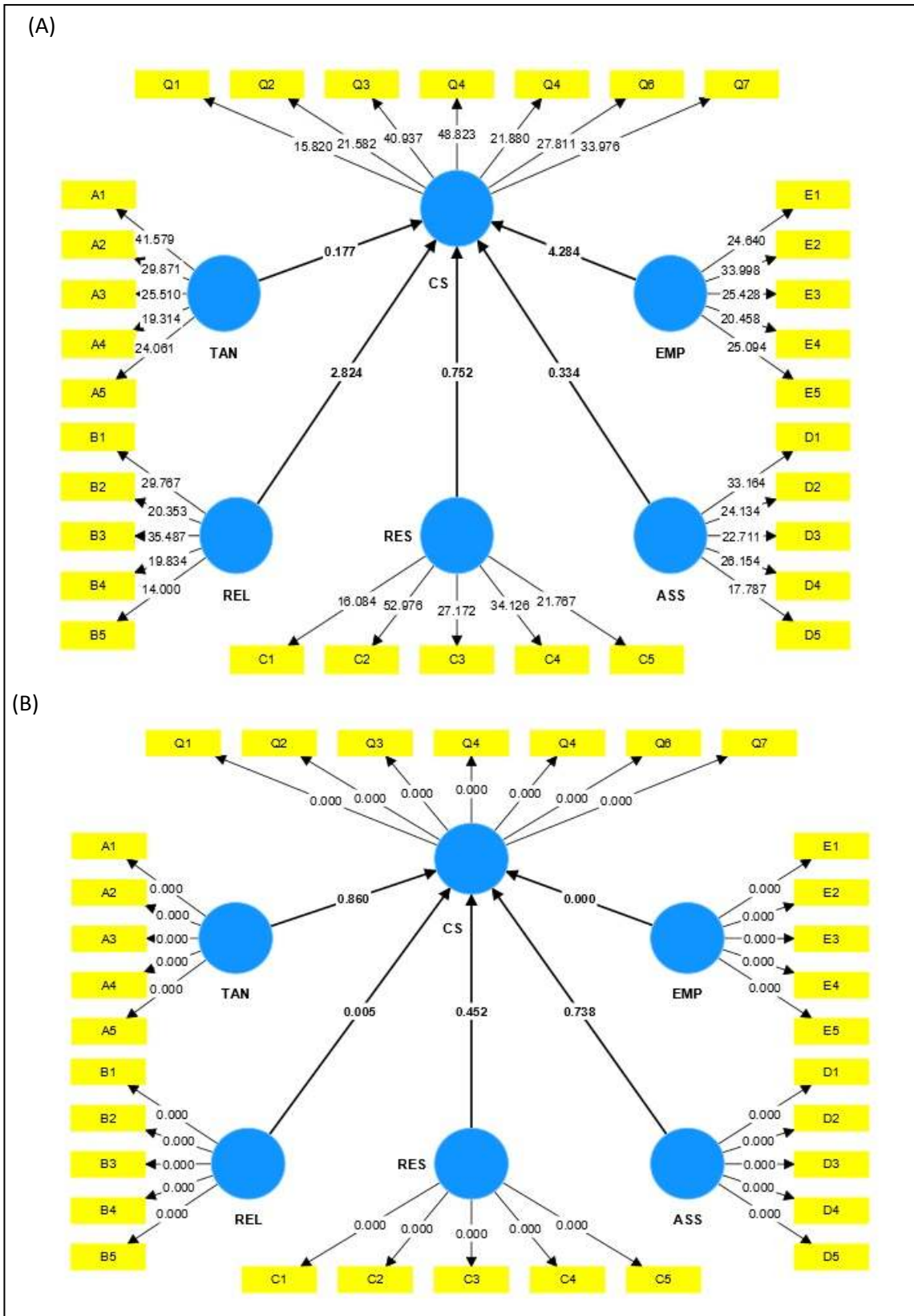
Strong positive associations are represented by values near to +1 and strong negative relationships are represented by values close to -1. Since PLS-SEM does not presuppose normality in the distribution of the data, nonparametric bootstrapping strategies are utilized in PLS-SEM to test the relevance of the path coefficients. Additionally, bootstrapping refers to using a lot of subsamples in bootstrap samples. The outcomes of the PLS bootstrapping techniques are shown in Figure 3.5. Also included in the results were Table below tabulates T-values, P-values, values, and standard deviation values for direct relationships.

Table 3.4*The results of direct relations*

Dimension	H	Original Sample	Standard Deviation	T-value	P-value	Result
Tangibles-> Customer satisfaction	H1	.015	.083	.177	.860	Not supported
Reliability-> Customer satisfaction	H2	.268	.095	2.824	0.005	Supported
Responsiveness-> Customer satisfaction	H3	.089	.118	.752	.452	Not supported
Assurance-> Customer satisfaction	H4	-.041	.122	.122	.334	Not supported
Empathy-> Customer satisfaction	H5	.584	.136	4.284	.00	Supported

Figure 3.5

PLS Bootstrapping Procedures



As presented above it's clear that there is a significant positive relationship between customer satisfaction and reliability, and a significant positive relationship between customer satisfaction and empathy (H2 and H5) supported. In addition, the results show that there is no relationship between (Tangibles, Responsiveness, Assurance) dimensions and the customer satisfaction.

To assess the difference in importance for the five service quality categories, Kano-Model Analysis was performed.

Figure 3.6

Discrete Analysis of Kano Categories

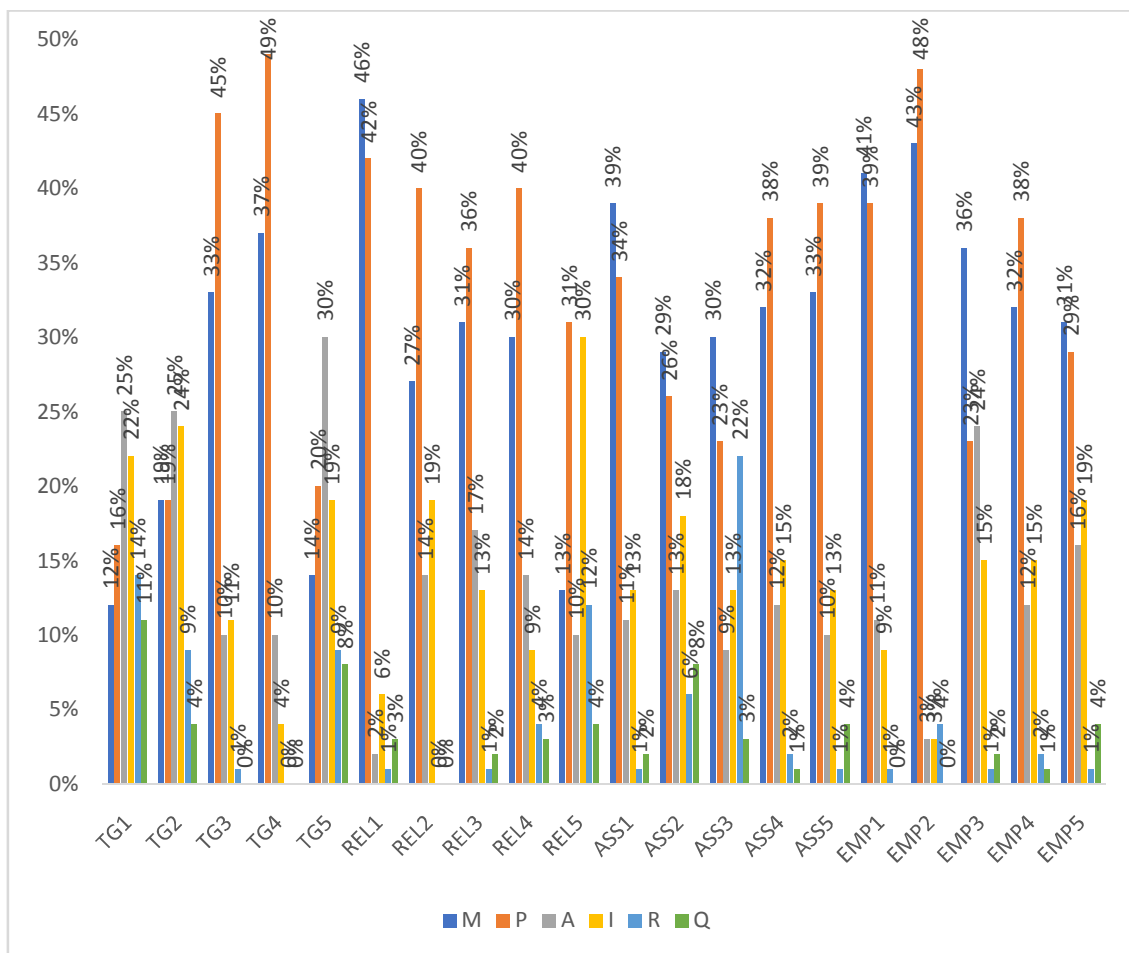


Table 3.5*Kano Classification, CS, DS.*

Feature	Kano Classification	Extent Of	Extent Of
		Customer satisfaction	Customer dissatisfaction
TG1	A	0.566	-0.356
TG2	P	0.562	-0.493
TG3	P	0.580	-0.772
TG4	P	0.582	-0.713
TG5	M	0.519	-0.752
REL1	M	0.511	-0.799
REL2	P	0.489	-0.862
REL3	M	0.484	-0.702
REL4	M	0.411	-0.609
REL5	P	0.582	-0.782
ASS1	M	0.449	-0.611
ASS2	P	0.478	-0.615
ASS3	P	0.588	-0.642
ASS4	P	0.547	-0.642
ASS5	M	0.468	-0.665
EMP1	M	0.461	-0.927
EMP2	P	0.580	-0.720
EMP3	P	0.558	-0.661
EMP4	P	0.592	-0.793
EMP5	P	0.492	-0.516

According to the results of classification on figure 3.6, there are no characteristics that are Doubtful or Reverse. Since both are unusual, the lack of either trait implies success for the study: Reverse categories show the presence of a trait that, when present, leads to consumer unhappiness, while the absence of the first one indicates that respondents completely understood the questions of the Kano questionnaire.; their absence indicates that Al-Israa company does not have service quality feature that directly dissatisfy customers.

In order to fully understand figure 3.6, it is crucial to remember that values below 0.500 are considered to be of small significance in producing customer satisfaction. As can be seen from the table, all service quality components with values equal to or less than 0.500 are categorized as belonging to the Must Be category since they do not boost customer satisfaction when present but instead cause it to decrease when absent.

Regarding the "Attractive dimension" it exists just in the first tangibility factor, that is related to the idea that company design should correspond to price levels: this indicates that when this feature exists it will generate further satisfaction when completely achieved, having a value of extent of customer satisfaction of 0.566; however, its absence will not interfere with dissatisfaction since they are not normally expected by customers. This result is confirmed by Table above where customer dissatisfaction index (-0.356), which is the lowest within all service features, indicating lower importance in generating dissatisfaction.

"Must-be" requirements, instead, emerged in seven service quality features (see Table 3.5). "Performance" category, instead emerged in Tangibility, Reliability, Responsiveness, and Empathy service quality features.

Chapter Four

Discussion, Conclusion and Recommendations

4.1 Chapter Overview

This chapter illustrates the discussion of the outcomes associated to related to assessing service quality and customer satisfaction using SERVQUAL and Kano model in Palestinian software industry. This chapter also discusses the findings of the testing of the hypotheses and gives theoretical and practical consequences for the study. Additionally, the chapter summarizes and finishes the study's findings while highlighting some suggestions for managers at software firms. At the conclusion of the chapter, the study's limitations and recommendations for future research areas are offered.

4.2 Discussion of Results

The study aims to assess the services quality following customer satisfaction in the software development industry in Palestine. In addition, to explore the perceived and expected levels of quality in the software industry sector using the SERVQUAL model and the influence of service quality dimensions on the customer satisfaction. The proposed model includes five services quality dimensions (Tangibles, Reliability, Responsiveness, Assurance, Empathy). Furthermore, study investigates the level of service quality offered by software industry companies and sponsored, and measure the customer satisfaction level in the software industry sector using the Kano model.

The results of perceived and expected levels of quality in the software industry sector using the SERVQUAL model show that the mean of expectations is higher than the mean of participants' for all five dimensions. Furthermore, the largest gap is equal.33 which is for "Reliability" dimension, followed by the two dimension "Responsiveness" and "Empathy" with gap equal.3, then the "Assurance" dimension with.29, and the last dimension is the "Tangibles" with gap equal.21.

In addition, the results of table (3.7) show that the total score for participants' expectations for all dimensions is 4.03, while the perception is 3.73. furthermore, the dimension gap is -.286. in addition, the weighted gap is calculated to show the importance of each dimension, the reliability dimensions resulted in a weighted gap

with a value of (-.065) which means the reliability dimension is the most important dimensions of the SERVQUAL model as seen by the participants', then the two dimensions (Responsiveness and Empathy) with weighted gap of (-.059), then (Assurance) dimensions with (-.057), and the (Tangibles) dimension with weighted gap of (-.041). However, they need to be evaluated periodically since they are of great importance in satisfying or dissatisfying customers, with an extent of customers' satisfaction.

The importance of performing improvements in the reliability dimension to increase customers' satisfaction was also proposed by Mei and Ming (2018) in his study which classified the features of mobile security and antivirus (MSA) applications according to the Kano model into (attractive requirements, one-dimensional requirements, basic requirements, neutral requirements, and inverse requirements). The study concluded that all features are divided into one-dimensional requirements or neutral requirements, and based on customer satisfaction values.

Similar results were in the study conducted by Apornak (2017), the result showed that the integration between QFD and Kano is useful for identifying customers' needs. The classification of customers' needs leads to present services and products that the customers want.

Apornak (2017) performed a similar study by integrating a modified version of SERVQUAL into a refined Kano model to determine critical service quality attributes of chain restaurants and obtained similar results. They highlighted the importance of reliability dimensions and the dimension of Tangibility related to the restaurant's overall cleanliness as critical elements for customer satisfaction.

Moreover, with regard to the degree of customer satisfaction, the results of table (3.8) illustrated that the total degree of customer satisfaction was moderate level (mean 3.66) which achieved 73.2%.

Based on the hypotheses, those have been studied (H1, H2, H3, H4 and H5) as proposed in chapter three. The results demonstrated that there is a significant and positive relationship between customer satisfaction and reliability, and a significant positive

relationship between customer satisfaction and empathy, which means that the results of the hypotheses were as follows:

- H1: Tangibles not affect customer satisfaction in the software industry sector (not supported).
- H2: Reliability affects customer satisfaction in the software industry sector (supported)
- H3: Responsiveness not affects customer satisfaction in the software industry sector (not supported).
- H4: Assurance not affects customer satisfaction in the software industry sector (not supported).
- H5: Empathy affects customer satisfaction in the software industry sector (supported).

Similar results were in the study conducted by Radfar et al. (2014), Dewi (2020), and Al Shabasi (2020) studies that showed the Kano technique is used to classify service characteristics that meet consumer demands. By synchronizing the SERVQUAL gap value and the Kano model grade, SERVQUAL integration and the Kano model were completed. When service attributes from both ways are assessed, service attributes that will be the focus of management's efforts to raise service quality are produced. The findings demonstrated that the SERVQUAL weak kinds and appealing and one-dimensional categories were the attribute criteria that needed to be emphasized. Customer satisfaction will rise as a result of improvements in characteristics in appealing and one-dimensional categories

The results of the integration analysis are helpful in Al-Israa company because they suggest how to allocate the appropriate level of resources to different aspects based on the importance they have in contributing to customer satisfaction. For example, it emerges that Al-Israa managers should intensify employees' training sessions and increase the periodic assessment and care in solving customers' problems. Management should also focus on the quality and depth of training and how to manage unusual situations with customers to improve their capacity to solve customers' problems. Finally, to improve the provision of service promptly, it is required to examine different aspects like the productive efficiency of Al-Israa company staff, the presence of the appropriate amount of equipment, and the examination of customers' orders flow.

The analysis and findings of the study are based on the study of customers' responses within a software company. Interesting results emerged from integrating two models, evidencing areas of improvement that were not easy to discover by adopting one measurement method alone. Thus, results provide new insight into the literature software service quality and the overall body of literature, considering that few studies have covered this topic.

4.3 Conclusion

The study made a significant contribution to our knowledge of how SERVQUAL and the Kano model may be used to measure service quality and customer happiness. In particular, it enriched the body of research in this area by providing a thorough description of the most crucial quality services elements in the Palestinian context. This study expanded on earlier research that looked at the connection between high-quality services and client happiness. It offered actual proof of the degree of service quality implementation and customer satisfaction focus. Additionally, the study—which is regarded as the first to cover this subject in such a thorough manner—examined the important association between service quality characteristics (reliability and empathy) and the level of customer happiness, especially in Palestine as one of the developing countries.

4.4 Recommendations

The researcher issued the following suggestions in light of the study's findings:

1. Software development companies may can benefits of the Kano's model research findings to improve the services offer and identify the specific services that increase client happiness.
2. The necessity for Palestinian software companies to create organizational structures and methodical strategies to deliver services in accordance with client requirements rather than relying on the skill of personnel.
3. According to Kano and SERVQUAL analysis, the key components that require re-evaluation in terms of significance are those related to time, specifically: communicating to customers when the service will be given, delivering service on time, and minimizing overall waiting time.

4. The responsiveness dimensions of service quality because, according to the analysis, customers' expectations about service quality are higher than their initial expectations and because they are viewed as performance elements, improvements in those categories will be a powerful tool that will allow the Al-Israa company to stand out from the competition and differentiate its services
5. Managers of Al-Israa company are encouraged to evaluate their services periodically and to use similar tools to evaluate software quality to assess their performance from customers' perceptions and make practical improvements based on actual needs. The need to pay attention to the development of employees in software companies through various courses to ensure their ability to deal with customers.

4.5 Research Limitations

Like previous studies, this one has some restrictions. First, there is no one notion or standard for service quality and customer satisfaction across software companies, and there have been few studies done on this topic in developing nations like Palestine. Second, information was gathered from software firms in Palestine, which is regarded as a niche market. As a result, there aren't many businesses that make up the research population and satisfy the requirements for the study. Because of this, it is important to be cautious when generalizing the results due to the small sample size. Third, the restrictions brought about by the political climate and the denial of access to specific clients. Fourth, the absence of a current client record with accurate contact information in the company.

4.6 Future Research Directions

This study served as a solid springboard for the beginning of additional research aimed at improving the findings. Work on gathering a broader sample of industrial businesses first. The same study may also be used in other subjects and in other sectors. Second, a replication of this study in additional developing nations verifies its findings. Third, as a controlling variable for the link between the various variables, the influence of environmental attitudes and values may be investigated. Fourth, it can investigate the role of other factors as mediators in the link between customer happiness and high-quality services.

References

- Abboud, Salem Muhammad (2013). Measuring the dimensions of banking service quality from the point of view of customers using the gaps approach, Iraqi Journal of Market Research and Consumer Protection, Volume 2, (Issue 1).
- Abdelkader, Dion (2012). The role of continuous improvement in activating the quality of health services) The case of the hospital institution, Mohamed Boudiaf Bourgla, Researcher Magazine, Issue (11).
- Abdullah, Badr El-Din (2020) The Impact of Quality of Banking Services on Achieving Customer Satisfaction by Building a Positive Mental Image, Journal of Economic, Administrative and Legal Sciences, Vol. 4, p. 6.
- Abu Ali, Mustafa (2021). The impact of organizational conflict management strategies on the quality of services provided by the Greater Amman Municipality, unpublished master's thesis, Amman Arab University, Jordan.
- Addi, Ali (2017). Application of the Kano Model to Determine Customer Satisfaction with Quality of Services - Applied Research in Al Dora Municipality. Master Thesis, Administration and Economics University of Baghdad, Iraq.
- Al Shabasi, Mohi (2020). A proposed model for measuring the satisfaction of users of the financial statements of small and medium enterprises: an experimental case study. Alexandria Journal of Accounting Research, Volume 4, Issue 1.
- Al-Alak, B. A., & Alnaser, A. S. M. (2012). Assessing the relationship between higher education service quality dimensions and student satisfaction. Australian Journal of Basic and Applied Sciences, 6(1), 156-164.
- Al-Bakkar, Hussein (2022) The Impact of Quality of Services on Achieving Customer Satisfaction for Jordan Water Company / Miyahuna, Amman Arab University Research Journal, Vol. 7, p.1.
- Al-Barwari, Nizar Abdul-Majeed and Bashwa, Hassan Abdullah (2011) Quality management: An introduction to excellence and leadership, concepts, foundations

and applications, first edition, Al-Warraq Foundation for Publishing and Distribution, Amman.

Al-Khafaji, Hakim Jubouri (2012). Customer satisfaction as a mediating variable between service quality and customer loyalty, a case study at Babel National Bank / Najaf branch, Al-Ghari Journal of Economic Sciences and Study, Vol. 23.

Al-Naimat, Jawad Sami Muhammad (2013). The impact of the quality of health services in improving the image of the organization - a field study in the private hospital sector in Amman, a master's thesis submitted to the Faculty of Business, Middle East University, Jordan.

Al-Nsour, Iyad Abdel-Fattah (2012). Marketing Strategies, A Theoretical and Quantitative Approach, Dar Safaa for Publishing and Distribution, Amman.

Al-Obaidi, Lama Shihab Ahmed (2015). Evaluation of the quality of municipal services using (Servqual) and its implications for customer satisfaction / applied research in the Municipality of Baghdad, an unpublished higher diploma thesis equivalent to a master's degree in municipal administration submitted to the College of Administration and Economics, University of Baghdad.

Al-Shablawi, Abbas Muzher Akoul (2016). Human resource development strategy and its impact on the quality of municipal services / a case study in the municipalities in the holy city of Karbala, an unpublished higher diploma thesis equivalent to a master's degree in municipal administration submitted to the College of Administration and Economics, University of Baghdad.

Alwan, Qassem (2005), Total Quality Management, Requirements of ISO 9001:2000, i 1, Amman: House of Culture for Publishing and Distribution.

Amin, Rosa Muhammad (2012). Medical work ethics within the framework of organizational citizenship behavior to achieve quality health service - an analytical study in (Shar) Hospital in Sulaymaniyah Governorate, a master's thesis submitted to the College of Administration and Economics, University of Sulaymaniyah.

- Apornak, A (2017). Customer satisfaction measurement using SERVQUAL model, integration Kano and QFD approach in an educational institution. *International Journal of Productivity and Quality Management* 21(1):129.
- Babakus, E., & Boller, G. W. (1992). An empirical assessment of the SERVQUAL scale. *Journal of Business research*, 24(3), 253-268.
- Barzoki, A. S., Salehzadeh, R., & Khodaei, S. A. (2014). Identifying Attractive Behaviors of Managers Based on Kano Model in Isfahan Province Gas Company. *International Journal of Academic Research in Accounting, Finance and Management Sciences*, 4(1), 16-20.
- Belhassen, Samiha (2012). The impact of service quality on achieving customer satisfaction, a case study of the Mobilis Agency Agency (Ouargla), Master Thesis, Faculty of Economic, Commercial and Management Sciences, Kasdi Meriah University (Ouargla).
- Bukhlouh, Badis (2020) The Impact of Quality of Insurance Services on Enhancing Customer Satisfaction, *Journal of Economic Research*, Vol. 4, p. 2.
- Cheng, M. S., & Lin, C. C. (2011). Applying Kano's model to explore service quality attributes in hypermarkets. *Journal of Customer Satisfaction*, 7(2), 223 –257.
- Coleman Sr, L. B. (2014). *The customer driven organization: Employing the Kano model*. CRC Press.
- Dewi, Shanty (2020). Service Quality Assessment Using Servqual and Kano Models. *Journal Teknik Industri*. Vol. 20, No. 1.
- Dowidar, Mahmoud (2021). Measuring the quality of the website using the Kano model and its role in delighting the customer: an applied study on Al-Rajhi Bank in Shaqra Governorate, *Scientific Journal of Financial and Administrative Studies and Research*, Volume 12, Issue 2.
- Ghoneim, Ramzy (2017), The impact of the use of management information systems in promoting smart organization building A field study on technical colleges in the Gaza Strip, an unpublished master's thesis, the university Islamic, Palestine.

- Gupta, P., & Srivastava, R. K. (2011). Customer satisfaction for designing attractive qualities of healthcare service in India using Kano model and quality function deployment. *International Journal of Mechanical Engineering*, 1(2), 101-107.
- Hammoud, Nashwa Ezzedine (2012). Measuring the quality of Islamic bank services and their impact on customer satisfaction - a survey study on Islamic bank customers in the city of Lattakia, a master's thesis submitted to the Department of Banking and Financial Sciences, Faculty of Economics, Tishreen University.
- Herzberg, F., Mausner, B., & Snyderman, B. B. (1959). *The motivation to work*. New York, NY: John Wiley & Sons.
- Ho, L. H., Peng, T. F., Feng, S. Y., & Yen, T. M. (2013). Integration of Kano's model and SERVQUAL for enhancing standard hotel customer satisfaction. *African Journal of Business Management*, 7(23), 22-57.
- Hussein, Hala Fadel, and Abboud, Salem Muhammad (2016). The effect of service quality dimensions on the degree of consumer preference to purchase, *Iraqi Journal of Market Research and Consumer Protection*, Volume 3 (Issue 1).
- Ismail, Issa (2020) The quality of hotel services as an entrance to achieve customer satisfaction, *Journal of Business Administration*, Vol. 6, p. 1.
- Jing, G. & Yoo, I. S. (2013). An empirical study on the effect of e-service quality to satisfaction. *International Journal of Management Sciences and Business Research*, 2(10), pp. 25-31.
- Juran, J. & De Feo, J. A. (2010). *Juran's Quality Handbook*, McGrawHill Publishing Co., 6th.
- Kaddoura, Rawan Mounir (2011). The role of service quality in enhancing the effect of customer orientation on satisfaction in the Jordanian universities environment, a master's thesis submitted to the Faculty of Business, Middle East University, Jordan.
- Kano, N., Seraku, N., Takahashi, F., & Tsuji, S. (1984). Attractive quality and must-be quality. *The Journal of Japanese Society for Quality Control*, 14(2), 38 –48

- Karaki, Wissam (2010), The quality of banking services and its impact on achieving competitive advantage in Palestine from the point of view of administrators and customers, an unpublished master's thesis, College of Graduate Studies and Scientific Research, Hebron University, Palestine.
- Khan, S. (2013). Attaining customer satisfaction! The role of customer value and relation base marketing a study of policy holders of Peshawar Pakistan. *International Journal of Managing Value and Supply Chains*, 4(1), 1-11.
- Kotler, Philip and Keller, Kevin L. (2006). *Marketing Management*, 12th. Ed, Prentice – Hill, Inc., New Jersey.
- Kumaraswamy, S. (2012). Service quality in health care centers: An empirical study. *International Journal of Business and Social Science*, 3(16), pp. 141-150.
- Kuo, Y. F. (2004). Integrating Kano's model into web-community service quality. *Total Quality Management and Business Excellence*, 15(7), 925 –939.
- Lee, W. I., Chen, T. H (2007). The relationship between quality of healthcare service and customer satisfaction: An example of hospitals in Taiwan. *Journal of the Chinese Institute of Industrial Engineers*, 24(1), 87 –95.
- Levens, Michael, (2012). *Marketing: defied explained applied*, 2nd Ed, prentice Hall, Pub, Inc.
- Lovelock, Christopher (1996). *Service marketing*, 3rd Ed., prentice Hall internationally, New York.
- Matzler, K. and Hinterhuber, H.H. (1998) How to Make Product Development Projects More Successful by Integrating Kano's Model of Customer Satisfaction into Quality Function Deployment. *Technovation*, 18, 25-38.
- Mei-ling Yao, Ming-Chuen Chuang, Chun-Cheng Hsu (2018). The Kano Model analysis of features for mobile security applications, *Computers & Security*, Vol. 78.
- Meziane, Abdelkader (2012). *The Impact of Service Quality Determinants on Customer Satisfaction / Case Study of the National Fund for Agricultural Cooperation*

- CNMA, Master Thesis, Faculty of Economics, Management and Commercial Sciences, University of Abu Bakr Belkaid - Tlemcen.
- Min-Yuan Ma, Chun-Wei Chen, Yu-Ming Chang (2019). Using Kano Model to differentiate between Future Vehicle-driving services, *International Journal of Industrial Ergonomics*, Vol. 69.
- Muhammad, Ayoub (2020), The effect of service quality on customer loyalty - an empirical study on a sample of EarthLink subscribers for Internet services in Erbil Governorate, *The Arab Journal for Scientific Publishing*, No. 18.
- Munusamy, J., Chellia.S., and Mun, H. (2010). "Service Quality Delivery and Its Impact on Customer Satisfaction in the Banking Sector in Malaysia". *International Journal of Innovation, Management and Technology*, 1(4):398-404.
- Najm, Abboud Najm, (2010). *Total Quality Management in the Internet Age*, first edition, Dar Safaa for Publishing and Distribution, Jordan.
- Odeh, Rawan (2021). The impact of management information systems on the quality of services in the Jordanian Ministry of Justice, unpublished master's thesis, Al al-Bayt University, Jordan.
- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implications for future research. *the Journal of Marketing*,49(4), 41-50.
- Pham, T. H. (2015). A study of the determinants influencing customer satisfaction in medical tourism industry in Singapore. Doctora Thesis of Science Department of Business Administration, The School of Business & Tourism Southern Cross University, Australia.
- Radfar, F., Omidvari, M., & Haleh, H. (2014). Understanding Customer Requirements through Quantitative Analysis of Services Attributes Based on Kano's Model: A Case study of Tabriz's Municipalities. *International Journal of Scientific Management and Development*, 2(9), 441-448.

- Rashid, M. M. (2010). A review of state-of-art on Kano model for research direction. *International Journal of Engineering Science and Technology*, 2(12), 7481-7490.
- Salman, Muhammad (2016). The level of quality of university services as perceived by the students of Al-Aqsa University in Gaza according to the service quality scale, *Al-Aqsa Journal (Human Sciences Series) Palestine*, Vol. (12), No.17.
- Samuel, L. B.C. (2015) A proposed methodology based on Kano model framework applied to job satisfaction in mature Singaporeans a Thesis submitted to gain for the degree of Engineering department of industrial and systems Engineering national, university of Singapore.
- Sharif, Ali (2020) The Impact of the Quality of Telephone Services Provided by Yemen Mobile Company in Achieving Customer Satisfaction, *Journal of Research and Economic Studies*, Vol. 7, p. 4.
- Suker, Kanza (2021) The quality of electronic banking services as an approach to enhance customer satisfaction: a case study of Al Salam Bank Algeria, *Al-Aseel Journal of Economic Research*, Vol. 5, p. 1.
- Yang, C. C., Sukwadi, R., & Mu, P. P. (2010). Integrating kano model into customer-oriented reputation model in higher education. In *Management and Service Science (MASS)*, International Conference on pp. 1-4.
- Zaribaf, Mehdi (2012) Identification and Prioritization of Effective Services Factors Offered by University for Students' satisfaction, Using Kano's Model, *Islamic Azad University of Iran, International Proceedings of Economics Development & Research*, 1(27), 6 -10.
- Zeithaml, A., Bitner, L. L. (1985). A conceptual model of service quality and its implications for future research. *Journal of Marketing*, 49(4), 41– 50.
- Zeithaml, A., Bitner, L. L. (1988). SERVQUAL: A multiple-item scale for measuring consumer perception of service quality. *Journal of Retailing*, 64(1), 12 –40.
- Zeithaml, Valaric A. & Mary, J. O. Bither, (1996). *Services Marketing*, McGraw-Hill companies, Inc., New York.

Appendices

Appendix A

Questionnaire

استبانة حول

تقييم جودة الخدمة ورضا العملاء باستخدام نماذج SERVQUAL وKano: دراسة حالة

في صناعة البرمجيات

الأخ الفاضل / الأخت الفاضلة: تحية طيبة وبعد،

تسعى الباحثة في هذه الاستبانة إلى تقييم جودة الخدمة ورضى الزبائن باستخدام SERVQUAL & Kano model: دراسة حالة في صناعة البرمجيات، ومن ثم اقتراح إطار نظري لزيادة رضى الزبائن عن جودة الخدمات التي تقدمها الشركات البرمجية في فلسطين اعتماداً على نماذج الدراسة، وذلك بالتنسيق مع المؤسسات والشركات ذات الصلة من أجل تحقيق النجاح المنشود على أساس الإطار المقترح.

وحيث نؤمن أنكم خير مصدر للوصول إلى المعلومات المطلوبة، نتوجه إليكم وكلنا أمل أن أجد التعاون من قبلكم، وذلك من خلال الإجابة على الأسئلة الموجودة في هذه الاستبانة والتي نتعهد لكم بالمحافظة على عدم إظهار هوية المجيب عنها وعدم استخدامها في أي مجال غير مجال البحث العلمي.

ولكم جزيل الشكر والتقدير.

الباحثة: يسرا كفاح شبلي

الجزء الأول: المعلومات الشخصية

الجنس:

() أنثى () ذكر

العمر:

() من 20-30 سنة () من 31-40 سنة

() من 41-50 سنة () أكثر من 51 سنة

الدرجة العلمية:

() توجيهي أو أقل () بكالوريوس

() ماجستير () دراسات عليا

مكان السكن:

() مدينة () قرية

() مخيم

المسمى الوظيفي:

() مدير () رئيس قسم

() موظف

سنوات الخبرة:

() أقل من 5 سنوات () من 5-10 سنوات

() أكثر من 10 سنوات

القطاع:

() صناعي () خدماتي

() تجارة () مصرفي

الجزء الثاني: جودة الخدمات

يرجى تحديد درجة موافقتك أو عدم موافقتك على كل عبارة من العبارات التالية باستخدام المقياس المبين أدناه، ووضع الرقم المناسب في المربع أمام كل منها:				
غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة
(1)	(2)	(3)	(4)	(5)
الجودة الفعلية	الجودة المتوقعة	العبارة		
البعد الأول: الملموسية				
		1. تصميم الخدمات البرمجية يتلائم مع نطاق الأسعار.		
		2. تصميم الخدمات البرمجية يتلائم مع نطاق سمعة الشركة		
		3. تقدم الشركة الخدمات البرمجية لزيائنها بجودة عالية.		
		4. طاقم الشركة يساعدك في تلبية احتياجاتك المختلفة.		
		5. تهتم الشركة بملاحظاتك وتسعى لتحقيقها.		
البعد الثاني: الموثوقية				
		1. عندما يعد موظف الشركة بشيء ما فإنه يقوم بذلك.		
		2. عندما أواجه أي مشكلة، فإن موظف الشركة يقوم بحلها بسرعة.		
		3. تقدم الشركة خدماتها بشكل صحيح من المرة الأولى.		
		4. تقدم الشركة خدماتها في الوقت الملائم.		
		5. تحتفظ الشركة بمعلومات الزبائن وتتواصل معهم.		
البعد الثالث: الاستجابة				
		1. تقوم الشركة بإعلام زبائنها بالضبط عن موعد تقديم الخدمات لهم.		
		2. أتلقى خدمة سريعة من موظفي الشركة.		
		3. موظفو الشركة يتأقلمون مع الطلبات الخاصة.		
		4. يستجيب موظفو الشركة لطلبات الزبائن على الفور.		
		5. يستجيب موظفو الشركة لاي مساعدة فنية يطلبها الزبائن في أي وقت		

الجودة الفعلية	الجودة المتوقعة	العبرة
البعد الرابع: الثقة		
		1. يمكنني الوثوق بجودة الخدمات التي تقدمها الشركة.
		2. أشعر بالأمان في معاملاتي مع موظفي الشركة.
		3. موظفو الشركة يتعاملون بشكل لبق مع الزبائن.
		4. يمتلك موظفو الشركة المعرفة التامة للإجابة على أسئلة واستفسارات الزبائن.
		5. أشعر بالأمان والسرية التامة للمعلومات من خلال الخدمات البرمجية المزودة لي من قبل الشركة
البعد الخامس: التعاطف		
		1. تركز الشركة في اهتماماتها على احتياجات كل زبون.
		2. يمنحني موظفو الشركة الاهتمام الشخصي وتلبية ما احتاجه من خدمات.
		3. يعرف موظفو الشركة ما هي احتياجاتي.
		4. تضع الشركة مصالح الزبائن في سلم أولوياتها.
		5. لدى الشركة ساعات عمل مريحة للزبائن.

القسم الثالث: رضا الزبائن

يرجى تحديد درجة موافقتك أو عدم موافقتك على كل عبارة من العبارات التالية باستخدام المقياس المبين أدناه، ووضع الرقم المناسب في المربع أمام كل منها:				
غير موافق بشدة	غير موافق	محايد	موافق	موافق بشدة
(1)	(2)	(3)	(4)	(5)
العبرة				
				مستوى الرضا
				1. أنا راضٍ عن مستوى التكلفة.
				2. أنا راضٍ عن مستوى خدمات البرمجية في الشركة.
				3. أنا راضٍ عن وقت الانتظار والاستجابة لطلبات الزبائن من قبل الشركة.
				4. أنا راضٍ عن مستوى متابعة الشركة لخدماتها المختلفة مع الزبائن.

مستوى الرضا	العبارة
	5. أنا راضٍ عن الشرح الذي يقدمه موظفو الشركة عن منتجاتهم وخدماتهم المختلفة.
	6. أنا راضٍ عن أداء موظفي الشركة.
	7. أنا راضٍ عن آلية معالجة الشكاوي في الشركة في حال حدوثها.

القسم الرابع: المواصفات المطلوبة لجودة الخدمات - شركة الإسراء

يرجى تحديد درجة موافقتك أو عدم موافقتك على كل عبارة من العبارات التالية باستخدام المقياس المبين أدناه، ووضع الرقم المناسب في المربع أمام كل منها:				
مفضل ان يكون هكذا (5)	يجب ان يكون هكذا (4)	محايد (3)	مقبول (2)	يجب ان لا يكون هكذا (1)
مستوى الموافقة	العبارة			
	1. هل توافق ان تصميم الخدمات البرمجية في الشركة يجب ان يتلاءم مع الأسعار؟			
	2. كيف تشعر تصميم الخدمات البرمجية في الشركة مع الأسعار؟			
	3. هل توافق على وجوب الاخذ برأي الزبائن من قبل الشركة؟			
	4. كيف تشعر ان لم تهتم الشركة برأي الزبائن؟			
	5. هل توافق بان موظف الشركة يجب ان يقوم بما يعد به؟			
	6. كيف تشعر ان لم يقم موظف الشركة بما وعد؟			
	7. هل توافق انه يجب على موظف الشركة يعمل على حل المشكلة بسرعة؟			
	8. كيف تشعر ان لم يستطع موظف الشركة ان يحل المشكلة بسرعة؟			
	9. هل توافق انه يجب على الشركة ان تقوم بتقديم خدماتها بشكل صحيح من المرة الأولى؟			
	10. كيف تشعر ان لم تقم الشركة بتقديم خدماتها من المرة الأولى؟			
	11. هل توافق ان الشركة يجب ان تقدم خدماتها في الوقت الملائم؟			
	12. كيف تشعر ان لم تقدم الشركة خدماتها بالوقت الملائم؟			
	13. هل تعتقد انه يجب على الشركة الاحتفاظ بمعلومات الزبائن والتواصل معهم؟			
	14. كيف تشعر ان لم تحتفظ الشركة بمعلومات الزبائن والتواصل معهم؟			

مستوى الموافقة	العبارة
	15. هل توافق انه يجب على الشركة المحافظة على جودة الخدمات والسرعة الاسجابه؟
	16. كيف تشعر ان لم تحافظ الشركة على جودة الخدمات والسرعة الاسجابه لمتطلبات الزبائن؟
	17. هل توافق ان الموظفين يجب ان يقدموا خدمة سريعة؟
	18. كيف تشعر ان لم يتم الموظفين بتقديم خدمة سريعة؟
	19. هل توافق على انه يجب على موظفو الشركة بان يتأقلموا مع الطلبات الخاصة؟
	20. كيف تشعر ان لم يتم موظفو الشركة بالتأقلم مع الطلبات الخاصة؟
	21. هل توافق بأن يكون هناك ثقة بنصائح ومعلومات موظفي الشركة؟
	22. كيف تشعر ان لم يكن هناك ثقة بنصائح ومعلومات موظفي الشركة؟
	23. هل توافق على الشعور بالأمان في المعاملات مع موظفي الشركة؟
	24. كيف تشعر ان لم يكن هناك الاحساس بالأمان في المعاملات مع موظفي الشركة؟
	25. هل توافق على امتلاك موظفو الشركة المعرفة التامة للإجابة على اسئلة واستفسارات الزبائن؟
	26. كيف تشعر ان لم يمتلك موظفو الشركة المعرفة التامة للإجابة على اسئلة واستفسارات الزبائن؟
	27. هل توافق انه يجب على الشركة التركيز على احتياجات كل زبون؟
	28. كيف تشعر ان لم تقوم الشركة بالتركيز على احتياجات كل زبون؟
	29. هل توافق انه على الشركة ان يضع مصالح الزبائن في سلم أولوياته؟
	30. كيف تشعر ان لم تقوم الشركة بوضع مصالح الزبون في سلم أولوياته؟
	31. هل توافق انه على الشركة ايجاد ساعات عمل مريحة للزبائن؟
	32. كيف تشعر ان لم تقوم الشركة بايجاد ساعات عمل مريحة للزبائن؟

وشكرا على تعاونكم

A questionnaire about

Assessing Service Quality and Customer Satisfaction Using SERVQUAL and Kano Models: A Case Study Approach in Software Industry

In this questionnaire, the researcher seeks to assess service quality and customer satisfaction using the SERVQUAL & Kano model: a case study in the software industry, and then propose a theoretical framework to increase customer satisfaction with the quality of services provided by software companies in Palestine, based on the study models, in coordination with institutions and companies. relevant in order to achieve the desired success based on the proposed framework. And since we believe that you are the best source to access the required information, we turn to you and we all hope to find cooperation from you, by answering the questions in this questionnaire, and we pledge to you to maintain not showing the identity of the respondent and not to use it in any field other than the field of scientific research.

Researcher: Yusra Kefah Shebli

Part One: Personal Information

Gender

Male Female

Age

20- 30 years 31- 40 years

41- 50 years More than 51 years

Scientific degree

Tawjihi Bachelor

Master PhD

Place

City Village

Camp

Job title

Manager Head of the Department

Employee

Experience year

Less than 5 years 5- 10 years

More than 10 years

Business domain

Industrial Services

Commercial Banking

Part Two: Please indicate the degree of your agreement or disagreement with each of the following statements using the scale shown below, and put the appropriate number in the box in front of each of them:

Strongly Disagree	Disagree	Natural	Agree	Strongly Agree
1	2	3	4	5

	Expectations	Perceptions
Tangibles dimension		
Designing software services to suit the price range		
The design of software services is commensurate with the scope of the company's reputation		
The company provides tower services to its customers with high quality.		
The company staff helps you meet your different needs.		
The company cares about your feedback and strives to achieve it.		
Reliability Dimension		
When a company employee promises something, he does it.		
Whenever I encounter any problem, the company employee solves it quickly.		
The company delivers its services right the first time.		
The company provides its services in a timely manner.		
The company maintains customer information and communicates with them.		
Responsiveness Dimension		
The company informs its customers exactly when services will be provided to them.		
I receive prompt service from the company's employees.		
The company employees are accommodating to special requests.		
The company employees respond to customers' requests promptly.		
The company employees respond to any technical assistance requested by customers at any time.		

	Expectations	Perceptions
Assurance Dimension		
I can trust the quality of the services provided by the company.		
I feel safe in my dealings with the company's employees.		
The company employees deal tactfully with customers.		
The company employees have the full knowledge to answer customers' questions and inquiries.		
I feel the complete security and confidentiality of information through the software services provided to me by the company		
Empathy Dimension		
The company focuses its interests on the needs of each customer.		
The company employees give me personal attention and attend to the services I need.		
The company employees know what my needs are.		
The company places the interests of customers at the top of its priorities.		
The company has convenient working hours for customers.		

Section Three: Customer Satisfaction

	degree
I am satisfied with the cost level.	
I am satisfied with the level of software services in the company.	
I am satisfied with the waiting time and response to customer requests by the company.	
I am satisfied with the company level of follow-up on its various services with customers.	
I am satisfied with the explanation given by the company employees about their various products and services.	
I am satisfied with the performance of the company employees.	
I am satisfied with the company complaints handling mechanism in the event of any occurrence.	

Section Four: Specifications required for the quality of services - Al-Israa Company

	degree
Do you agree that the design of software services in the company should be compatible with the prices?	
How do you feel about software design services in the company with prices?	
Do you agree that the customers' opinion should be taken into account by the company?	
How do you feel if the company does not care about customers' opinion?	
Do you agree that the employee of the company should do what he promises?	
How do you feel if the employee of the company does not fulfill his promise?	
Do you agree that the employee of the company should work to solve the problem quickly?	
How do you feel if the company employee could not solve the problem quickly?	
Do you agree that the company should provide its services correctly the first time?	
How do you feel if the company did not provide its services the first time?	
Do you agree that the company should provide its services in a timely manner?	
How do you feel if the company does not provide its services in a timely manner?	
Do you think that the company should keep customer information and communicate with them?	
How do you feel if the company does not keep customer information and communicate with them?	
Do you agree that the company should maintain the quality of services and the speed of response?	
How do you feel if the company does not maintain the quality of services and the speed of responding to customer requirements?	
Do you agree that employees should provide prompt service?	
How do you feel if the staff does not provide prompt service?	
Do you agree that company employees should accommodate special requests?	

How do you feel if the company's employees did not cope with special requests?	
Do you agree that the advice and information of the company's employees should be trusted?	
How do you feel if there is no confidence in the advice and information of the company's employees?	
Do you agree to feel safe in dealings with the company's employees?	
How do you feel if there is no sense of security in transactions with the company's employees?	
Do you agree that the company's employees have the full knowledge to answer customers' questions and inquiries?	
How do you feel if the company's employees do not have the full knowledge to answer customers' questions and inquiries?	
Do you agree that the company should focus on the needs of each customer?	
How do you feel if the company does not focus on the needs of each customer?	
Do you agree that the company should prioritize the interests of customers?	
How do you feel if the company does not prioritize the customer's interests?	
Do you agree that the company should find comfortable working hours for customers?	
How do you feel if the company does not find comfortable working hours for customers?	

Thank you

Appendix B

Tables

Table B.1

Means and standard deviations (SD) for five dimensions

	No.	Statement	Expectations (E)		Perceptions (P)		Gap= P-E
			mean	SD	Mean	SD	
Tangibles	1	Designing software services to suit the price range.	3.88	.707	3.63	.829	-.25
	2	The design of software services is commensurate with the scope of the company's reputation	3.96	.690	3.81	.818	-.15
	3	The company provides tower services to its customers with high quality.	4.07	.821	3.82	.861	-.25
	4	The company staff helps you meet your different needs.	4.08	.765	3.92	.777	-.16
	5	The company cares about your feedback and strives to achieve it.	4.01	.824	3.74	.841	-.27
	Total			4	.655	3.79	.723
Reliability	1	When a company employee promises something, he does it.	4.11	.732	3.79	.812	-.32
	2	Whenever I encounter any problem, the company employee solves it quickly.	4.09	.742	3.78	.782	-.31
	3	The company delivers its services right the first time.	4.04	.804	3.62	.868	-.42
	4	The company provides its services in a timely manner.	4.07	.665	3.70	.775	-.37
	5	The company maintains customer information and communicates with them.	4.21	.683	3.95	.775	-.26
	Total			4.1	.635	3.77	.677
Responsiveness	1	The company informs its customers exactly when services will be provided to them.	4.15	.711	3.94	.733	-.21
	2	I receive prompt service from the company's employees.	4.13	.671	3.81	.720	-.32
	3	The company employees are accommodating to special requests.	4.01	.801	3.64	.878	-.37

	4	The company employees respond to customers' requests promptly.	4.13	.759	3.78	.814	-.35
	5	The company employees respond to any technical assistance requested by customers at any time.	4.11	.790	3.80	.845	-.31
	Total		4.1	.652	3.8	.697	-.30
Assurance	1	I can trust the quality of the services provided by the company.	4.21	.710	3.91	.864	-.3
	2	I feel safe in my dealings with the company's employees.	4.28	.735	3.95	.853	-.33
	3	The company employees deal tactfully with customers.	4.32	.721	4.05	.775	-.27
	4	The company employees have the full knowledge to answer customers' questions and inquiries.	4.05	.930	3.77	.826	-.28
	5	I feel the complete security and confidentiality of information through the software services provided to me by the company	4.27	.718	3.99	.748	-.28
	Total		4.23	.675	3.94	.727	-.29
Empathy	1	The company focuses its interests on the needs of each customer.	4.03	.831	3.69	.926	-.34
	2	The company employees give me personal attention and attend to the services I need.	4.03	.831	3.78	.829	-.25
	3	The company employees know what my needs are.	4.00	.816	3.73	.874	-.27
	4	The company places the interests of customers at the top of its priorities.	4.03	.876	3.77	.920	-.26
	5	The company has convenient working hours for customers.	4.11	.801	3.68	.927	-.43
	Total		4.03	.751	3.73	.796	-.3

Table B.2

Means and standard deviations (SD) and the degree of customer satisfaction & specifications required for the quality of services

No.	Statement	mean	SD	degree
1	Cost of Services	3.41	.927	Satisfied
2	Sense of Wellbeing	3.70	.937	Highly satisfied
3	Waiting Time	3.59	.885	Satisfied
4	Services Delivered	3.71	.901	Highly satisfied
5	Explanation	3.71	.812	Highly satisfied
6	Employees Performance	3.77	.841	Highly satisfied
7	Complaint Procedures	3.73	.799	Highly satisfied
	Total	3.66	0.76	Satisfied
1	Do you agree that the design of software services in the company should be compatible with the prices?	3.85	.913	High
2	How do you feel about software design services in the company with prices?	2.21	1.281	Low
3	Do you agree that the customers' opinion should be taken into account by the company?	3.89	.942	High
4	How do you feel if the company does not care about customers' opinion?	1.94	1.282	Low
5	Do you agree that the employee of the company should do what he promises?	3.98	.843	High
6	How do you feel if the employee of the company does not fulfill his promise?	1.78	1.160	Low
7	Do you agree that the employee of the company should work to solve the problem quickly?	3.97	.744	High
8	How do you feel if the company employee could not solve the problem quickly?	1.94	1.255	Low
9	Do you agree that the company should provide its services correctly the first time?	4.04	.871	High

No.	Statement	mean	SD	degree
10	How do you feel if the company did not provide its services the first time?	1.94	1.257	Low
11	Do you agree that the company should provide its services in a timely manner?	4.04	.804	High
12	How do you feel if the company does not provide its services in a timely manner?	1.81	1.167	Low
13	Do you think that the company should keep customer information and communicate with them?	4.04	.796	High
14	How do you feel if the company does not keep customer information and communicate with them?	1.81	1.205	Low
15	Do you agree that the company should maintain the quality of services and the speed of response?	4.10	.771	High
16	How do you feel if the company does not maintain the quality of services and the speed of responding to customer requirements?	1.79	1.189	Low
17	Do you agree that employees should provide prompt service?	4.04	.827	High
18	How do you feel if the staff does not provide prompt service?	1.88	1.220	Low
19	Do you agree that company employees should accommodate special requests?	3.94	.943	High
20	How do you feel if the company's employees did not cope with special requests?	1.96	1.235	Low
21	Do you agree that the advice and information of the company's employees should be trusted?	4.06	.746	High

No.	Statement	mean	SD	degree
22	How do you feel if there is no confidence in the advice and information of the company's employees?	1.89	1.244	Low
23	Do you agree to feel safe in dealings with the company's employees?	4.03	.827	High
24	How do you feel if there is no sense of security in transactions with the company's employees?	1.83	1.209	Low
25	Do you agree that the company's employees have the full knowledge to answer customers' questions and inquiries?	4.01	.839	High
26	How do you feel if the company's employees do not have the full knowledge to answer customers' questions and inquiries?	1.82	1.238	Low
27	Do you agree that the company should focus on the needs of each customer?	3.98	.854	High
28	How do you feel if the company does not focus on the needs of each customer?	1.97	1.256	Low
29	Do you agree that the company should prioritize the interests of customers?	4.04	.796	High
30	How do you feel if the company does not prioritize the customer's interests?	1.92	1.269	Low
31	Do you agree that the company should find comfortable working hours for customers?	4.02	.748	High
32	How do you feel if the company does not find comfortable working hours for customers?	1.94	1.275	Low
Total		2.95	0.627	Moderate



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إعداد

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قدمت هذه الرسالة استكمالاً لمتطلبات الحصول على درجة الماجستير في الإدارة الهندسية من كلية الدراسات العليا، في جامعة النجاح الوطنية، نابلس-فلسطين.

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الملخص

تهدف هذه الدراسة إلى تقييم جودة الخدمات ورضا العملاء عن الخدمات المقدمة في قطاع صناعة البرمجيات في فلسطين من خلال الاعتماد على النموذجين SERVQUAL وKano، ولتحقيق أهداف الدراسة استخدمت الباحثة المنهج الوصفي التحليلي القائم على دراسة المشكلة وجمع المعلومات المتعلقة بها للإجابة عن أسئلتها وفرضياتها.

كما تستخدم الباحثة أداة الدراسة (الاستبانة) لجمع البيانات من خلال مسح عينة الدراسة المكونة من 160 مشاركاً من عملاء شركة الإسراء للبرمجيات.

أشارت نتائج الدراسة إلى أن نتائج مستويات الجودة المتصورة والمتوقعة في قطاع صناعة البرمجيات باستخدام نماذج الدراسة المستخدمة تظهر أن متوسط التوقعات أعلى من متوسط الفعلي لجميع أبعاد جودة الخدمات، كما كانت درجة رضا العملاء معتدلة إذ حققت 73.2%. بالإضافة إلى ذلك، أشارت النتائج إلى عدم وجود أثر لعوامل الملموسة والاستجابة على مستوى رضا العملاء في قطاع صناعة البرمجيات، بينما كان هناك أثر لعوامل الموثوقية والتعاطف على رضا العملاء.

بناءً على نتائج الدراسة أوصت الباحثة بمجموعة من التوصيات والتي ركزت على شركات تطوير البرمجيات التي يمكن أن تستفيد من نتائج بحث باستخدام نماذج SERVQUAL وKano لتحسين عرض الخدمات وتحديد الخدمات المحددة التي تزيد من سعادة العميل، وضرورة ان تعمل شركات

البرمجيات الفلسطينية على إنشاء هياكل تنظيمية واستراتيجيات منهجية لتقديم الخدمات وفقاً لمتطلبات الزبون بدلاً من الاعتماد على مهارة الموظفين. ووفقاً لتحليل نماذج الدراسة فإن المكونات الرئيسية التي تتطلب إعادة التقييم من حيث الأهمية هي تلك المتعلقة بالوقت، وعلى وجه التحديد: التواصل مع العملاء عند تقديم الخدمة، وتقديم الخدمة في الوقت المحدد، وتقليل وقت الانتظار الإجمالي.

الكلمات المفتاحية: البرمجة؛ العملاء؛ Kano Model؛ SERVQUAL؛ رضى.