

**T.C.
ISTANBUL GEDİK UNIVERSITY
INSTITUTE OF GRADUATE STUDIES**



THE MEASUREMENT OF SERVICE QUALITY IN REAL-ESTATE

MASTER'S THESIS

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**Department of Engineering Management
Engineering Management Program**

FEBRUARY 2022

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THESIS APPROVAL

The thesis work of Salah Salem Khalifa ABOUHARBA, student of our Institute's Social Science Thesis Master's Program with number 191281042, was accepted as a Master's thesis by the majority of the votes of the following jury in the thesis defense exam held on 07/02/2022.

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FOREWORD

I would like to thank my advisor, Asst. Prof. Dr. Utku Canci MATUR, for her help and support. It was very valuable for me to work under her auspices and to progress through the writing stages of this thesis with her passion, knowledge and uninterrupted support.

February 2022

Salah Salem Khalifa ABOUHARBA

DEDICATION

I would like to express my gratitude to my family and friends in Turkey and Libya for their patience, compassion and constant inspiration throughout the training.

February 2022

Salah Salem Khalifa ABOUHARBA

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THE MEASUREMENT OF SERVICE QUALITY IN REAL-ESTATE

ABSTRACT

Measuring service quality in terms of service businesses is an important issue that needs to be emphasized. Intangible relationships rather than physical products contribute to the quality of services. When it comes to measuring service quality, things get a lot more complicated than when it comes to measuring product quality. Today's marketing environment places a high value on acquiring new customers and maintaining relationships with existing ones, and real estate consulting firms are no exception. The management of marketing activities is greatly aided by the ability to measure and quantify an intangible concept like service quality. According to this study, the quality of services provided by a corporate real estate brokerage in Libya were evaluated. It was decided to use Parasuraman, Zeithaml, and Berry's Servqual Model, which has a wide application in the service industry in general and can be tailored to fit any industry.

Keywords: Quality, Service, Businesses, Servqual Model, Real Estate, Libya.

GAYRİMENKULDE HİZMET KALİTESİ ÖLÇÜMÜ

ÖZET

Hizmet işletmeleri açısından hizmet kalitesinin ölçülmesi üzerinde durulması gereken önemli bir konudur. Fiziksel ürünlerden ziyade maddi olmayan ilişkiler, hizmetlerin kalitesine katkıda bulunur. Hizmet kalitesini ölçmek söz konusu olduğunda, işler ürün kalitesini ölçmekten çok daha karmaşık hale gelir. Günümüzün pazarlama ortamı, yeni müşteriler edinmeye ve mevcut müşterilerle ilişkileri sürdürmeye büyük önem vermektedir ve gayrimenkul danışmanlık firmaları da bir istisna değildir. Hizmet kalitesi gibi soyut bir kavramı ölçme ve nicelleştirme yeteneği, pazarlama faaliyetlerinin yönetimine büyük ölçüde yardımcı olur. Bu çalışmaya göre, Libya'da bir kurumsal emlak komisyoncusu tarafından verilen hizmetlerin kalitesi değerlendirildi. Genel olarak hizmet sektöründe geniş bir uygulama alanına sahip olan ve her sektöre uyacak şekilde uyarlanabilen Parasuraman, Zeithaml ve Berry'nin Servqual Modelinin kullanılmasına karar verildi.

Anahtar Kelimeler: Kalite, Hizmet, İşletmeler, Servqual Modeli, Emlak, Libya.

1. INTRODUCTION

The need for shelter, which has been among the basic needs since the beginning of human history, has led to the need for construction. The construction has undergone various changes in the process until today. Especially the process that started with the industrial revolution revealed the population movements in which urbanization accelerated and caused people to accumulate more in cities. The changing economic structure in the 1980s caused significant changes in the structure of cities in parallel with the real estate sector.

The real estate sector in major metropolises around the world; After the growth, towards the end of the 1980s, it went through a process of division. The USA, England and Japan were most affected by this situation. The process also caused a change in the socio-economic structure of the cities and there were rapid decreases in prices in the real estate markets of central countries. The sudden change in the market caused economic difficulties in many circles concerning the real estate market, and bankruptcies occurred in many sectors. All these negative situations were also reflected in the academic literature and became the focus of attention (Gummesson, 1994).

With the increase in the demand for housing as a result of these developments, the emergence of large construction companies, government supports, and credit supports in the banking sector, housing continued to be produced at an increasing rate day by day. More emphasis has been placed on marketing, especially in large companies, in order to sell the manufactured houses.

The real estate market is defined as the market where immovables are exchanged and where immovables are exchanged for money and similar valuable things. This change also takes place with the interaction of individuals and actors in the market.

In the competitive environment, the needs of businesses to develop new strategies that will differentiate themselves are increasing day by day. With the expansion of

the service sector, services have diversified and the number of service providers has increased. Today, service businesses are growing rapidly and competing with each other in free market conditions. It is also an important factor for service enterprises to produce quality services that will meet customer expectations in order to provide competitive advantage. This situation reveals the importance of service quality (Fitzsimmons & Fitzsimmons, 2006).

In countries such as Libya, where the real estate sector has an important place, service quality emerges as an issue that should be emphasized. Real estate brokerage firms, where all kinds of real estate sales and purchase transactions are made, are trying to increase their market shares with the names they use, on the one hand, and on the other hand, they are trying to grow with the services they offer. For these reasons, the real estate sector is one of the most important service sectors. In this area, many new brands are trying to create a more effective image by institutionalizing.

Measuring service quality in terms of service businesses is an important issue that needs to be emphasized. Quality in services includes a system of intangible relationships rather than quality in physical products. This situation differentiates and complicates the measurement of service quality compared to that of goods. Considering today's marketing environment, where gaining new customers and retaining existing customers is of vital importance, real estate consultancy companies are also trying to fulfill these two important goals. Measuring and concretizing an intangible concept such as service quality is very important for the management of marketing activities (Gronroos, 1990).

This study was carried out to measure the quality of services provided by a corporate firm that provides brokerage services in the real estate sector in Libya. In the research, the Servqual Model, which is a reliable and useful model developed by A. Parasuraman, V. Zeithaml and L. Berry, which has a wide place in the service sector in the universal sense and can be adapted to the entire service sector, was used.

This thesis consists of three parts. In the first chapter, there are detailed analyzes of the concept of service and its general characteristics, the concept of quality, service quality, service quality measurement and Servqual scale. In the second part, the definition of real estate which is the subject of the research and marketing issues in

the real estate sector are given. In the second part, the research conducted to measure the quality of the services offered by a corporate brand that provides intermediary services in the real estate sector in Libya by applying the Servqual Model and the evaluation of the research data obtained are included.



2. SERVICE QUALITY CONCEPTUAL FRAMEWORK

2.1. Importance of Service

Societies are divided into three groups according to their economic development stages as pre-industrial, industrial and post-industrial societies. Agriculture, mining and fishing as the most dominant activities in the pre-industrial period; The emphasis is on the production of goods in the industrial period. In the post-industrial period, it is said that living standards are determined by measuring services such as health, education, entertainment and recreation (Grönroos, 1990).

In the 1900s, only 3 out of ten workers in the United States were employed in services-related industries, while the rest were employed in agriculture and industry. By the 1950s, the service sector employed half of the total workforce. Today, 8 out of 10 employees work in the service sector. During the 1990s, a great development was witnessed from production-based industry to service-based industry. According to the data of the Ministry of Commerce in the same country, it is estimated that the population of 24 million, which constitutes 92% of the 26.4 million new job opportunities expected to be created between 1992 and 2005, will be in the service sector. More than 25% of these will be in the health and business services sector, and the leading areas of development are; It is estimated that it will occur in retail and trade, government services, finance, insurance and real estate sectors.

In developed countries II. There are many factors underlying the rapid growth of the service sector after the World War II. These factors are the transition to the information age as a result of the rapid progress in computer systems and technology, the decline in the agricultural economy and the growth in the industrial economy, the developments in the field of medicine, the increasing importance of people's non-work time, the increase in per capita income, the change in the socio-cultural structure and the technological developments in the industry (Galup et al., 2009).

As a result of the consumption of the goods or services produced, it has been observed that various sub-services have emerged in all areas of the service industry such as finance, service, health, tourism.

The change in the welfare level of societies has led to the development of new services specific to various social areas. This situation, together with the increase in the production of goods after the industrial revolution, brought along important developments in the service sector (Kellogg & Nie, 1995).

Official statistics on the service sector appear as a reminder of the past and the new economic system that started with the industrial revolution. Today, in many fields, services are accepted as the main starting point in the new economy. The economic development of states is an important indicator that the share of the service sector in the country's economy is gradually increasing. The service sector, which is seen as one of the main factors of today's economy, is also one of the sectors that provide added value in terms of people and economy.

Today, the value given to services by people is more than the value given to products. The values produced by service firms are comparable and even higher than those produced by firms producing goods. Service industries, like manufacturing industries, tend to grow (McNaughton et al., 2010).

2.2. Definition of Service

Service is often encountered as a difficult concept to define. The fact that it is not easy to define the services that consumers will perceive as “benefits” makes this situation difficult. The main reason for this situation is the structural differences between the services provided simultaneously with the goods and the other services provided regardless of the goods, providing competitive advantage or customer satisfaction. Another factor of difficulty in defining services is that goods are generally intended to meet human needs, while services are oriented towards solving problems arising from human needs. For example, while eating and drinking is seen as a need, it may bring to mind the question whether rest, entertainment and vacation can be considered as a need. It should be taken into account that technology has brought rapid development to the developments in the service sector, and that the

service sector has also mobilized technology. It should be discussed whether it is a correct concept to define services as intangible products and to consider the service-technology relationship separately (Pollitt et al., 2016).

“Service” is directly or indirectly related to every subject related to people. Different types and features of service can be mentioned. It is difficult to talk about a general definition covering all these types of services.

We live with the concept of service in meeting different needs at every stage of life. As a natural consequence of living as a society, service is an important need. The concept of service emerges in every subject related to people.

Looking at the definitions of service in the literature, it is seen that there are different definitions. These definitions of service can be grouped under four headings (Osborne et al., 2013):

1. Definitions for classifying services.
2. Definitions describing the structural features of the service.
3. Definitions describing the whole concept of service or the concept of total service
4. Definitions that classify the service according to the units affected by the services.

There are many definitions for service in the literature. At this stage, the service definitions specified in some sources are mentioned.

Services are “activities, benefits or gratifications offered for sale”, “An intangible activity or activity that does not require ownership of one party to another”. According to the definition made by the American Marketing Association, service; They are the independently expressed actions that create the satisfaction of wants and needs when it reaches the end consumers and businesses, independent of the sale of a good. Based on these definitions, the service; It is possible to define it as “the set of abstract activities that are offered for sale at a certain price in order to meet the needs of people or groups of people and that do not require the ownership of any goods and that create benefits and satisfaction” (Johnson et al., 2007).

A service is a product or activity that has no tangible features that emerges to meet human needs. At the same time, it is possible to define service as an economic

activity. Every service has economic benefits such as place, time, form. In another definition, service is defined as “benefits purchased by consumers without ownership relationship.” Goetsch and Davis defined service as “service is producing work for someone else.” Collier service is defined as “a work or activity, performance, social There are various structural features that distinguish services and goods from each other. These features are that services have an intangible structure, production and consumption are simultaneous without separating from each other, services are variable, they occur as heterogeneous because they satisfy needs at different times, and they are perishable (Johnson et al., 2007).

Some of the other definitions of service in the literature are as follows;

Lovelock (2000), Service is an action, benefit or achievement that parties offer to each other. The most important feature that distinguishes goods from services is intangibility. Because service, unlike an object, emerges as a result of performance or actions.

Kotler and Armstrong (2010) defined service as an act or benefit offered by the parties to each other, which has no tangible structure, cannot be touched, and does not end with the ownership of something. Its production can take place depending on a concrete product or it can be independent from the product.

Services are elements that have an important place in people's daily lives and will always continue to exist. The services that exist with the life of human beings are the elements that provide more spiritual satisfaction than material satisfaction.

We can define service as intangible products produced to meet customer needs. Service can also be expressed as performances that provide psychological benefits such as place, time and form, which have an economic return at the same time. According to another definition, service is social activities that occur as a result of mutual interaction between consumers and service providers.

The general features that emerge from the definitions of services are as follows. Since services do not have physical structures, the functions brought by the concept of abstraction are mentioned. Another feature of the service, inseparability, in other words simultaneous production and consumption, means that it is impossible to stock the service. In addition, services are not physically transported from one place to

another, as is the case with physical products. It is possible to say that there are benefits that arise as a result of the interaction between customers and service providers and that meet or satisfy a specific need of customers and result in a unique experience for each customer (Hood, 2007).

2.3. Features of Services

In terms of the basic features of services, four factors are mentioned. These factors can be listed as intangibility, variability and heterogeneity (inhomogeneity), perishability, inseparability (simultaneous production and consumption). The inseparability feature of services, in other words, the simultaneous production and consumption of services affects all service-related elements. These elements can be expressed as service production, service marketing, quality perception and satisfaction of customers. The intangibility of services makes it difficult for customers to evaluate the quality of the service before purchasing the service. It often makes it difficult for the service buyer to evaluate the quality of the service after the purchase and use of the service. Similarly, it is a very difficult process to control services in terms of quality. However, it is possible to standardize service quality at a certain level as a result of the training of service workers (Gmach et al., 2008).

2.3.1. Abstractness

Services are products that cannot be seen with the naked eye due to their intangible characteristics.

Services are a work that emerges as a result of a certain performance. They do not have a physical structure.

The intangible nature of services means that they are physically intangible, invisible, not defined by a unit of measurement, and cannot be stored. In terms of these features, services are defined as perishable products. It is not possible to pre-produce and stock the services for later. For example, it is not possible to store and sell the empty seat capacity on a bus for another time. In other words, not consuming the service after its emergence is an economic loss (Gmach et al., 2008).

The service sector is a sector that is directly related to groups of people. In the sector where there is direct contact with people, the probability of making mistakes is quite high, and the competition in the service sector is more than in other sectors.

2.3.2. Homogeneity (Heterogeneity)

The heterogeneous nature of services brings along some difficulties in re-presenting the same service at different times. Service quality varies according to the place where the service is created or provided, the time of service delivery and the way the service is delivered. In particular, the personal characteristics and behavioral patterns of service providers affect the perception of service recipients about service quality.

Since services are generally human-powered performances, it is not possible for the same service to be equivalent in different times. In this respect, services vary in terms of content and quality, from service creator to consumer, from consumer to consumer, and even from day to day. Variability in service output is a problem encountered more in sectors where labor is concentrated (Zeithaml, Parasuraman, & Berry, 1985).

2.3.3. Indistinguishability (Simultaneous Production and Consumption)

After physical products are produced, they are stored and sold and consumed by those in need. The realization of consumption of services as soon as they are produced reveals the feature of being indistinguishable from the service provider. For example, after the movie ticket is purchased, it is produced and consumed simultaneously in the movie theater. This makes customers an integral part of production. Another consequence of simultaneous production and consumption is that the service provider sees itself as a part of the resulting product. Customers consider themselves as the beginning of the service experience. The interactions of customers with each other affect each other positively or negatively during the service production process (Benkenstein et al., 2017).

2.3.4. Instability

Depending on the intangible structure of services, simultaneous production and consumption reveals the feature of perishability, which is another feature. In terms of these features, services cannot be stocked, returned or resold. For example, empty seats on a plane flight are an economic loss. If services are not consumed as they are produced, they cannot be stored for remarketing. Services are perishable in these aspects. The irregular demand in some service sectors increases the perishability of the service. The claim against the service differs according to the time in question. This situation changes according to the season, months, various times of the week and even various hours of the day.

If services are not consumed after they emerge, they create economic losses due to their perishability characteristics. The lack of return of these losses; It causes the demand for service to differentiate over time and the inefficient use of service tools (Cater-Steel et al., 2006).

2.4. Classification of Services

Within the service sector, it is possible to see many service categories and service jobs with different structures and features in each category. Therefore, grouping services with similar characteristics is important for a better understanding of that service and for the development of the most appropriate strategies for the service.

The main purpose of classification of services is based on a clearer understanding of services and grouping similar services together. This situation also causes difficulties when classifying services with different characteristics in terms of service type and complicates the classification (McNaughton et al., 2010).

Since the service sector covers a wide area, it is not possible to make a classification that will include all services. For this reason, various approaches to service classification have been made. One of these approaches classifies goods according to their durability and non-durability. For example, while goods that are consumed once or several times, such as foodstuffs, cleaning products, have the characteristics of perishable goods; Goods that can be used many times and for a long time, such as

automobiles, washing machines, refrigerators, have the feature of durable goods. Another classification is the classification of service delivery based on workforce or equipment. While services in fields such as health services, consultancy, and law are labor intensive; internet banking can be shown as an equipment-based service.

Another form of service classification is the classification related to the structure of the service. Unlike the production of goods, customers participate directly in the production stages of the service. Sometimes this happens with the full participation of customers in service delivery, and sometimes only with their participation in some phases of service delivery (Hood, 2007).

2.5. Quality Concept

2.5.1. Historical Development of Quality Concept

When we look at the concept of quality, we come across findings as old as human history. "If a house built by a builder is demolished due to the master's incompetence and failure to do his job properly, causing the owner's death, that master will be killed." Although this law seems quite far from today's modernity, it clearly reveals the importance of the quality phenomenon by keeping the person who built the house responsible for the control of the house (Santos, 2003).

Quality in the service sector is as important as it is in the manufacturing sector. Looking at the historical development of quality, it has been seen that product quality-oriented studies have been carried out for many years. In the process towards the end of the 18th century, studies were carried out to define the concept of service in the expressions that started with Adam Smith and later developed by Alfred Marshall. With the understanding of the importance of service-related concepts, questions about service quality have emerged (Seth et al., 2005).

The concept of quality, which is as old as the date when mankind first started trading, has developed together with concepts such as customer satisfaction and customer loyalty with the industrial revolution. In these periods, it was thought that quality was a natural part of the products or services produced. This was due to the fact that

businesses thought of their customers as family members. Machinery after the industrial revolution (Seth et al., 2005).

With the development of technology, there has been a transition from workshop type production to factory type production and structures that respond to the needs of larger masses have begun to form. This revolution in the industry has given importance to the masters and journeymen, whose importance was gradually weakening in the previous stages, as a skilled workforce in the new period. On the other hand, the fact that more production is seen as a success criterion in markets with production deficits has created an employment gap in parallel with the increase in production. This employment gap was tried to be met with unqualified workers, and as a result, there was a decrease in quality (Lee et al., 2000).

After the First World War, it was agreed that the quality control works in production, which turned into a more complex structure than before, should be implemented by qualified specialists. The most distinctive feature of this period was that the quality was limited only in the 'Inspection' dimension. With these developments, the quality control units, which have become an independent unit, have developed separately outside the production department. The effects of World War II created the need to use materials and equipment in large quantities and of standard quality. As a result of this, "Statistical Quality Control" control studies were carried out. This period actually emerged with the more dynamic development of previous periods. Quality control processes were applied with methods such as sample planning and control charts.

In parallel with the developments in the world, Japanese scientists also established the Engineers' Union in 1946-1947. Dr. Kaoru Ishikawa has done training on quality as one of the most important names in this field. They also invited Western scientists to conferences on quality. Famous American scientist Dr. Deming conducted quality studies with Japanese managers and participated in training activities at quality conferences (Dabholkar et al., 2000).

Studies on total quality control were first made by Feigenbaum in 1951. Feigenbaum brought a brand new understanding and perspective to quality. Feigenbaum defined Total Quality Control as "an effective method that combines the efforts of different groups in an enterprise to improve quality, maintain quality and improve quality, in

order to realize product and service quality at the most economical level, taking into account customer satisfaction.” Quality control; “As quality is everyone's responsibility in a business, it may not be anyone's responsibility”. The basic idea is to manage quality effectively and to ensure that this effect is visible even in the top management units. Total Quality Control; Production, design, marketing, logistics etc. requires the active participation of all departments (Brady et al., 2002).

Technological developments and the development of production systems have made the formation of coordination and feedback mechanisms between controllers and decision makers a necessity. This need simultaneously led to the implementation of a total quality management approach. Quality control has developed in the form of total quality management by following the intermediate input, in-process and final output stages, starting from the pre-production design stage and covering the whole process. The foundations of the concept of “Total Quality Management” were laid by W Edward Deming, Joseph Juran and Philip Crosby, who are known as the architects of quality philosophy. Armand V Feigenbaum and Kaouru Ishikawa, among other scientists, made great contributions to the adoption of the total quality management approach with their studies.

In the historical process, it is seen that the issue of quality has reached the present day by passing through four main stages. These stages are inspection, statistical quality control, total quality control and total quality management stages arising from the philosophy of handling the entire quality system as a whole (Sureshchandar et al., 2002).

2.5.2. Definition of Quality Concept

The concept of quality has emerged from two basic facts of people and systems in general. The first of these is "to make mistakes" and the second is "the desire to reach perfection". Quality derives from the Latin word "Qualis" which means how it is formed.

Different definitions of quality have been made in the literature. Hall (1990) defined quality as conformance to standards, while Crosby (1979) defined it as conformance

to needs. Juran (1980), emphasizing the functional side of quality, defined quality as suitability for use.

Famous quality expert Walter A. Shewhart has brought a definition by emphasizing the difficulties in measuring quality. Shewhart defines it as "the difficulty of transforming the design and production of products that satisfy the future needs of the customers with the price they are willing to pay, into measurable characteristics". This is not easy, and when the needs of the customers change at a time when one feels successful enough, it complicates the situation. At this stage, with the emergence of competitors, he sees that there are new materials that need to be used, and that some of the opportunities are better than the old ones, some of them are worse than the old ones and the renewal is more expensive (Pollack, 2008).

Quality can be defined as compliance with the purpose and conditions according to the usage area. In other words, a systematic approach in reaching perfection can also define quality.

When we look at the first definitions of quality in the literature, it is seen that the studies on the subject mostly include statements that describe the definition of physical products and the measurement of quality. The American Society for Quality Control defines quality as all the characteristic features of products or services that reveal their ability to meet a particular need. European Quality Control Organization quality; defined as the degree of conformity of a product or service to consumer needs. German Quality Institute; It defines a product or service as fulfilling the desired needs under the stipulated conditions. The main idea to be drawn from these definitions is as follows. Quality can be defined as the ability of all the features of a product or service to meet the expectations and needs of customers (Zeithaml, 2000).

The approach of Japanese theorist Masaaki IMAI, who has important studies on quality management and introduced the concept of Kaizen, is as follows (Rolland & Freeman, 2010);

“Quality in general terms means continuous improvement”. The first thing that comes to mind when defining quality is the functional quality of products or services. When analyzed according to Kaizen philosophy, the quality of products or services cannot go beyond the designed level. At this stage, since the role of the human factor

in the design is at the forefront, first of all, studies should be conducted on human quality issues.

Quality is generally defined as superiority and excellence (Brady & Cronin Jr, 2001).

Zeithaml (1988) defined quality in two ways: objective quality and perceived quality. Objective quality describes the perfection or technical superiority of products. In this respect, objective quality can be defined as the predetermined and measurable ideal standards of the product or service. There are some problems with the measurement of objective quality when there is no consensus on what the ideal standards are. These issues are related to the selection of characteristics that determine objective quality and the importance of these characteristics. Maynes (1976) did not accept the existence of objective quality and argued that all quality assessments are subjective. In a way, this statement supports the perceived quality, which is the second definition of quality made by Zeithaml (1988). Perceived quality is defined as the conformity of a product or service's qualities to certain standards or above these standards in terms of customers. Customers expect the product or service to maintain its functionality as expected and at least until a certain desired time. The main purpose of the expression of perceived quality is that the perception of quality can actually change from person to person, according to expectations and needs.

The fact that the concept of quality has a multidimensional structure has led to different definitions in explaining quality. While in traditional thought, quality is viewed as conforming to standards, today it is seen that quality has a more dynamic structure. This situation contributes to the continuous improvement of quality and quality standards (Zeithaml et al., 2000).

2.6. Service Quality

The service sector has become a sector whose importance has increased with the increase in income level that has emerged in parallel with the developments in industrialization. There is no agreed definition of service quality similar to the difficulties in defining quality. The main reason for this situation is that the service acts in a very wide range of sectors and at the same time it stems from the unique characteristics of the service sector (Hays & Hill, 2001).

The data obtained from the studies on the definition and measurement of quality are not sufficient to define the concept of service quality. While the quality of physical products can be expressed with concrete indicators, service quality is measured as a result of customers' perception and evaluation. Services differ from physical products in terms of their intangible features, and service quality is also intangible. In the literature, the term "perceived service quality" is used more frequently instead of service quality.

The emergence of the concept of service quality, II. After the World War II, it was realized together with the concept of total quality management led by Deming, Juran and Crosby, which was mentioned before. The concept of quality, which created the agenda for the production sector in the 1980s, was among the topics that started to be discussed in the service sector. In this period, businesses had to act by aiming to reach perfect quality in product and service production in order to regain the values they lost. Measuring quality in physical products is easier because they have certain tangible properties. But in services, the situation is a little different. Services such as intangible structure, heterogeneity, time difference between two services and perishability (Lee & Lin, 2005).

The unique characteristics of the services make it difficult to evaluate the service quality. Looking at the academic studies on service quality, it is seen that there are studies on the measurement of service quality in many areas such as transportation and accommodation, health services, public sector, retail sector, insurance businesses and consultancy services.

As the measurement of service quality is difficult, it seems to be a very difficult and complex issue in terms of quality applications, controllability and measurement continuity in the service sector. Service quality perception is perceived differently for many reasons. This situation usually differs according to the person providing the service and the customer receiving the service. This difference is due to the fact that the standardization of the service according to the products is negligible (Wanjau et al., 2012).

Therefore, it is difficult to measure and evaluate such a concept. Service quality is an important element for the company providing the service to differentiate itself from its competitors. The care shown in this regard can provide permanent competitive

advantages to the business. As in organizations that produce with high quality, quality is an important part of long-term profit in the service sector. Superior service quality is a factor that precedes generating more business for higher profits. Service quality prepares the necessary ground for the next sale in positive and negative terms (Sivadas & Baker- Prewitt, 2000).

With globalization, the share of the service sector has increased significantly according to the amount of production in the world. With this sudden rise, the importance of the concept of customer satisfaction has emerged in parallel with customer loyalty. Minimizing faulty service production and improving service quality has become important for service quality development. This situation has become an important element that brings profit by increasing productivity for businesses, preventing the loss of important values such as money and time. It also enabled the production of higher quality services at lower costs. The rapid change in the service sector in recent years has made it necessary for service companies to compete in larger markets. The societies' being more conscious about quality has increased the importance of quality in service production and the development in this area has increased noticeably. This development has provided businesses with the opportunity to serve more loyal customers by gaining new customers. It has been observed that business volume will increase with loyal customers, and businesses can stand out in price-based competition with less effort and expense. With this awareness, businesses have focused on the provision and management of service quality and have made this issue the main goal (Erto & Vanacore, 2002).

2.7. Definition of Service Quality

Service quality means that the service characteristics adapt to the conditions and needs of the enterprise for the service provider. The development of these operations is related to the internal efficiency studies that reveal the maximum output at the minimum cost level. For the service recipient, service quality means how well it meets or exceeds expectations. There are differences between customers and service providers' understanding of quality. While quality means the continuation of operations at the same production level for the service provider, customers will perceive the level of quality differently in the process (Erto & Vanacore, 2002).

In 1983, Lewis and Booms defined service quality as the level of service provided to meet customer expectations. The output of service quality should align with customer expectations. Grönroos (2000), emphasizing functional quality, focused on the technical benefits of the service quality output to the customer as a result of the interaction between the service provider and the customer. Perceived service quality; It emerges as a result of comparing the expectations of the customers before the service experience with their experience after receiving the service. This result is based on the customer's expectations about service quality, the process of delivery of the service and the quality of the presentation environment (Parasuraman, Zeithaml and Berry, 1985).

The product or material served refers to the basic feature and design of the services. The second dimension is the environment where the service takes place, briefly the place where the service is delivered. The third dimension, the way the service is delivered and the personnel, are related to the formal and human factors related to the transfer of the service from one party to another at a certain time (Harrison-Walker, 2001).

The fact that the basic features of the services are different from the physical products also differentiates the quality perception and evaluation of the customers. The intangible nature of the services makes it difficult to evaluate the quality before purchasing services and affects customer satisfaction after service delivery. In addition, the fact that quality control in services is more difficult than physical products affects the quality of service output at the same rate. When effective management of the process is ensured with qualified personnel and training, it is possible to standardize service quality components at a certain level.

One of the most important definitions of service quality in the literature is as follows; “Service quality is the final version of the comparison of customer expectations with the perceived output after service procurement”. However, service quality is generally defined as the expectations of customers about the service. Therefore, the concept of expectation here is not in a certain standard due to the differences in customer perceptions. This is a controversial issue by some researchers working in the field of service quality. The most accepted definition of service quality in the literature is as follows. Service quality is a measure of the level at which customers'

expectations are met, and providing quality service is meeting customer expectations at the desired level (Schembri & Sandberg, 2002).

Service quality is the expression or result of how customers perceive the difference between service expectation and actual service output. The evaluation of this difference is as follows; If the perceived service is better or higher than the expectation, it is concluded that the service quality is high. If the situation is the opposite, that is, if the perceived service is worse or lower than the expectation, then the service quality will be perceived as low. The difference is the determinant of customer satisfaction. For customers, the element of satisfaction can be expressed as the level of satisfaction resulting from the experience of a particular product or service. The satisfaction factor, which is the result of the service quality perception of the customers, has a great influence on the preferences for the future. Customers will recommend the service by conveying their positive opinions and experiences about the companies they buy to the people around them (Ardakani et al., 2015).

Many studies have been carried out to better understand service quality. Grönross (2000) explained that there are two important factors that determine service quality, and they consist of technical and functional quality. These factors emerge as a result of evaluating the customer service expectation by comparing the service received. Lehtinen and Lehtinen explained that service quality has three dimensions. They stated that the physical quality of the services, which includes the tangible features, the image of the company, the personnel in contact with the customers and the quality of the communication with the customers. Rust and Oliver (1994) also stated that service quality should be evaluated in three stages. They explained these stages as production of service, distribution of service and service area. Brady and Cronin (2001) also explained that service quality has three dimensions. Service interaction quality is the quality of the physical environment in service delivery and the quality of service output.

Studies on service quality generally take into account the performance of the company providing the service. However, the perceived service quality determines the success criterion in the researches. In determining the perceived service quality, certain indicators obtained from the studies carried out in this field are used. One of the most frequently used models in the literature for measuring service quality is the

service quality measurement model developed by Parasuman, Zeithaml and Bery, known as SERVQUAL. The model firm consists of five quality dimensions expressed as physical characteristics or concrete features, accuracy and reliability of the service provided by the service company, interest and Responsiveness in performing the service, instilling confidence in customers and understanding the customer, in other words, empathy (Ardakani et al., 2015).

The measurement difficulties caused by the intangible nature of the service quality according to the quality of the goods necessitate the consideration of sub-factors in determining the service quality. Among these factors; Topics such as reliability, preparations for service delivery, ability, speed, human relations, empathy and touch with customers, concretization of services and interaction can be listed. Service quality; It emerges with the service performance that occurs between the service quality perceived by the customers and their expectations.

When their service needs arise, customers expect the service that the unit they will receive the service will offer them. In the market researches on service quality, it has been seen that companies that attach importance to this issue increase their customer potential by increasing their competitive power and increase their turnover with their current customers. In addition, effective management of service quality in enterprises reduces costs by preventing waste of values such as labor, time and money. In this respect, it should be among the priority issues for companies operating in the service sector to improve their service quality and invest in this field (Wang et al., 2008).

2.8. Dimensions of Service Quality

In order to determine the quality level of services, it is necessary to explain the determining characteristics of the quality of the relevant services. Due to the complex nature of service quality, it is not possible to explain the quality factors that determine service quality in all circumstances, making it difficult to evaluate service quality. In this section, the service quality dimensions explained by Grönroos and Parasuraman, Zeithaml, Berry will be emphasized.

2.8.1. Christian Gronroos Quality Dimensions

Grönroos says that service quality has two dimensions. He expressed these dimensions as technical quality and functional quality and the definitions took place in the literature. While technical quality briefly expresses the results of the service output, functional quality briefly answers the question of how the stages of service delivery are. Because the service received is produced as a result of interaction with customers (Tahir et al., 2007). It is stated that the service quality perceived by the customers and the objective quality of the services are different from each other and the objective quality is insufficient when compared to the service quality perceived by the customers. In order to determine the perception of service quality, the relationship between technical quality and functional quality should be well analyzed. This relationship determines the image of the company. Company image is formed as a result of technical and functional service quality performance. With this result, customers evaluate how they perceive the company (Grönroos, 2000).

Grönroos mentions that company image has a significant impact on service quality. This effect is not only limited to the expected service quality (technical and functional quality), but also has significant effects on the service quality perceived by the customers. If the image of the company in the customers is good, the customers are satisfied with the service and give advice to the people around them (Wang et al., 2008).

2.8.2. Parasuraman, Zeithaml and Berry Quality Dimensions

Parasuraman, Zeithaml, and Berry have done the most important work in the widely accepted literature describing the dimensions of service quality. They created dimensions for the factors affecting a service, regardless of the type of service. They gathered these dimensions in ten main categories and gave them names that make up the service quality criteria (Parasuraman, Zeithaml, & Berry, 1985).

The service quality dimensions opened by Parasuraman, Zeithaml and Berry are defined as follows; Reliability, Responsiveness, Ability, Availability, Courtesy, Communication, Credibility, Assurance, Empathy, Physical Traits.

Reliability

It includes trust, honesty and prioritizing the interests of the customer in service. Customer satisfaction will increase if the service provider provides the right service at the right time and keeps its promises. Accuracy in invoices, keeping complete records, presenting the service at the specified time, at the specified place and in the specified manner, are within the scope of reliability.

Responsiveness

Business means the willingness and readiness of employees to provide services. It also includes the timely delivery of service. For example, mailing any document can be explained as providing simultaneous feedback and fast service to the customer.

Ability

It means the knowledge and skills necessary to provide the service. This dimension includes the competencies and training of service workers. The service provider should reassure customers that he or she is knowledgeable in areas related to service details.

Accessibility

It means being approachable and communicating easily. For example, if we think for a call center, customers are not kept on the phone, the waiting time is short in order to receive service, or the working hours of a business are convenient, and the location features are at a point where customers can easily reach.

Courtesy

It is the polite, respectful and friendly approach of the personnel who interact with the customer. At the same time, this criterion includes that the external appearance of the employees is clean, tidy and stylish.

Communication

It means that service providers communicate with customers in a language they can understand. For example, a more advanced language is used in communication with a customer with a high level of education, while a simpler language is used in

communication with a customer with a low level of education to ensure mutual interaction.

credibility

This criterion includes the honesty, truthfulness, consistency and credibility of the service provider. It tells employees to genuinely care about the customers they serve. The credibility dimension refers to the reputation of the business and contributes to its image in the eyes of the customer.

Assurance

It means that the services are free from dangers, doubts and risk. In addition, the trust dimension, which includes the privacy of customer information, indicates the subject of protection in physical and monetary matters.

Empathy

It tells about making an effort to meet the needs of the customer. It also includes understanding specific customer needs, dealing personally and getting to know loyal customers better.

Physical Properties

It includes the physical dimensions of services. These features are; It refers to the appearance of the operating personnel, the tools used in service delivery, the way the service is provided and the environment in which the service is provided.

Parasurman et al. In their later experimental studies, they said that only five of the ten factors that were previously explained regarding service quality were highly correlated. The five service quality dimensions described are as follows; (Zeithaml, Parasuraman and Berry, 1985).

1- Tangible Values: It includes all physical facilities, equipment, and communication tools.

2- Reliability: The ability of the service to deliver the promised time accurately and completely.

3- Responsiveness: Willingness to help customers, fast and timely delivery of expected services.

4- Assurance: The level of knowledge, courtesy and confidence of the service personnel.

5- Empathy: Showing personal attention to customers, meeting their wishes and needs with personal sensitivity.

2.9. Service Quality Measurement Models

Service quality measurement is the first step in improving and renewing service quality. Services can be evaluated and measured in many ways. If a service business reaches the right data on the quality assessments of the services it offers, it can take effective steps by making improvements about what it needs to do later (Wang et al., 2008).

The concept of service quality is a concept that expresses the generally perceived service quality in service businesses. In order to make the subject more understandable, it is necessary to examine the quality functions in services. Quality functions that determine service quality have been evaluated by researchers and different approaches have been developed (Lee & Yang, 2013).

Although there is no definitive and generally accepted model for service quality measurement in the literature, many different models and methods have been developed as a result of studies. The most widely used and known ones in this field are SERVQUAL and SERVPERF models. The SERVQUAL model is a model developed to measure the service quality perceived by the customer and uses publications. The SERVPERF model, on the other hand, is the model that measures service quality performance and is less used in the literature than Servqual. Research on models says that scales should be tested by applying them to different areas of the service industry. Researchers stated that it would be more appropriate to change the criteria according to the service sector in which the models will be applied (Lee & Yang, 2013).

3. RESEARCH METHODOLOGY

3.1. Research Problem

In today's market conditions where competition is important, the most important issue that will differentiate service businesses from their competitors emerges as a result of their studies on service quality. Thus, businesses can gain an advantage in competition.

In real estate marketing, corporate firms try to market their own companies, actually offering a service quality. In order for the company to market itself, it is important to make a difference and meet the needs of the customer, to instill trust in the customers, and consequently to convince the customer. Real estate companies that know the intricacies of this sector, which has become stronger by uniting in the real estate sector, who follow the application path, maintain the current quality and create trust without ignoring customer satisfaction, will be successful.

Nowadays, with the new legal regulations brought to the sector, it is thought that the real estate profession will not be perceived as a job that can be done by everyone without knowledge and skills. One of the important issues in this regard is that although the sector has a high development potential, it still has not reached the desired point. The reason for this is that people who are going to real estate marketing do not want to fully see the problems they may encounter by looking at the profession from a narrow window. These people, without any training on the real estate profession, and their unilateral decisions constitute the biggest obstacle in the development of the sector.

The subject of this study is to evaluate the brokerage services offered in the related field in parallel with the developments in the real estate sector and to determine the quality factors for the services they provide. It is thought that the study will contribute to the evaluation of the service quality of the companies providing brokerage services in the real estate sector before the customers and the results obtained by applying them to the procedures of the business management service

quality. After the recession in today's real estate sector, where the supply and demand balances are changing, the markets expect dynamism for the future periods. It is thought that equipping the enterprises providing intermediary services with suitable conditions in the sector where competition is intense will result in the development of service quality in the sector and an increase in customer satisfaction.

The factor affecting customer satisfaction is through the good presentation and correct perception of service quality. Parasuraman Zeithaml and Berry (1988) stated in their studies on service quality that reliability dimension is the main point of service quality in theory.

3.2. Purpose and Importance of the Research

The aim of our research is to determine the expectations and perception levels of the customers of the company for the services offered by a brand that provides corporate brokerage services in the real estate sector through the SERVQUAL model, and to determine the importance given to the predicted quality dimensions by calculating the service quality scores. With the data obtained, it is to make suggestions according to the results by determining which size or dimensions should be prioritized and improvement should be made in order to increase the quality level for the real estate business. In addition, this study is an exploratory study because it is the first application in our country for real estate brokerage businesses with the SERVQUAL scale and its limitations.

It is necessary to measure the quality levels of the services provided in order to determine that the services provided by the real estate brokerage services are realized at the targeted level. It should be determined to what extent customers are satisfied with the services provided, and in which areas of these data received from customers will be improved.

3.3. Scope and Limitations of the Study

This study tackles the quality of real estate is usually the quality of brokerage services in the private sector as a corporate brand to offer real estate brokerage services operating in our country from 2000 until today in Libya.

Related companies throughout Libya with over 200 offices in 180 near modern structure offers professional real estate marketing and consulting services. In addition, it is one of the brands with the most developed dealership system in the world and stands out as one of the companies that sell the most real estate in the world.

The study was carried out with the branches of the companies serving the Tripoli region. One of the main factors is that the Tripoli region is one of the business and financial centers of Libya, the region where the real estate market is active and people with different socioeconomic status and culture live together. In addition, the fact that corporate real estate chains serving in the real estate sector are concentrated in the Tripoli region is another factor.

The limits of our research; SERVQUAL consists of determining the expected and perceived service quality assessments of customers who receive service from the company's branches in Tripoli, and the differences in terms of dimensions and demographic features.

3.4. Research Methodology

In this section, information about the research model and variables, population and sample, data collection methods, research hypotheses and data analysis methods are included.

3.4.1. Research Model

In order to determine the variables in the research, first of all, the studies in the literature on service quality were examined and the research model was developed according to the findings obtained. Developed by Parasuraman, Zeithaml and Berry (1988) as the dependent variable, 6 variables related to the demographic characteristics of the customers and the type of service received (Gender, Age,

Marital Status, Monthly Income Level, Educational Status, Occupation) were taken as the subject of the real estate agency operating in the real estate sector.

Parasurman et al. stated that there are five dimensions that affect service quality in service businesses. They said that the relevant dimensions consist of the differences between the service expectations of the customers and the actual service performance. Parasurman et al. They used the term “Gap” for these differences in service quality (Parasuraman, Zeithaml, & Berry, 1988).

In the service quality model, it has been observed that the quality perceptions of the customers are determined by the gaps in the marketing field. The expected service, which is the most important factor of the perceived service model, is based on the communication activities of marketing. Word of mouth communication is of great importance as personal needs, past experiences as well as managerial activities shape them.

The differences between the customer's expectations and the activities of the business management are revealed by the customer's service quality evaluation. Gaps between management's perceptions, customer expectations, and the quality of service the firm provides affect the customer's perspective. The gaps between the factors that determine the service quality and the actual service received affect the customer's attitude. The gaps between the actual service received and external communication also determine the customer's attitude towards service quality. The quality perceived by the customer from the service is a function that determines the gaps in the expected and perceived service and directs these gaps (Parasuraman, Zeithaml, & Berry, 1988).

In the study, the SERVQUAL service quality model of Parasuraman, Zeithaml and Berry (1988) was used to determine the service quality performance of the corporate real estate agency operating in Libya. The Servqual Model consists of five dimensions, namely Concrete Features, Reliability, Responsiveness, Assurance, and Empathy. There are 22 variables to define service quality under five dimensions (Parasuraman, Zeithaml, & Berry, 1988).

According to the model; The expectations of the customers before receiving the service and the perceived service quality after receiving the service were briefly

compared with the actual service performance. As a result of the comparison; The change of company service performance according to demographic characteristics was examined.

3.4.2. Research Variables

In this study, the perceived service quality SERVQUAL questionnaire consisting of 22 questions prepared by Parasuraman et al. was used. The fact that the Servqual model is the most used scale in the service sector is due to the fact that the scale is a useful model that can easily adapt to many service areas. Variables are used to determine both consumer expectations and consumer perceptions. The 22 variables in the Servqual model are adapted to the service center of the real estate office that is the subject of our research.

In the first part of the questionnaire, 22 questions in Table 3.1 were asked about the expectations of customers who receive service from real estate offices regarding service quality. The variables in the second group in Table 3.2 are related to the evaluations of the customers regarding the perceived service quality. Using a 5-point Likert scale for each statement, they were asked to answer the questionnaire by evaluating between 1 and 5 points (“1-Strongly Disagree, 5-Strongly Agree”).

Variables related to demographic characteristics of customers are expressed as Gender, Age, Marital Status, Monthly Income Level, Educational Status and Occupational Group.

Demographic questions were included in the last part of the questionnaire. Demographic questions Gender, Marital status, Education level and Occupational group questions were prepared on a nominal scale, while questions about age and monthly income were prepared on an intermittent scale.

In addition, an additional question was asked in order to understand for what purpose the customers received services from the real estate office. At this stage, a question has been prepared in order to understand which of the services the customers receive from the real estate office, such as buying or selling real estate, renting or leasing their own real estate.

Table 3.1. Expected Service Quality Variables

1.	The real estate office should have modern equipment.
2.	The real estate office should be visually appealing.
3.	Real estate office workers must be clean and neat-looking.
4.	The materials they use in real estate office service delivery should be visually appealing.
5.	Real estate office employees are expected to fulfill their promises on time.
6.	When customers have any problems, office workers should deal with customers sincerely to solve this problem.
7.	Real estate office employees are expected to perform the service they provide correctly the first time.
8.	Real estate office employees must perform their services at the promised time.
9.	The real estate office should keep the records related to its services regularly and without errors.
10.	Real estate office workers must tell clients exactly how the services will be delivered.
11.	Real estate office employees should provide quick service to customers.
12.	Real estate office workers should always be willing to help customers.
13.	Real estate office employees should never be too busy to respond to customers' requests.
14.	Behaviors of real estate office employees should create a sense of trust in customers.
15.	Customers should feel safe in their relationship with the Real Estate office.
16.	Real estate office employees should always be respectful to their customers.
17.	Real estate office employees should have the knowledge to answer customers' problems.
18.	The real estate office should pay individual attention to its customers.
19.	The real estate office should have convenient working hours for its clients.
20.	Real estate office employees are expected to show personal attention to their clients.
21.	Real estate office employees must do their best for their clients.
22.	Real estate office employees are expected to understand the specific needs of clients.

Table 3.2. Perceived Service Quality Variables

1.	The real estate office that I am a client of has modern equipment.
2.	The real estate office I am a client of is visually appealing.
3.	The real estate office workers that I am a client of are clean and neat-looking.
4.	The real estate office that I am a client of is attractive.
5.	He fulfills the promises of the real estate office employees, of which I am a customer, on time.
6.	When I have a problem, office workers are sincerely interested in solving it.
7.	The real estate office employees, of which I am a customer, perform the service they provide correctly the first time.
8.	Real estate office employees, of which I am a customer, perform their services when they promise.
9.	They keep the records of the real estate office services that I am a customer of, regularly and without errors.
10.	The real estate office workers that I am a client of tell clients exactly how services are to be delivered.
11.	Real estate office employees, of which I am a customer, provide fast service to customers.
12.	The real estate office workers that I am a client of are always willing to help clients.
13.	The real estate office workers that I am a client of are never too busy to respond to clients' requests.
14.	The behavior of the real estate office employees, of which I am a customer, arouses a sense of trust in the customers.
15.	Customers feel safe in their relationship with the Real Estate office.
16.	Real estate office employees, of which I am a customer, are always respectful to their customers.
17.	The real estate office employees that I am a customer of have the knowledge to answer the problems of the customers.
18.	The real estate office, of which I am a customer, pays individual attention to their customers.
19.	The real estate office that I am a customer of has convenient working hours for its customers.
20.	The real estate office employees that I am a customer of, show personal attention to their customers.
21.	The real estate office employees that I am a client of do their best for their clients.
22.	The real estate agents that I am a client of understand the specific needs of clients.

3.4.3. Population and Sample

The main mass is expressed as the whole of the units that make up the sample in line with the objectives set in the research projects. An example is the subgroup selected from the main mass with a certain method and best representing the main mass.

In cases where resources are limited and/or the sampling frame cannot be determined, non-random sampling method can be used. In non-random sampling, sampling error cannot be calculated statistically.

In the study, convenience sampling method was chosen by acting with non-random sampling methods due to sectoral difficulties, budget and time constraints. Convenience sampling method includes including the accessible ones of the individuals to be selected from the main mass.

In the research, interviews were conducted with 250 customers, who received service from branches of the companies serving in Libya in 2021, with different demographic characteristics and selected by convenience sampling method. 8 questionnaires containing incorrect and incomplete information were excluded from the scope and 242 questionnaire forms were evaluated.

In general, the homogeneity of the population ensures that the sample volume is kept small. Conversely, the more heterogeneous the population, the larger the sample volume may be needed to draw an accurate conclusion from the sample volume.

3.4.4. Research Method and Data Collection Tools

In the research, data collection method was applied to reach customers who receive service from real estate offices. The surveys were conducted online via forums.

3.4.5. Research Hypotheses

H1: The services offered by the business meet customer expectations with all service dimensions.

H2: The service quality gap value differs according to the gender of the customers.

H3: The service quality gap value differs according to the marital status of the customers.

H4: The service quality gap value differs according to the education level of the customers.

H5: The service quality gap value differs according to the age group of the customers.

H6: The service quality gap value differs according to the profession of the customers.

H7: The service quality gap value differs according to the monthly income of the customers.

H8: The service quality gap value differs according to the service received by the customers.

3.5. Calculation of Servqual Scores Based on Dimensions

According to the Servqual scale; The service quality evaluation is based on the calculation of the difference between the ratings given by the customers to the expressions of perceived service quality and expected service quality. For all the participants, the Servqual Score in the 5 dimensions previously stated is calculated as follows (Parasuraman, Zeltham, & Berry, 1988).

Servqual Score (SS) = Perceived Service Quality Score (P) – Expected Service Quality Score (E)

Service quality measurement results in three ways:

- Expected Quality > Perceived Quality is Low Quality
- Expected Quality < Perceived Quality is High Quality
- Expected Quality = Perceived Quality is Correct Quality

For each customer, the average Servqual score for all dimensions is calculated and divided by the number of expressions of the relevant dimension (k is the number of dimensions, n is the number of customers).

$$SS = \frac{1}{K} \sum_{i=1}^n (Pi - Ei) \quad (3.1)$$

The scores found in the first step for all customers are summed up and divided by the number of customers to calculate the Average Servqual Score (ASS).

$$\text{Average Servqual Score (ASS)} = SS/n \quad (3.2)$$

The Unweighted Servqual Score (USS) is calculated by summing the scores calculated for each dimension and dividing by the number of dimensions.

$$USS = \frac{1}{K} \sum ASS \quad (3.3)$$

The formulas for calculating Servqual scores on the basis of dimensions of service quality are given below. As a result of factor analysis, the following calculations were made for the scale consisting of 18 questions and 5 dimensions.

SS_1 = Concrete features dimension SERVQUAL score.

SS_2 = Reliability dimension SERVQUAL score.

SS_3 = Responsiveness dimension SERVQUAL score

SS_4 = Assurance dimension SERVQUAL score.

SS_5 = Empathy dimension SERVQUAL score.

Formulas;

$$SS_1 = [(P1 - E1) + (P2 - E2) + (P3 - E3) + (P4 - E4)] / 4 \quad (3.4)$$

$$\text{Average Servqual Score (ASS)}_1 = SS_1/n \quad (3.5)$$

$$SS_2 = (P6 - E6) + (P7 - E7) + (P8 - E8) + (P9 - E9) / 4 \quad (3.6)$$

$$\text{Average Servqual Score (ASS)}_2 = SS_2/n \quad (3.7)$$

$$SS_3 = [(P10 - E10) + (P11 - E11) + (P12 - E12) + (P13 - E13)] / 4 \quad (3.8)$$

$$\text{Average Servqual Score (ASS)}_3 = SS_3/n \quad (3.9)$$

$$SS_4 = [(P14 - E14) + (P15 - E15) + (P16 - E16)] / 3 \quad (3.10)$$

$$\text{Average Servqual Score (ASS)}_4 = SS_4/n \quad (3.11)$$

$$SS_5 = [(P18 - E18) + (P20 - E20) + (P21 - E21)] / 3 \quad (3.12)$$

$$\text{Average Servqual Score (ASS)}_5 = SS_5/n \quad (3.13)$$

$$ASS = (USS_1 + USS_2 + USS_3 + USS_4 + USS_5) / 5 \quad (3.14)$$

If the expected service quality scores are higher than the perceived service quality score, the service quality is low. If the expected service quality score is lower than the perceived service quality score, the quality is high. A satisfactory level of quality or truth is achieved if the expected service is equal to the perceived service.

Table 3.3. Group averages Perception, Expectation, Weight and Servqual Scores

Dimensions	PERCEPTION						EXPECTATION					SS
	N	Min	Max	Ort.	Std. Deviation	%	Min	Max	Ort.	Std. Deviation	%	
Concrete Features	242	3.831	4.727	4.279	0.627	18.93%	4.244	4.777	4.511	0.518	19.03%	-0.290
Reliability	242	4.292	4.518	4.405	0.577	20.23%	4.512	4.846	4.679	0.326	19.93%	-0.266
Responsiveness	242	3.965	4.512	4.239	0.509	19.63%	4.732	4.759	4.746	0.344	20.13%	-0.426
Assurance	242	4.280	4.688	4.484	0.529	20.33%	4.729	4.804	4.767	0.312	20.23%	-0.293
Empathy	242	4.200	4.453	4.327	0.479	20.03%	4.682	4.813	4.748	0.317	20.03%	-0.327

3.6. Analysis of Data

In the study, the data obtained from 242 people who participated in the survey were evaluated and analyzed in the SPSS 21 package program. In the Analysis and Evaluation phase;

- Factor analysis was performed on the survey data and reliability analysis was performed for each dimension.
- The demographic data of the survey participants were evaluated by frequency analysis.

- Expectation and perception average scores were calculated for each statement in the scale.
- Expectation and perception averages were calculated for each dimension obtained by factor analysis.
- Servqual scores consisting of differences and Equal Weighted Servqual score were calculated.
- Analyzes were applied and hypotheses were tested to determine the significance of the results and the effects of demographic characteristics on the results.

3.6.1. Evaluation of Demographic Characteristics of Survey Participants

The data obtained according to gender, marital status, education level, age, occupation, average monthly income and the type of service received belonging to 242 survey data evaluated within the scope of the research are shown in the form of frequency and percentage values with the help of the tables below.

The first demographic variable included in the study is gender. Of the participants, 94 (38.84%) were female and 148 (61.16%) were male. The frequency distributions of the gender of the participants are shown in Table 3.3.

Table 3.4. Distribution of Survey Participants by Gender

		Frequency	%
Gender	Female	94	38.84
	Male	148	61.16
	Total	242	100

The second demographic variable included in the questionnaire is marital status. Of the participants, 183 (75.62%) were married and 59 (24.38%) were single. The frequency distributions of the participants' marital status are shown in Table 3.4.

Table 3.5. Distribution of Survey Participants by Marital Status

		Frequency	%
Marital status	Married	183	75.62
	Single	59	24.38
	Total	242	100

The third demographic variable included in the study is education status. According to their education level, the majority of the participants are university and high school graduates. It is seen that 114 (47.11%) of the participants are university (associate-undergraduate) graduates and 94 (38.84%) are high school graduates. The frequency distributions showing the educational status of the participants are shown in Table 3.5.

Table 3.6. Distribution of Survey Participants by Educational Status

		Frequency	%
Education Status	Not Literate	0	0
	Primary school	6	2.48
	Middle School	10	4.13
	High school	94	38.84
	University	114	47.11
	MSc	11	4.55
	PhD	7	2.89
	Total	242	100

The fourth demographic variable in the study is age. Of the participants, 78 (32.23%) were between the ages of 35-44, 59 (24.38%) were between the ages of 45-54, 53 (21.90%) were between the ages of 25-34, 43 (17.77% are between 55-64 years old, 5 (2.07%) are between 18-24 years old, 4 (1.65%) are 64 years old and over. The frequency distributions showing the age groups of the participants are shown in Table 3.6.

Table 3.7. Distribution of Participants by Age Group

		Frequency	%
Age	18-24	5	2.07
	25-34	53	21.90
	35-44	78	32.23
	45-54	59	24.38
	55-64	43	17.77
	64+	4	1.65
	Total	242	100,0

The fifth demographic variable included in the study is occupation. Looking at the occupational distribution of the participants, 113 (46.69%) are private sector

employees, 46 (19.01%) are self-employed, 39 (16.12%) are retired, 37 (15.29%) consists of public employees. This order is followed by other occupational groups. The frequency distributions showing the occupational status of the participants are shown in Table 3.7.

Table 3.8. Distribution of Participants by Occupational Status

		Frequency	%
Profession	Student	3	1.24
	Self-employment	46	19.01
	Public Employee	37	15.29
	Private sector	113	46.69
	Retired	39	16.12
	Total	242	100

The sixth variable in the research is monthly income. When the income status of the participants is examined, the highest rank is composed of people with an income of 40.08%, between 3501-4500 LYD. When we examine the general situation, 68.6% of the participants in the research are people with an income of more than 3501 LYD. The frequency distributions showing the income status of the participants are shown in Table 3.8.

Table 3.9. Distribution of Participants by Monthly Income

		Frequency	%
Average Monthly Income	0-500 LYD	2	0.83
	501-1500 LYD	7	2.89
	1501-2500 LYD	6	2.48
	2501-3500 LYD	61	25.21
	3501-4500 LYD	97	40.08
	4501 LYD and above	69	28.51
	Total	242	100,0

The seventh variable of our research is the type of service received from real estate companies. Considering the distribution of the participants according to the type of service received, 91 people (27.1%) to rent real estate, 89 people (26.5%) to sell their

real estate, 79 people (23.5%) to buy real estate, 71 people (21%, 1) It is seen that the real estate is rented out and the remaining persons receive services for other matters. The frequency distributions of the participants according to the services they receive are shown in Table 3.9.

Table 3.10. Distribution of Participants by Service Received

	Frequency	%
I got brokerage service to buy real estate	54	22.31
I got brokerage service to sell real estate	67	27.69
I got brokerage service for the purpose of renting real estate.	69	28.51
I got brokerage service to rent real estate	49	20.25
Business Tracking Urban Transformation-Floor Easement-Mortgage Title Deed and others.	3	1.24
Total	242	100

3.7. Factor Analysis

In order to examine the research problems, first of all, the statistical consistency of the obtained data and the scale and its suitability for factor analysis should be checked. The Barlett Test of Sphericity gives information about the level of relationship between the expressions. If the p value is below 0.05 significance level as a result of the test, it means that there is a sufficient degree of correlation between the variables for factor analysis. The Sampling Adequacy Statistic (KMO) value varies between 0 and 1. The closer this value is to 1, the more consistent the relationship between the variables is. The lowest acceptable limit of KMO sample adequacy is 0.5. Evaluates all of the KMO scale expressions and shows their suitability for factor analysis. The Measures of Sampling Adequacy (MSA) value determines the suitability of each expression in the scale for factor analysis separately. The generally accepted interpretation of the MSA value is the same as the KMO. As the MSA value approaches 1, it shows that the variables are in perfect compatibility with each other.

KMO and Bartlett's tests were conducted to measure the suitability of the statements in the scale for factor analysis. The KMO value was 0.651 and the Bartlett's test p value was 0.00. When MSA values were checked from the Anti-Image Correlation matrix, it was determined that 4 questions remained below 0.5. These questions and values; D5=0.369; D17=0.387; D19=0.411; D22=0.414.

Such cases show that the participants may have interpreted the survey questions of the scale used differently. In these cases, the questions with an MSA value below 0.5 should be eliminated and the factor analysis should be performed again.

When the related questions were removed and the test was repeated, the KMO value was found to be 0.788 and the Bartlett's test p value was found to be 0.000. Values related to test results are given in Table 3.10.

Table 3.11. Sampling Measurement Adequacy (KMO) and Bartlett's Sphericity Test

Service Branch	Frequency	%
Sampling Measurement Value Adequacy Bartlett's Test of Sphericity	(KMO)	0.788
	(Approximately) Ki-Kare	1539.846
	sd	149
	P	0,000

When the questions with an MSA value below 0.05 were removed from the analysis and the test was rerun, it was determined that the values were suitable for factor analysis. A p value of less than 0.05 indicates that there is a sufficient level of relationship between the variables for factor analysis. In Table 3.11, it is seen that the MSA values, which show the compatibility of the values with the factors in the factor analysis outputs, are higher than 0.5.

Table 3.12. Anti-Image Correlation Matrix SPSS Output

	D1	D2	D3	D4	D6	D7	D8	D9	D10	D11	D12	D13	D14	D15	D16	D18	D20	D21
D1	0.774 ^a																	
D2	-0.467	0.770 ^a																
D3	-0.091	-0.062	0.642 ^a															
D4	-0.395	-0.294	0.020	0.817 ^a														
D6	0.012	-0.058	-0.160	-0.005	0.599 ^a													
D7	-0.096	0.005	-0.032	0.064	-0.143	0.537 ^a												
D8	-0.123	0.161	-0.155	0.013	-0.081	0.081	0.602 ^a											
D9	0.091	-0.156	-0.213	-0.044	0.061	-0.191	-0.216	0.689 ^a										

D10	0.016	0.141	0.032	-0.048	-0.050	-0.057	0.153	-0.124	0.530 ^a										
D11	0.029	-0.012	0.067	-0.137	0.058	0.105	-0.203	-0.095	-0.304	0.718 ^a									
D12	0.041	-0.105	0.058	-0.152	0.006	-0.145	-0.133	0.026	-0.102	-0.218	0.746 ^a								
D13	0.017	-0.143	-0.086	0.068	0.079	0.001	0.060	-0.113	-0.082	-0.089	-0.285	0.701 ^a							
D14	-0.143	-0.063	0.003	-0.030	-0.125	-0.065	-0.296	0.012	-0.199	0.054	0.030	0.067	0.685 ^a						
D15	-0.02	0.042	0.056	-0.006	-0.051	0.129	0.269	-0.189	0.113	-0.019	0.045	-0.028	-0.608	0.597 ^a					
D16	-0.013	0.005	-0.023	-0.147	0.042	-0.274	-0.079	-0.037	0.014	-0.114	-0.064	-0.141	-0.082	-0.203	0.823 ^a				
D18	-0.045	-0.080	0.026	-0.039	0.012	0.001	-0.059	0.087	-0.055	-0.118	0.031	-0.006	-0.204	-0.070	-0.122	0.776 ^a			
D20	-0.067	-0.057	-0.023	0.065	0.065	0.074	-0.119	-0.071	0.070	0.008	-0.067	-0.007	0.034	0.006	0.090	-0.384	0.680 ^a		
D21	-0.105	-0.032	-0.031	0.036	-0.097	-0.102	-0.045	0.009	-0.009	0.027	0.019	-0.102	0.155	-0.078	0.083	-0.153	-0.036	0.641 ^a	

a. Measures of Sampling Adequacy

In order to determine the number of factors, the values greater than 1 in the total column of the eigenvalue statistics (Eigenvalue) table show how many factors the study consists of. Table 3.12 shows that there are 5 factors with an eigenvalue greater than 1. As can be understood from the Factor Analysis results, the first factor explains 9.862% of the total variables, the second factor 9.862%, the third factor 8.062%, the fourth factor 7.523% and the fifth factor 6.683%. Five factors explain 52.889% of the variance in total.

Table 3.13. Factor Analysis Results

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Total	Variance (%)	Cumulative (%)	Total	Variance (%)	Cumulative (%)	Total	Variance (%)	Cumulative (%)
1	3.734	20.759	20.759	3.734	20.759	20.759	2.734	13.759	13.759
2	1.990	9.862	30.621	1.990	9.862	30.621	2.490	11.612	25.371
3	1.448	8.062	38.683	1.448	8.062	38.683	2.048	9.812	35.183
4	1.569	7.523	46.206	1.569	7.523	46.206	2.069	9.273	44.456
5	1.200	6.683	52.889	1.200	6.683	52.889	1.600	8.433	52.889
6	0.873	5.424	58.313						
7	0.830	4.898	63.211						
8	0.984	4.270	67.481						
9	0.889	3.745	71.226						
10	0.650	4.807	76.033						
11	0.774	4.284	80.317						
12	0.454	3.716	84.033						
13	0.635	3.511	87.544						
14	0.362	3.204	90.748						
15	0.551	3.046	93.794						
16	0.206	2.337	96.131						
17	0.358	1.973	98.104						
18	0.126	1.896	100.000						

Table 3.13 shows which dimension group the variables constituting the dimensions of the study belong to and the factor weights of the statements (explanatory power of the factor). The purpose of rotation is to obtain meaningful factor groups. This matrix

gives the final result of the factor analysis. By examining the matrix, it is decided that whichever factor group has the highest weight, it is in a relationship with that factor group.

Table 3.14. Rotated Components Matrix

	1	2	3	4	5
D2	0.838	0.099	0.072	0.088	-0.021
D1	0.833	0.221	-0.003	0.063	-0.048
D4	0.770	0.205	0.211	-0.053	-0.007
D3	0.677	0.204	-0.118	-0.166	0.188
D14	0.211	0.837	-0.016	0.087	-0.021
D15	0.084	0.817	-0.079	-0.048	0.017
D16	0.270	0.685	0.342	0.014	0.233
D11	0.050	0.137	0.820	0.038	-0.188
D12	0.199	-0.123	0.770	-0.016	0.037
D10	-0.290	0.122	0.679	0.010	0.093
D13	0.167	-0.066	0.666	0.120	0.089
D9	0.072	0.183	0.033	0.785	0.167
D8	0.099	0.034	0.153	0.708	-0.040
D7	0.158	0.068	0.131	0.684	0.154
D6	0.039	0.235	0.137	0.652	0.234
D20	0.171	0.014	-0.025	0.184	0.788
D18	0.281	0.050	0.092	0.085	0.778
D21	0.176	0.039	-0.020	-0.123	0.602

The 5 dimensions obtained from Table 3.13 and the questions forming the dimensions are as follows.

1. Dimension: D1, D2, D3, D4
2. Dimension: D14, D15, D16
3. Dimension: D10, D11, D12, D13
4. Dimension: D6, D7, D8, D9

5. Dimension: D18, D20, D21

In the Servqual scale, which is used for service quality measurement, the dimensions of the questions expressing the five dimensions are as follows in the literature.

Concrete values: Q1, Q2, Q3, Q4

Reliability: Q5, Q6, Q7, Q8, Q9

Responsiveness: Q10, Q11, Q12, Q13

Assurance: Q14, Q15, Q16, Q17

Empathy: Q18, Q19, Q20, Q21

The following table was obtained by comparing the dimensions obtained from the rotated components matrix according to the Servqual scale (See Table 3.14). In order to test the reliability of the scale for the dimensions obtained in the next step, reliability analysis was performed and the study continued.

Table 3.15. Comparison of Servqual Dimensions and Research Dimensions

Servqual Dimensions	Question groups	Dimensions obtained in the study
Concrete values	D1, D2, D3, D4	1. Dimension
Reliability	D6, D7, D8, D9	4. Dimension
Responsiveness	D10, D11, D12, D13	3. Dimension
Assurance	D14, D15, D16	2. Dimension
Empathy	D18, D20, D21	5. Dimension

3.8. Reliability Analysis

Reliability analysis is a type of analysis used to test the validity of the scale structure in social sciences. After factor analysis, the reliability of each sub-dimension of the scale should be calculated.

Reliability analysis refers to the level of consistent and consistent measurement of research variables of measurement tools. In other words, when the measurements are repeated under the same conditions, if the same or close results are obtained, it can be said that the measurement tools are reliable.

Alpha Method (Cronbach's Alpha Coefficient) was used to test the reliability of the research data. Cronbach's alpha coefficient is the average of the correlation

coefficients obtained by combinations of all possible elements. Cronbach's alpha coefficient takes values between 0 and 1 and shows that reliability increases as the α value approaches 1. Values greater than 0.70 in social sciences are the desired condition for research reliability. However, when the number of questions is low, this limit is considered to be 0.60 and above.

Table 3.16. Concrete Properties Dimension Reliability Analysis Results

Cronbach's Alpha			N	
0.847			4	
	Scale Mean When Item Is Deleted	Scale Variance Corrected When Item Is Deleted	Whole Correlation	Cronbach's Alpha When Item Is Deleted
D1	8.825	1.207	0.749	0.765
D2	8.629	1.398	0.726	0.791
D3	8.509	1.298	0.720	0.801
D4	8.736	1.285	0.698	0.814

Reliability analysis results are given in Table 3.15 for the tangible properties dimension. Cronhach's Alpha value was found to be 0.847. This value shows that the factor is reliable. There are four questions in the Concrete Features dimension. In the last column of the table, it is seen that the values of the other items are less than 0.847.

Table 3.17. Reliability Dimension Reliability Analysis Results

Cronbach's Alpha			N	
0.777			4	
	Scale Mean When Item Is Deleted	Scale Variance Corrected When Item Is Deleted	Whole Correlation	Cronbach's Alpha When Item Is Deleted
D6	17.680	2.182	0.711	0.695
D7	17.641	2.348	0.668	0.713
D8	17.894	2.389	0.522	0.760
D9	18.025	2.207	0.615	0.729

Reliability analysis results are given in Table 3.16 for the reliability dimension. Cronhach's Alpha value was found to be 0.777. This value shows that the relevant factor is reliable. There are four questions in the reliability dimension. In the last column of the table, it is seen that the values of the other items are not greater than 0.777.

Table 3.18. Responsiveness Dimension Reliability Analysis Results

Cronbach's Alpha			N	
0.696			4	
	Scale Mean When Item Is Deleted	Scale Variance Corrected When Item Is Deleted	Whole Correlation	Cronbach's Alpha When Item Is Deleted
D10	14.364	0.697	0.297	0.682
D11	14.340	0.600	0.441	0.577
D12	14.367	0.607	0.446	0.574
D13	14.364	0.613	0.332	0.664

Reliability analysis results are given in Table 3.17 for the responsiveness dimension. Cronhach's Alpha value was found to be 0.696. This value shows that the relevant factor is reliable. There are four questions in the responsiveness dimension. In the last column of the table, it is seen that the values of the other items are not greater than 0.696.

Table 3.19. Assurance Dimension Reliability Analysis Results

Cronbach's Alpha			N	
0.783			4	
	Scale Mean When Item Is Deleted	Scale Variance Corrected When Item Is Deleted	Whole Correlation	Cronbach's Alpha When Item Is Deleted
D14	9.617	0.486	0.631	0.606
D15	9.584	0.467	0.626	0.615
D16	9.543	0.401	0.389	0.712

Reliability analysis results are given in Table 3.18 for the assurance dimension. Cronhach's Alpha value was found to be 0.783. This value shows that the relevant factor is reliable. There are three questions in the assurance dimension. In the last column of the table, it is seen that the values of the other items are not greater than 0.783.

Table 3.20. Empathy Dimension Reliability Analysis Results

Cronbach's Alpha			N	
0.846			4	
	Scale Mean When Item Is Deleted	Scale Variance Corrected When Item Is Deleted	Whole Correlation	Cronbach's Alpha When Item Is Deleted
D18	8.703	0.681	0.716	0.671
D20	8.665	0.788	0.662	0.643
D21	8.918	0.830	0.471	0.770

Reliability analysis results are given in Table 3.19 for the empathy dimension. Cronhach's Alpha value was found to be 0.846. This value shows that the relevant factor is reliable. There are three questions in the empathy dimension. In the last column of the table, it is seen that the values of the other items are not greater than 0.846.

Factor analysis was conducted to determine the sub-dimensions of the service quality scale and to determine how the expressions adapted for the real estate sector were perceived by the customers. In order to test the suitability of the collected data for factor analysis, the KMO sample adequacy test and the Bartlett sphericity test were applied. The data set was determined to be suitable for factor analysis, since the KMO value was above 0.50 and it was significant at 0.05 significance level in the Bartlett Sphericity test.

The questions were analyzed by Principal Components Method and Varimax rotation method. Expressions with a sampling adequacy measure below 0.50, with close factor weights, and with factor weights below 0.50 were excluded from the analysis.

The four statements removed from the analysis; “D5-Real estate office employees are expected to fulfill their promises on time.”, “D17-Real estate office employees should have the knowledge to answer customers' problems”, “D19 Real estate office employees should have convenient working hours for their customers” “D22- Real estate office employees should meet the special needs of their customers. They are expected to understand.” has been determined.

After the expressions removed from the analysis, the factor analysis was performed again, and as a result of the analysis, 5 factors consisting of 18 questions with eigenvalues of 1 and above were obtained. In the reliability analyzes for each factor, it was seen that the reliability level was above 0.70 in all dimensions. The total explained variance was calculated as 52.889%. The factors are respectively; “Concrete Features”, “Assurance”, “Responsiveness”, “Reliability” and “Empathy” were named similarly to the factors in the original scale (See Table 3.20). Cronbach's alpha values were used to calculate the internal consistency of the factors.

As a result of the factor and reliability analyzes applied to the service quality question groups, the variables and service quality dimensions that will be used in the next stages of the research were determined. In the calculation of the new variable values, the averaging method, one of the value calculation methods, was used.

Table 3.21. Service Quality Factor Analysis Result Table

Factor Name	Question No.	Factor Weights	Factor's Explanation (%)	Reliability
CONCRETE FEATURES	D1	0.820	20.759	0.847
	D2	0.825		
	D3	0.664		
	D4	0.757		
ASSURANCE	D14	0.824	9.862	0.777
	D15	0.804		
	D16	0.672		
RESPONSIVENESS	D10	0.666	8.062	0.696
	D11	0.807		
	D12	0.757		
	D13	0.653		
RELIABILITY	D6	0.739	7.523	0.783
	D7	0.771		
	D8	0.795		
	D9	0.872		
EMPATHY	D18	0.765	6.683	0.846
	D20	0.775		

	D21	0.689		
		Total	52.889	
Kaiser Meyer Olkin Scale Validity			0.790	
Bartlett Test of Sphericity Chi-Square			1539.846	
sd			149	
P value			0.000	

3.9. Hypothesis Tests

In this section, the differences between the averages of expectation and perception scores between the general and groups and the effects of demographic variables on SERVQUAL scores were tested.

3.9.1. Comparison of Expectation and Perception Averages of All Service Dimensions (Paired Sample T-Test)

The hypothesis created to determine the difference between the Perceived service quality scores and the Expected service quality scores for all service dimensions was tested with the Independent T-Test at the 95% confidence interval.

Table 3.22. Expectation and Perception Mean Statistics of Dimensions

Dimensions	(Expected-Perceived)	Avg.	No.	Std. Deviation	Std. Deviation Error
Dimension 1	Expected Concrete Features	4.449	242	0.367	0.01612
	Perceived Concrete Features	4.103	242	0.461	0.02122
Dimension 2	Expected Assurance	4.709	242	0.145	0.00400
	Perceived Assurance	4.387	242	0.345	0.01492
Dimension 3	Expected Responsiveness	4.741	242	0.186	0.00622
	Perceived Responsiveness	4.258	242	0.339	0.01460
Dimension 4	Expected Reliability	4.765	242	0.213	0.00770
	Perceived Reliability	4.416	242	0.421	0.01904
Dimension 5	Expected Empathy	4.738	242	0.166	0.00516
	Perceived Empathy	4.355	242	0.361	0.01581

Table 3.23. Expectation and Perception Mean Statistics of Dimensions

Paired Sample T-Test									
Dimensions		Avg.	Std. Deviation	Std. Error	95% Confidence Range		t	sd	P (Two-way)
					Lower Limit	Upper limit			
Dimension 1	Expected Concrete Features Perceived Concrete Features	0.33738	0.48492	0.01832	0.28442	0.39034	11.991	242	.000
Dimension 2	Expected Reliability Perceived Reliability	0.31357	0.39590	0.01347	0.27016	0.35698	13.740	242	.000
Dimension 3	Expected Responsiveness Perceived Responsiveness	0.47354	0.38260	0.01274	0.43156	0.51552	21.732	242	.000
Dimension 4	Expected Assurance Perceived Assurance	0.34061	0.47710	0.01790	0.28849	0.39273	12.319	242	.000
Dimension 5	Expected Empathy Perceived Empathy	0.37434	0.40692	0.01407	0.32975	0.41893	16.033	242	.000

According to the T-Test results in Table 3.22, it was determined that the p values were less than 0.05 at the 95% confidence interval and there was a significant difference between the Perception and Expectation averages in all dimensions ($p=0.000<0.05$). When the descriptive statistics related to the dimensions in Table 3.21 are examined, it is concluded that the perception scores of the company customers regarding the service quality are lower than the expectation scores and the quality of the service provided is insufficient in all service dimensions. When all dimensions are examined, the first hypothesis is rejected.

H1: The services offered by the business meet customer expectations in all its dimensions. (H1=Rejected)

3.9.2. Comparison of Servqual Scores by Gender (Independent T-Test)

The hypothesis created to determine the difference in the service quality gap values according to the gender of the customers was tested with the Independent T-Test at the 95% confidence interval.

Table 3.24. T-Test Descriptive Statistics by Gender for All Quality Dimensions

Gender		Frequency	Average	Std. Deviation	Std. Error
Concrete Features	Female	94	-0.372	0.421	0.031
	Male	148	-0.236	0.452	0.029
Reliability	Female	94	-0.372	0.353	0.026
	Male	148	-0.282	0.324	0.020
Responsiveness	Female	94	-0.430	0.361	0.027
	Male	148	-0.432	0.324	0.020
Assurance	Female	94	-0.309	0.327	0.024
	Male	148	-0.331	0.419	0.026
Empathy	Female	94	-0.297	0.272	0.019
	Male	148	-0.355	0.315	0.019

Table 3.25. T-Test Results by Gender for All Dimensions

		Equality of Means T-Test									
Levene Equality of Variance Test		F	P	t	sd	P (two-way)	Avg. Difference	Std. Error Difference	95% Confidence Range		
										Low	High
Concrete Features	Assumption of Equal Variances	0.298	.582	-2.450	334	0.088	-.129	0.05028	-0.235	-0.0225	
	Assumption of Unequal Variances			-2.471	320.837	0.087	-.129	0.05014	-0.234	-0.0234	
Reliability	Assumption of Equal Variances	0.065	.810	-2.048	334	0.042	-.083	0.03938	-0.167	-0.0059	
	Assumption of Unequal Variances			-2.028	299.847	0.044	-.083	0.03979	-0.168	-0.0049	
Responsiveness	Assumption of Equal Variances	2.715	.126	0.032	334	0.892	.00181	0.03982	-0.075	0.0942	
	Assumption of Unequal Variances			0.032	296.363	0.892	.00181	0.04035	-0.077	0.0952	

Assurance	Assumption of Equal Variances	10.913	.001	0.386	334	0.568	.02205	0.04429	-0.064	0.1232
	Assumption of Unequal Variances			0.399	333.252	0.559	.02205	0.04298	-0.061	0.1206
Empathy	Assumption of Equal Variances	2.632	.109	1.451	334	.119	.05743	0.03498	-0.009	0.1413
	Assumption of Unequal Variances			1.476	327.537	.114	.05743	0.03436	-0.008	0.1401

As can be seen in Table 3.24, the p values for the Concrete Properties and Reliability dimensions were less than 0.05 as a result of the Levene test, and the p values for the Concrete Properties and Reliability dimensions were less than 0.05, as can be seen in Table 3.24, as a result of the Levene test. According to the test results, it was determined that while the Servqual scores of Women and Men were different in Concrete Features and Reliability Dimension, there was no difference between the averages in other dimensions. However, this was not the case in all dimensions. Considering all dimensions, the second hypothesis is rejected.

H2: Service quality gap values differ according to the gender of the customers. (H2: Rejected)

When the descriptive statistics in Table 3.23 are examined, it is seen that the perceived and expected service quality difference in the Concrete Features and Reliability dimensions, where the difference occurs, is higher in women than in men. We can say that the expectations of women in the relevant dimensions are not met relatively more than men.

3.9.3. Comparison of Servqual Scores by Marital Status (Independent T-Test)

The hypothesis created to determine the difference between the service quality gap values according to the marital status of the customers was tested with the Independent T Test at the 95% confidence interval.

Table 3.26. T-Test Descriptive Statistics by Marriage for All Quality Dimensions

Marital status		Frequency	Average	Std. Deviation	Std. Error
Concrete	Married	183	- 0.288	0.43070	0.02738

Features	Single	59	- 0.466	0.49156	0.04693
Reliability	Married	183	- 0.300	0.31868	0.01994
	Single	59	- 0.521	0.38212	0.03645
Responsiveness	Married	183	- 0.468	0.35446	0.02232
	Single	59	- 0.511	0.35691	0.03403
Assurance	Married	183	- 0.352	0.40426	0.02562
	Single	59	- 0.413	0.37701	0.03596
Empathy	Married	183	- 0.380	0.32282	0.02022
	Single	59	- 0.385	0.29140	0.02776

Table 3.27. T-Test Results by Marital Status for All Dimensions

Equality of Means T-Test									
Levene Equality of Variance Test		F	P	t	P (two-way)	Ort. Fark	Std. Error Difference	95% Confidence Range	
								Low	High
Concrete Features	Assumption of Equal Variances	4.732	.031	3.044	.0019	0.103	0.05318	0.06177	0.27773
	Assumption of Unequal Variances			2.913	.0028	0.103	0.05567	0.05654	0.28296
Reliability	Assumption of Equal Variances	5.213	.029	4.957	.000	0.147	0.04026	0.12339	0.30333
	Assumption of Unequal Variances			4.676	.000	0.147	0.04286	0.11801	0.30871
Responsive ness	Assumption of Equal Variances	.903	.356	0.94840	.351	0.03981	0.04199	-0.0425	0.12949
	Assumption of Unequal Variances			0.94640	.339	0.03981	0.04209	-0.0429	0.12988
Assurance	Assumption of Equal Variances	1.425	.228	1.127	.229	0.05682	0.04670	-0.0347	0.15576
	Assumption of Unequal Variances			1.155	.217	0.05682	0.04558	-0.0327	0.15373
Empathy	Assumption of Equal Variances	4.163	.049	.162	.885	.00658	0.03707	-0.0697	0.07866
	Assumption of Unequal Variances			.169	.869	.00658	0.03578	-0.0673	0.07625

As can be seen in Table 3.26, as a result of Levene's test, the Concrete Properties and Reliability dimension p values were less than 0.05, and when the P values for the

Responsiveness, Assurance and Empathy dimension were examined It is observed that it is greater than 0.05.

As a result of the test, it was determined that Servqual scores according to the marital status variable were different in Concrete Features and Reliability dimensions, while there was no difference between the averages in other dimensions. However, this was not the case in all dimensions. Considering all dimensions, the third hypothesis is rejected.

H3: The service quality gap value differs according to the marital status of the customers. (H3: rejected)

When the descriptive statistics are analyzed in Table 3.25, it is seen that the perceived and expected service quality difference in the Concrete Features and Reliability dimensions, where the difference occurs, is higher in Single customers than in Married. In the relevant dimensions, we can say that the expectations of Single participants are not met relatively more than those of Married.

3.9.4. Comparison of Servqual Scores by Education Level

In order to determine the difference in service quality gap values according to the education level of the customers, firstly, the equality of group variances was tested. For the ANOVA test, the group variances must be homogeneous. Homogeneity test is done with Levene test.

Table 3.28. Homogeneity Values of Variances of Dimensions According to Educational Status

	Levene Statistics	Sd-1	Sd-2	P
Concrete Features	7.06500	6	236	.000
Reliability	7.04900	6	236	.000
Responsiveness	2.32400	6	236	.034
Assurance	7.54700	6	236	.000
Empathy	5.18200	6	236	.000

As can be seen in Table 3.27, as a result of Levene's test, it is seen that the p values are less than 0.05 and the variance between the groups is not equal.

In this case, the prerequisite of one-way ANOVA analysis is not met. Welch and Brown-Forsythe tests can be used as alternatives in cases where such ANOVA analysis is not appropriate. These tests are Robust tests and are used as an alternative to the F test. Between the two tests, the Welch test gives better results and is used more frequently.

Table 3.29. Welch Test Results by Educational Status

		Welch Statistics			
			Sd-1	Sd-2	P
Concrete Features	Welch	11.64100	6	53.65200	.000
Reliability	Welch	16.27500	6	72.55700	.000
Responsiveness	Welch	23.63400	6	57.11700	.000
Assurance	Welch	31.35200	6	57.42600	.000
Empathy	Welch	47.74500	6	58.88700	.000

With the Welch test, the results of the hypothesis were examined as H4 acceptance if $p > 0.05$ and H4 rejection if $p < 0.05$ for all service dimensions. According to the test results shown in Table 3.28, a statistically significant difference was found between the education level groups in all dimensions ($p < 0.05$). Considering all dimensions, the fourth hypothesis is accepted.

H4: Service quality perception differs according to the education level of customers.
(H4=accepted)

In cases where there is a difference between groups, the statistical test used to determine which group the difference originates from is known as the post-hoc test. Intergroup variance value is important in the selection of post-hoc test type. In cases where the variance between groups is not equal, the preferred post-hoc test changes. In this case, the tests used are Games-Howell, Tamhane's T2, Tamhane's T3, Dunnet's C and Dunnet's T3 statistics.

Tamhane T2 values in the post-hoc chart are a measured test. This test is appropriate when the variances are unequal. In cases where group variances are not homogeneous, it gives more appropriate results than Tukey's HSD test. Tamhane T2 and Tamhane T3 statistics are a test conducted only on the basis of "student t" and

stand out with conservative and careful comparisons (Hochberg and Tamhane, 1987).

The multiple comparison test values according to the education level of the customers who receive service from the real estate agency are shown in Table 3.29. In the table, the difference was determined for each dimension ($p < 0.05$), given to the education level groups. Among the scores of the graduation groups in the mean difference column of the full-digit test, the scores marked with “*” and in bold indicate the differences between the groups. Negative differences mean that expectations between education level groups are not met.

Table 3.30. Multiple Comparison Test of Servqual Scores by Education Level on a Dimensional Basis

Dimensions	(I) Education	(J) Education	Average Difference (I-J)	Std. Error	P	95% Confidence Range		
						Low	High	
Concrete Features	University	Primary school	-0.50364*	0.07835	.000	-0.73180	-0.26690	
		Middle School	-0.51364*	0.07926	.000	-0.74200	-0.27660	
		High school	-0.26625*	0.04749	.000	-0.38920	-0.13470	
Reliability	Doctorate	Primary school	-0.33622*	0.04353	.000	-0.45980	-0.20400	
		Middle School	-0.26536*	0.05067	.000	-0.41000	-0.11220	
		High school	-0.23538*	0.03733	.000	-0.33090	-0.13120	
		University	-0.19486*	0.03281	.000	-0.27770	-0.10340	
		MSc	-0.27029*	0.08806	.043	-0.53630	0.00430	
Responsiveness	Lise	Primary school	-0.18879*	0.05560	.011	-0.34770	-0.02120	
	University	Primary school	-0.34701*	0.05645	.000	-0.50790	-0.17750	
		Middle School	-0.22178*	0.05033	.001	-0.35990	-0.07500	
		High school	-0.11522*	0.03742	.011	-0.20830	-0.01360	
	MSc	Primary school	-0.68685*	0.08067	.000	-0.92000	-0.44510	
		Middle School	-0.56162*	0.07631	.000	-0.78140	-0.33330	
		High school	-0.45506*	0.06792	.000	-0.65190	-0.24960	
	Doctorate	MSc	MSc	-0.29684*	0.06864	.001	-0.49530	-0.08970
		Primary school	-0.68860*	0.08127	.000	-0.94020	-0.42840	
		Middle School	-0.56336*	0.07694	.000	-0.80460	-0.31360	
		High school	-0.45681*	0.06862	.000	-0.68390	-0.22110	
	Assurance	Lise	University	-0.29859*	0.06933	.009	-0.52640	-0.06220
Middle School			-0.18179*	0.03443	.000	-0.26820	-0.08680	
Primary school			-0.42191*	0.05972	.000	-0.59090	-0.24430	
Middle School			-0.54096*	0.03978	.000	-0.64250	-0.43080	
MSc		High school	-0.31617*	0.04166	.000	-0.42180	-0.20200	
		Primary school	-0.39564*	0.08519	.000	-0.64310	-0.13960	
Empathy	University	Middle School	-0.51469*	0.07183	.000	-0.72590	-0.29480	
		High school	-0.28990*	0.07297	.003	-0.50340	-0.06780	
		Primary school	-0.17661*	0.02481	.000	-0.23360	-0.11100	
		Primary school	-0.47356*	0.02508	.000	-0.53120	-0.40730	
		Middle School	-0.31318*	0.04828	.000	-0.44710	-0.17070	
		High school	-0.25395*	0.03045	.000	-0.32640	-0.17290	

	Doctorate	Primary school	-0.47302*	0.07802	.001	-0.75160	-0.18590
		Middle School	-0.31264*	0.08940	.030	-0.60200	-0.01460

*p<0.05

In terms of concrete features; It has been determined that there is a difference between the Servqual score of university graduates who receive service from real estate agencies and the scores of primary, secondary and high school graduates (p<0.05). When the Concrete Characteristics dimension is examined in descriptive statistics in Table 3.30, it is seen that the Servqual score of the university graduates is higher than the education level groups in which the difference occurs.

In the reliability dimension, it was determined that there was a difference between the Servqual scores of doctoral graduates and the scores of all other graduation groups (p<0.05). When the reliability dimension is examined in Table 3.30, it is seen that the Servqual score of the PhD graduates is higher than the other graduation groups in which the difference occurs.

In the dimension of Responsiveness, it was determined that there was a difference between the Servqual scores of high school graduates and the scores of primary school graduates, between the scores of university graduates and High School, Secondary and Primary School graduates, between the Servqual scores of PhD and Master's graduates and the scores of all other graduation groups (p<0.05). When the Responsiveness dimension is examined in Table 3.30, it is seen that the graduation degrees with the highest Servqual score differences belong to PhD and Master's graduates. When the scores are listed, it is seen that the scores of the PhD and Master's graduates are very close to each other and the difference decreases as the education level decreases.

In the assurance dimension, it was determined that there was a difference between the Servqual score of Master and University graduates and the scores of High School, Secondary and Primary School graduates, and between the Servqual score of High School graduates and the scores of Secondary School graduates. (p<0.05) When the Assurance dimension is examined in Table 3.30, it is seen that the highest Servqual score differences belong to the graduate degrees and the University graduates.

In empathy dimension, between Servqual scores of PhD graduates and Servqual scores of Secondary and Primary School graduates; It has been determined that there is a difference between the Servqual scores of university graduates and the scores of High School, Secondary and Primary School graduates, and between the Servqual scores of High School graduates and the scores of primary school graduates. When the Empathy dimension is examined in Table 3.30, it is seen that the graduation degrees with the highest Servqual score differences belong to Doctorate and University graduates.

According to the results of the multiple comparison test, when the other graduation groups were evaluated among themselves, no significant difference was found between the Servqual scores ($p>0.05$).

Table 3.31. Descriptive Statistics of All Quality Dimensions by Educational Status

						95% Confidence Range	
Dimensions	Education level	Frequency	Avg.	Std. Error	Std. Deviation	Low	High
Concrete Features	Primary school	6	0.000	0.069	0.292	-0.110	0.196
	Middle School	10	0.053	0.070	0.328	-0.100	0.206
	High school	94	-0.194	0.027	0.292	-0.255	-0.134
	University	114	-0.504	0.043	0.500	-0.596	-0.411
	Master of Science	11	-0.342	0.115	0.562	-0.586	-0.097
	Doctorate	7	-0.412	0.121	0.373	-0.691	-0.132
	total	242	-0.303	0.023	0.451	-0.356	-0.250
Reliability	Primary school	6	-0.214	0.042	0.168	-0.310	-0.118
	Middle School	10	-0.285	0.050	0.227	-0.396	-0.174
	High school	94	-0.315	0.035	0.382	-0.392	-0.238
	University	114	-0.356	0.029	0.344	-0.422	-0.289
	Master of Science	11	-0.280	0.090	0.434	-0.473	-0.087
	Doctorate	7	-0.593	0.020	0.038	-0.648	-0.539
	total	242	-0.329	0.017	0.347	-0.371	-0.287
Responsiveness	Primary school	6	-0.112	0.052	0.213	-0.228	0.005
	Middle School	10	-0.237	0.045	0.200	-0.337	-0.137
	High school	94	-0.344	0.028	0.303	-0.406	-0.281
	University	114	-0.502	0.029	0.343	-0.568	-0.436
	Master of Science	11	-0.842	0.066	0.312	-0.985	-0.698
	Doctorate	7	-0.843	0.066	0.191	-1.000	-0.686
	total	242	-0.439	0.017	0.348	-0.481	-0.397
Assurance	Primary school	6	-0.076	0.052	0.215	-0.193	0.041
	Middle School	10	0.000	0.025	0.101	-0.017	0.103
	High school	94	-0.182	0.028	0.305	-0.245	-0.119
	University	114	-0.541	0.035	0.406	-0.618	-0.464

	Master of Science	11	-0.515	0.071	0.340	-0.669	-0.360
	Doctorate	7	-0.230	0.110	0.335	-0.484	0.024
	total	242	-0.329	0.020	0.389	-0.375	-0.283
Empathy	Primary school	6	-0.005	0.015	0.044	-0.044	0.035
	Middle School	10	-0.165	0.046	0.205	-0.267	-0.063
	High school	94	-0.224	0.023	0.256	-0.279	-0.170
	University	114	-0.521	0.024	0.279	-0.576	-0.466
	Master of Science	11	-0.272	0.078	0.373	-0.441	-0.104
	Doctorate	7	-0.521	0.081	0.237	-0.709	-0.332
	total	242	-0.338	0.015	0.305	-0.375	-0.301

3.9.5. Comparison of Servqual Scores by Age Variable

The equality of group variances was tested with the Levene test to determine the difference in service quality gap values between the age groups of customers.

Table 3.32. Homogeneity Values of Variances of Dimensions According to Age Variable

	Levene Statistics	Sd-1	Sd-2	P
Concrete Features	7.697	6	236	.000
Reliability	4.642	6	236	.000
Responsiveness	2.224	6	236	.041
Assurance	3.660	6	236	.002
Empathy	5.024	6	236	.000

As can be seen in Table 3.31, it is seen that p values are less than 0.05 and the variance between the groups is not equal as a result of Levene's test.

Table 3.33. Welch Test Results by Age Group

		Welch Statistics	Sd-1	Sd-2	P
Concrete Features	Welch	4.84300	6	71.33100	.001
Reliability	Welch	4.97100	6	70.62200	.001
Responsiveness	Welch	4.62700	6	68.14100	.001
Assurance	Welch	10.82300	6	70.18800	.000
Empathy	Welch	15.23300	6	75.09100	.000

With the Welch test, the results of the hypothesis were examined as H5 acceptance if $p > 0.05$ and H5 rejection if $p < 0.05$ for all service quality dimensions. According to the test results shown in Table 3.32, a statistically significant difference was found between the age groups in all dimensions ($p < 0.05$). Considering all dimensions, the fifth hypothesis is accepted.

H5: The service quality gap value differs according to the age group of the customers. (H5=Accept)

The multiple comparison test values according to the age distribution of the customers receiving service from the real estate agency are shown in Table 3.33. Age groups where the difference was determined for each dimension ($p < 0.05$) are given in the table. Among the scores of the age groups in the mean difference column of the Tamhane test, the scores marked with “*” and in bold indicate the differences between the groups. Negative differences mean that expectations between age groups are not met.

Table 3.34. Multiple Comparison Test of Servqual Scores by age group on a Dimensional Basis

Dimensions	(I) Age	(J) Age	Average Difference (I-J)	Std. Error	P	95% Confidence Range	
						Lower Limit	Upper limit
Concrete Features	25-34	18-24	-.17754	0.1560	0.956	-0.793	0.524
		35-44	-.22754*	0.0685	0.039	-0.411	0.042
		45-54	-.15499	0.0661	0.428	-0.332	0.108
		55-64	-.21087	0.0885	0.359	-0.455	0.119
		64+	-.42158*	0.0791	0.000	-0.648	-0.110
	45-54	64+	-.26660	0.0674	0.012	-0.465	0.017
Reliability	25-34	18-24	-.19420	0.0819	0.405	-0.427	0.125
		35-44	-.23643*	0.0627	0.007	-0.404	0.017
		45-54	-.09224	0.0648	0.959	-0.265	0.167
		55-64	-.24420*	0.0635	0.003	-0.414	0.012
		64+	-.35611*	0.0837	0.004	-0.599	-0.027
Responsiveness	25-34	18-24	-.06159	0.1083	0.991	-0.396	0.359
		35-44	-.16993	0.0555	0.103	-0.315	0.061
		45-54	-.23022*	0.0546	0.003	-0.372	-0.002
		55-64	-.26159*	0.0499	0.000	-0.390	-0.047
		64+	-.21636	0.0880	0.400	-0.489	0.142
Assurance	25-34	18-24	-.36836*	0.0880	0.005	-0.623	-0.028
		35-44	-.29891*	0.0620	0.001	-0.464	-0.048
		45-54	-.09352	0.0690	0.969	-0.279	0.178
		55-64	-.43225*	0.0647	0.000	-0.605	-0.173
		64+	-.42987*	0.0892	0.001	-0.694	-0.080

	45-54	18-24	-.27484	0.0823	0.055	-0.515	0.052
		25-34	.09352	0.0690	0.969	-0.092	0.365
		35-44	-.20539*	0.0539	0.007	-0.345	0.021
		55-64	-.33873*	0.0570	0.000	-0.488	-0.103
		64+	-.33634*	0.0836	0.007	-0.588	0.001
Empathy	18-24	64+	-.28571*	0.0661	0.006	-0.477	-0.008
		55-64	-.18710*	0.0499	0.013	-0.316	0.028
	25-34	64+	-.44948*	0.0533	0.000	-0.596	-0.217
		64+	-.35683*	0.0481	0.000	-0.491	-0.137
	45-54	18-24	-.17529	0.0646	0.255	-0.358	0.094
		25-34	-.01153	0.0515	0.991	-0.144	0.207
		35-44	-.10418	0.0462	0.559	-0.221	0.099
		55-64	-.19863*	0.0499	0.002	-0.327	0.016
	64+	-.46101*	0.0533	0.000	-0.607	-0.229	

*p<0.05

According to the Servqual score of the people aged 25-34 who receive service from real estate agencies in terms of tangible properties, between the age groups of 35-44 and 64+; It was determined that there was a difference between the scores of the 45-54 age groups and the 64+ age groups ($p<0.05$). When the descriptive statistics of the age groups in Table 3.34 are examined, it is seen that the scores of the 25-34 and 45-54 age groups are higher than the age groups where the difference occurs.

In the reliability dimension, it was determined that there was a difference between the average Servqual score of the people in the 25-34 age group and the scores of the 35-44, 55-64 and 64+ age groups ($p<0.05$). When the descriptive statistics of age groups in Table 3.34 are examined, it is seen that the score of the 25-34 age group is higher than the age groups where the difference occurs.

In the dimension of responsiveness, it was determined that there was a difference between the Servqual score of the people in the 25-34 age group and the scores of the 45-54 and 55-64 age groups ($p<0.05$). When Table 3.34 is examined, it is seen that the score of the 25-34 age group is higher than the age groups where the difference occurs.

In the assurance dimension, between the Servqual score of people in the 25-34 age group and the scores of the 18-24, 35-44, 46-65 and 64+ age groups; It was determined that there was a difference between the mean score of the 45-54 age group and all age groups aged 36 and above ($p<0.05$). When Table 3.34 is examined, it is seen that the average scores of the 25-34 and 45-54 age groups are higher than the age groups in which the difference occurs.

In empathy dimension, 64+ age group with Servqual score of 18-24 age group; 55-64 years old and 64+ years old with Servqual score of people in the 25-34 age group; People in the 35-44 age group with a Servqual score of 64+; It was determined that there was a difference between the mean Servqual score of the people in the 45-54 age group and the 55-64 and 64+ age groups ($p < 0.05$). When Table 3.34 is examined, it is seen that the average scores of the 25-34 and 45-54 age groups are higher than the other age groups.

According to the results of the multiple comparison test, when the other age groups were evaluated among themselves, no significant difference was found between the mean scores ($p > 0.05$).

Table 3.35. Descriptive Statistics of All Quality Dimensions by Age Groups

Dimensions	Age Range	Frequency	Avg.	Std. Deviation	Std. Error	95% Confidence Interval	
						Lower Limit	Upper limit
Concrete Features	18-24	18	-0.290	0.761	0.164	-0.690	0.110
	25-34	69	-0.468	0.460	0.035	-0.589	-0.347
	35-44	90	-0.240	0.394	0.020	-0.332	-0.149
	45-54	85	-0.313	0.345	0.016	-0.397	-0.229
	55-64	60	-0.257	0.535	0.049	-0.406	-0.108
	64+	14	-0.046	0.189	0.036	-0.180	0.088
	Total	242	-0.303	0.451	0.001	-0.356	-0.250
Reliability	18-24	18	-0.290	0.240	0.041	-0.431	-0.150
	25-34	69	-0.485	0.453	0.034	-0.604	-0.365
	35-44	90	-0.248	0.309	0.011	-0.322	-0.174
	45-54	85	-0.392	0.334	0.015	-0.474	-0.311
	55-64	60	-0.240	0.257	0.013	-0.318	-0.163
	64+	14	-0.128	0.215	0.043	-0.278	0.021
	Total	242	-0.329	0.347	0.019	-0.371	-0.287
Responsiveness	18-24	18	-0.540	0.411	0.081	-0.766	-0.315
	25-34	69	-0.602	0.327	0.019	-0.691	-0.513
	35-44	90	-0.432	0.381	0.019	-0.521	-0.343
	45-54	85	-0.372	0.357	0.017	-0.458	-0.285
	55-64	60	-0.340	0.239	0.010	-0.413	-0.268
	64+	14	-0.386	0.274	0.059	-0.568	-0.203
	Total	242	-0.439	0.348	0.019	-0.481	-0.397
Assurance	18-24	18	-0.179	0.277	0.049	-0.338	-0.020
	25-34	69	-0.548	0.446	0.033	-0.665	-0.430
	35-44	90	-0.249	0.309	0.011	-0.322	-0.175
	45-54	85	-0.454	0.409	0.023	-0.552	-0.356
	55-64	60	-0.115	0.282	0.016	-0.199	-0.031
	64+	14	-0.118	0.245	0.051	-0.284	0.048
	Total	242	-0.329	0.389	0.019	-0.375	-0.283

Empathy	18-24	18	-0.257	0.207	0.033	-0.381	-0.133
	25-34	69	-0.421	0.304	0.016	-0.504	-0.337
	35-44	90	-0.328	0.278	0.008	-0.395	-0.261
	45-54	85	-0.432	0.342	0.016	-0.515	-0.349
	55-64	60	-0.234	0.263	0.014	-0.313	-0.155
	64+	14	0.029	0.123	0.018	-0.067	0.124
	Total	242	-0.338	0.305	0.016	-0.375	-0.301

3.9.6. Comparison of Servqual Scores by Occupation

In order to determine the difference between the service quality gap values according to the occupational status of the customers, the equality of group variances was tested with the Levene test. For occupational group comparisons, "Housewives" and "Other" occupational groups, which have some low levels, were excluded from the analysis. 238 questionnaires were evaluated for analysis.

Table 3.36. Homogeneity Values of Variances of Dimensions for Occupational Status

	Levene Statistics	Sd-1	Sd-2	P
Concrete Features	1.98110	4	238	.079
Reliability	4.24790	4	238	.001
Responsiveness	3.82890	4	238	.003
Assurance	1.48410	4	238	.176
Empathy	1.38780	4	238	.208

When we check the homogeneity values of the variances of the dimensions in Table 3.35, the result of Levene's test, it is seen that the p values in the Reliability and Responsiveness dimensions are less than 0.05 and the variance between the groups is not equal.

The hypothesis developed to determine the difference between the service quality gap values according to the occupational groups of the customers was evaluated by

Welch analysis for the dimensions of Reliability and Responsiveness where the variances are not equal, and with One Way Analysis of Variance (ANOVA) for the Concrete Features, Assurance and Empathy, where the variances are equal, at the 95% confidence interval.

Table 3.37. ANOVA Test Results by Occupational Status

		Total Squares	sd	Mean Squares	F	P
Concrete Features	Between Groups	1.877	4	0.489	1.983	0.093
	In-group	78.411	238	0.251		
	Total	80.374	242			
Assurance	Between Groups	5.050	4	1.291	7.694	0.000
	In-group	52.348	238	0.173		
	Total	57.484	242			
Empathy	Between Groups	1.567	4	0.425	3.478	0.008
	In-group	37.472	238	0.122		
	Total	39.125	242			

Table 3.38. Welch Test Results by Occupational Status

		Welch Statistics	Sd-1	Sd-2	P
Reliability	Welch	9.613	4	59.117	0.000
Responsiveness	Welch	20.499	4	66.389	0.000

With ANOVA and Welch tests, the results of the hypothesis were examined as H6 acceptance if $p > 0.05$ and H6 rejection if $p < 0.05$ for 5 percent margin of error in all service dimensions.

According to the test results in Table 3.36 and Table 3.37, service quality differs according to occupational groups in other dimensions except for the Concrete features dimension. Considering all dimensions, the sixth hypothesis is rejected.

H6: Service quality gap values differ according to the occupational status of the customers (H6=Rejected).

The Tukey HSD and Tamhane test values of multiple comparison tests according to the profession of the customers who receive service from the real estate agency are shown in Table 3.38. The table includes the occupational groups where the difference was determined for each dimension ($p < 0.05$). Among the scores of the occupational groups in the mean difference column of the Tukey HSD and Tamhane tests, the scores with “*” and bold colors show the differences between the groups. Negative differences mean that expectations among occupational groups are not met.

Table 3.39. Multiple Comparison Test of Servqual Scores by Occupational Status on a Dimensional Basis

Dimensions	(I) Job	(J) Job	Average Difference (I-J)	Std. Error	P	Lower Limit	Upper limit
Reliability	Retired	Student	0.374	0.111	0.104	-0.073	0.892
		Self-employment	0.072	0.039	0.737	-0.085	0.299
		Public Employee	0.283*	0.035	0.000	0.136	0.501
		Private sector	0.221*	0.019	0.000	0.121	0.391
Responsiveness	Student	Self-employment	-0.297	0.051	0.011	-0.501	-0.022
		Public Employee	0.057	0.043	0.912	-0.130	0.315
		Private sector	-0.322*	0.038	-0.023	-0.501	-0.073
		Retired	-0.374*	0.042	0.001	-0.560	-0.118
	Public Employee	Student	-0.109	0.043	0.912	-0.297	0.149
		Self-employment	-0.380*	0.040	0.000	-0.541	-0.149
		Private sector	-0.405*	0.025	0.000	-0.521	-0.219
		Retired	-0.457*	0.029	0.000	-0.587	-0.257
Assurance	Student	Self-employment	-0.409*	0.106	0.006	-0.743	-0.005
		Public Employee	-0.157	0.109	0.842	-0.498	0.255
		Private sector	-0.292	0.101	0.199	-0.613	0.099
		Retired	-0.518*	0.109	0.002	-0.859	-0.107
	Public Employee	Student	0.105	0.109	0.842	-0.236	0.517
		Self-employment	-0.279*	0.049	0.006	-0.454	-0.032
		Private sector	-0.162	0.039	0.209	-0.313	0.060
		Retired	-0.388*	0.053	0.000	-0.575	-0.130
	Private sector	Student	0.240	0.101	0.199	-0.080	0.632
		Self-employment	-0.143	0.034	0.268	-0.279	0.064
		Public Employee	0.110	0.039	0.209	-0.041	0.331

		Retired	-0.252*	0.039	0.004	-0.402	-0.032
Empathy	Retired	Student	0.049	0.088	0.939	-0.236	0.405
		Self-employment	0.066	0.037	0.560	-0.078	0.281
		Public Employee	0.201*	0.041	0.006	0.047	0.427
		Private sector	0.132*	0.029	0.010	0.009	0.326

*p<0.05

In the reliability dimension, it was determined that there was a difference between the Servqual score of retired people and the scores of the Public Employees and Private Sector groups (p<0.05). When the descriptive statistics in Table 3.39 are examined, when the Assurance dimension is examined, it is seen that the scores of Public Employees and Private Sector Employees are higher than the occupational groups in which the difference occurs.

In the dimension of Responsiveness, it was determined that there was a difference between the Servqual scores of Students and Public Employees and the scores of Self-employed, Private Sector and Retired groups (p<0.05). When the descriptive statistics in Table 3.39 are examined, it is seen that the scores of the Student and Public Employee groups in the dimension of Responsiveness are higher than the occupational groups in which the difference occurs.

In the assurance dimension, among the Self-employed and Retired groups with the Servqual score of Student and Public Employees; It was determined that there was a difference between the scores of the Private Sector employees and the scores of the retired occupational group (p<0.05). When the descriptive statistics in Table 3.39 are examined, it is seen that the average score of the Student and Public Employee occupational group in the Assurance dimension is higher than the occupational groups in which the difference occurs.

In the empathy dimension, it was determined that there was a difference between the scores of Public Employees and Private Sector occupational groups and the average scores of Retirees (p<0.05). When the descriptive statistics in Table 3.39 are examined, it is seen that the scores of the Public Employee and Private Sector occupational groups in the Empathy dimension are higher than the occupational groups in which the difference occurs.

According to the results of the multiple comparison test, when the other occupational groups were evaluated among themselves, no significant difference was found between the mean scores ($p>0.05$).

Table 3.40. Descriptive Statistics of All Quality Dimensions by Occupation

Dimensions	Profession	Frequency	Avg.	Std. Deviation	Std. Error	95% Confidence Interval	
						Lower Limit	Upper Limit
Concrete Features	Student	3	-0.461	0.441	0.112	-0.779	-0.208
	Self-employment	46	-0.355	0.537	0.047	-0.513	-0.261
	Public Employee	37	-0.460	0.412	0.038	-0.602	-0.383
	Private sector	113	-0.301	0.538	0.028	-0.420	-0.246
	Retired	39	-0.215	0.509	0.051	-0.382	-0.113
	Total	238	-0.329	0.515	0.012	-0.415	-0.307
Reliability	Student	3	-0.566	0.458	0.117	-0.895	-0.301
	Self-employment	46	-0.263	0.476	0.040	-0.407	-0.184
	Public Employee	37	-0.475	0.391	0.036	-0.610	-0.403
	Private sector	113	-0.412	0.380	0.015	-0.505	-0.384
	Retired	39	-0.165	0.259	0.017	-0.264	-0.131
	Total	238	-0.356	0.405	0.005	-0.430	-0.346
Responsiveness	Student	3	-0.689	0.204	0.041	-0.847	-0.594
	Self-employment	46	-0.418	0.451	0.037	-0.555	-0.344
	Public Employee	37	-0.772	0.308	0.024	-0.884	-0.723
	Private sector	113	-0.392	0.382	0.015	-0.485	-0.364
	Retired	39	-0.340	0.298	0.022	-0.449	-0.296
	Total	238	-0.460	0.399	0.005	-0.534	-0.451
Assurance	Student	3	-0.643	0.589	0.157	-1.060	-0.290
	Self-employment	46	-0.260	0.419	0.033	-0.389	-0.194
	Public Employee	37	-0.512	0.372	0.033	-0.642	-0.446
	Private sector	113	-0.377	0.451	0.021	-0.481	-0.336
	Retired	39	-0.151	0.352	0.030	-0.275	-0.091
	Total	238	-0.346	0.439	0.007	-0.424	-0.332
Empathy	Student	3	-0.311	0.366	0.089	-0.578	-0.108

	Self-employment	46	-0.328	0.327	0.022	-0.435	-0.285
	Public Employee	37	-0.463	0.335	0.028	-0.583	-0.407
	Private sector	113	-0.394	0.383	0.015	-0.487	-0.365
	Retired	39	-0.236	0.368	0.032	-0.364	-0.172
	Total	238	-0.363	0.367	0.003	-0.433	-0.357

3.9.7. Comparison of Servqual Scores by Income Status

In order to determine the difference between the service quality gap values according to the income level of the customers, the equality of group variances was tested with the Levene test.

For monthly income comparisons, some low “0-500 LYD” income group was excluded from the analysis. 240 questionnaires were evaluated for analysis.

Table 3.41. Homogeneity Values of Variances of Dimensions by Income

	Levene Statistics	Sd 1	Sd 2	P
Concrete Features	1.163	4	236	,287
Reliability	5.767	4	236	,000
Responsiveness	3.053	4	236	,012
Assurance	3.055	4	236	,012
Empathy	4.255	4	236	,001

When we control the homogeneity values of the variances of the dimensions in Table 3.40 as a result of the Levene test, it is seen that the p values are less than 0.05 in all dimensions except the Concrete Properties dimension and the variance between the groups is not equal.

The hypothesis developed to determine the difference between the service quality gap values according to the income status of the customers was evaluated by Welch analysis for the Reliability, Responsiveness, Assurance and Empathy dimensions where the variances were not equal, and with One Way Variance (ANOVA) analysis

at the 95% confidence interval for the Concrete Features dimension where the variances were equal.

Table 3.42. Welch Test Results of Dimensions for Income Status

		Welch Statistics	sd1	sd2	P
Reliability	Welch	5.454	4	76.51600	.001
Responsiveness	Welch	2.867	4	73.37300	.022
Assurance	Welch	7.266	4	71.88500	.000
Empathy	Welch	2.074	4	75.89800	.079

Table 3.43. ANOVA Test Results by Income Status

		Total Squares	sd	Mean Squares	F	P
Concrete Features	Between Groups	1.385	4	0.352	1.509	.189
	In Group	77.346	236	0.225		
Total		78.817	240			

With ANOVA and Welch tests, for 5% margin of error in all service dimensions, the results of the hypothesis were examined as H7 acceptance if $p > 0.05$ and H7 rejection if $p < 0.05$.

According to the results of ANOVA and Welch analysis in Table 3.41 and Table 3.42, service quality differs according to income level in other dimensions except Concrete Features and Empathy. When all dimensions are taken into account, the seventh hypothesis is rejected.

H7: The service quality gap value differs according to the income status of the customers. (H7=rejected)

The Tukey HSD and Tamhane test values of multiple comparison tests according to the income of the customers who receive service from the real estate agency are shown in Table 3.43. Income groups where the difference was determined for each dimension ($p < 0.05$) are given in the table.

In the mean difference column of the Tukey and Tamhane tests, the scores of the income groups with “*” and dark colored scores show the differences between the

groups. Negative differences mean that expectations between income groups are not met.

Table 3.44. Multiple Comparison Test of Servqual Scores by Income on a Dimensional Basis

Dimensions	(I) Monthly income	(J) Monthly income	Average Difference (I-J)	Std. Error	P	%95 Güven Aralığı	
						Lower Limit	Upper limit
Reliability	1501-2500 LYD	501-1500 LYD	-0.376*	0.081	0.005	-0.653	-0.071
		2501-3500 LYD	-0.106	0.073	0.964	-0.375	0.178
		3501-4500 LYD	-0.239	0.068	0.112	-0.497	0.033
		4501 LYD +	-0.269	0.077	0.077	-0.546	0.022
	2501-3500 LYD	501-1500 LYD	-0.287*	0.056	0.003	-0.484	-0.061
		1501-2500 LYD	0.074	0.073	0.964	-0.195	0.357
		3501-4500 LYD	-0.150	0.036	0.088	-0.297	0.012
		4501 LYD +	-0.180	0.049	0.105	-0.364	0.019
Responsiveness	1501-2500 LYD	501-1500 LYD	-0.106	0.114	0.983	-0.496	0.297
		2501-3500 LYD	-0.117	0.067	0.913	-0.370	0.150
		3501-4500 LYD	-0.259*	0.070	0.033	-0.518	0.014
		4501 LYD +	-0.194	0.069	0.346	-0.450	0.076
Assurance	1501-2500 LYD	501-1500 LYD	-0.334	0.136	0.337	-0.786	0.131
		2501-3500 LYD	-0.183	0.092	0.738	-0.509	0.157
		3501-4500 LYD	-0.438*	0.086	0.002	-0.738	-0.109
		4501 LYD +	-0.386*	0.087	0.012	-0.687	-0.056
	2501-3500 LYD	501-1500 LYD	-0.167	0.112	0.925	-0.556	0.236
		1501-2500 LYD	0.151	0.092	0.738	-0.174	0.491
		3501-4500 LYD	-0.271*	0.045	0.001	-0.430	-0.082
		4501 LYD+	-0.219*	0.046	0.011	-0.381	-0.028

*p<0.05

In the reliability dimension, it was determined that there was a difference between the Servqual score of people with a monthly income of 1501-2500 LYD and 2501-3500 LYD and the scores of the monthly income groups of 501-1500 LYD ($p < 0.05$).

When the reliability dimension of descriptive statistics is examined in Table 3.44, it is seen that the monthly income group scores of 1501-2500 LYD and 2501-3500 LYD are higher than the monthly income group of 501-1500 LYD.

In the dimension of Responsiveness, it was determined that there was a difference between the Servqual score of people with a monthly income of 1501-2500 LYD and the scores of the monthly income group of 3501-4500 LYD ($p < 0.05$).

When the reliability dimension is examined in Table 3.44, it is seen that the monthly income group score of 1501-2500 LYD is higher than the monthly income group score of 3501-4500 LYD.

In the dimension of Responsiveness, it was determined that there was a difference between the Servqual score of people with a monthly income of 1501-2500 LYD and the scores of the monthly income group of 3501-4500 LYD ($p < 0.05$).

When the Responsiveness dimension is analyzed in Table 3.44, it is seen that the monthly income group score of 1501-2500 LYD is higher than the monthly income group score of 3501-4500 LYD.

In the assurance dimension, it was determined that there was a difference between the Servqual score of people with a monthly income of 1501-2500 LYD and 2501-3500 LYD and the scores of the monthly income group of 3501-4500 and 4501 LYD and above ($p < 0.05$).

When the assurance dimension is examined in Table 3.44, it is seen that the monthly income group score of 2001- 3000 LYD and 2501-3500 LYD is higher than the monthly income group score of 3501-4500 LYD and 4501 LYD and above.

According to the results of the multiple comparison test, no significant difference was found between the mean scores when the other income groups were evaluated among themselves ($p > 0.05$).

Table 3.45. Descriptive Statistics of All Quality Dimensions by Income Status

Dimensions	Monthly income	Frequency	Avg.	Std. Deviation	Std. Error	95% Güven Aralığı	
						Lower Limit	Upper limit
Concrete Features	501-1500 LYD	7	-0.135	0.399	0.075	-0.324	0.054
	1501-2500 LYD	6	-0.466	0.394	0.076	-0.658	-0.274
	2501-3500 LYD	61	-0.364	0.545	0.044	-0.483	-0.244
	3501-4500 LYD	97	-0.403	0.416	0.025	-0.484	-0.323
	4501 LYD+	69	-0.373	0.505	0.039	-0.482	-0.263
	Total	240	-0.371	0.477	0.011	-0.425	-0.318
Reliability	501-1500 LYD	7	-0.226	0.248	0.042	-0.346	-0.105
	1501-2500 LYD	6	-0.586	0.335	0.063	-0.750	-0.422
	2501-3500 LYD	61	-0.496	0.381	0.027	-0.581	-0.412
	3501-4500 LYD	97	-0.363	0.299	0.014	-0.422	-0.304
	4501 LYD+	69	-0.333	0.448	0.033	-0.431	-0.235
	Total	240	-0.395	0.374	0.005	-0.437	-0.353
Responsiveness	501-1500 LYD	7	-0.576	0.471	0.090	-0.797	-0.354
	1501-2500 LYD	6	-0.666	0.322	0.060	-0.824	-0.508
	2501-3500 LYD	61	-0.565	0.300	0.018	-0.632	-0.497
	3501-4500 LYD	97	-0.423	0.415	0.025	-0.503	-0.343
	4501 LYD+	69	-0.488	0.340	0.022	-0.563	-0.413
	Total	240	-0.502	0.371	0.005	-0.544	-0.460
Assurance	501-1500 LYD	7	-0.385	0.524	0.102	-0.631	-0.139
	1501-2500 LYD	6	-0.704	0.412	0.080	-0.904	-0.503
	2501-3500 LYD	61	-0.536	0.445	0.033	-0.634	-0.438
	3501-4500 LYD	97	-0.281	0.371	0.020	-0.354	-0.209
	4501 LYD+	69	-0.333	0.339	0.022	-0.408	-0.259
	Total	240	-0.395	0.414	0.008	-0.441	-0.348
Empathy	501-1500 LYD	7	-0.254	0.234	0.039	-0.368	-0.140
	1501-2500 LYD	6	-0.366	0.389	0.074	-0.555	-0.177
	2501-3500 LYD	61	-0.425	0.292	0.017	-0.491	-0.360
	3501-4500 LYD	97	-0.434	0.364	0.020	-0.505	-0.363
	4501 LYD+	69	-0.385	0.326	0.020	-0.457	-0.312
	Total	240	-0.403	0.331	0.003	-0.440	-0.365

3.9.8. Comparison of Servqual Scores by Service Type

In order to determine the difference between the service quality gap values according to the type of service received, the Levene test was used to test the equality of group variances.

For the comparisons of the service type received, some low “Business Tracking Urban Transformation-Floor Easement-Mortgage Title Deed and others” were excluded from the analysis (File Tracking=3). 239 questionnaires were evaluated for analysis.

Table 3.46. Homogeneity Values of Variances of Dimensions by Service Type

	Levene Statistics	Sd 1	Sd 2	P
Concrete Features	0.808	3	236	,439
Reliability	4.196	3	236	,005
Responsiveness	4.103	3	236	,005
Assurance	6.138	3	236	,000
Empathy	2.318	3	236	,064

When we control the homogeneity values of the variances of the dimensions in Table 3.45 as a result of Levene's test, it is seen that the p values for all dimensions except Concrete Features and Empathy Dimension are less than 0.05 and the variance between the groups is not equal.

The hypothesis developed to determine the difference between the service quality gap values according to the income level of the customers was evaluated with Welch for the Reliability, Responsiveness, Assurance and Dimensions where the variances are not equal, with One Way Variance (ANOVA) at the 95% confidence interval for the Concrete Characteristics and Empathy dimension where the variances are equal.

Table 3.47. Welch Test Results for Dimensions for Service Type

Welch Statistics	Sd-1	Sd-2	P
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Reliability	Welch	9.098	3	173.800	.000
Responsiveness	Welch	11.523	3	179.134	.000
Assurance	Welch	38.314	3	179.648	.000

Table 3.48. ANOVA Test Results by Income Status

		Total Squares	sd	Mean Squares	F	P
Concrete Features	Between Groups	12.361	3	4.466	20.961	.000
	In Group	65.192	236	0.187		
	Total	78.638	239			
Empathy	Between Groups	6.931	3	2.656	26.231	.000
	In Group	31.804	236	0.082		
	Total	39.903	239			

With ANOVA and Welch test, for 5% margin of error in all service dimensions, the results of the hypothesis were examined as H8 acceptance if $p > 0.05$ and H8 rejection if $p < 0.05$.

According to the Welch and ANOVA results in Table 54 and Table 55, service quality in all dimensions differs according to the type of service received ($p < 0.05$). When all dimensions are taken into account, the eighth hypothesis is accepted.

H8: The service quality gap value differs according to the service received by the customers. (H8= Accepted)

The Tukey HSD and Tamhane test values of multiple comparison tests according to the type of service received from the real estate agency are shown in Table 3.48. Income groups for which the difference was determined for each dimension ($p < 0.05$) are given in the table.

In the mean difference column of the Tukey and Tamhane tests, the scores of the income groups with “*” and dark colored scores show the differences between the groups. Negative differences mean that expectations between income groups are not met.

Table 3.49. Multiple Comparison Test of Servqual Scores by Service Received on a Dimensional Basis

						<u>%95 Güven Aralığı</u>	
Dimensions	(I) Service Type	(J) Service Type	Average Difference (I-J)	Std. Error	P	Lower Limit	Upper limit
Concrete Features	I received brokerage service to purchase real estate.	I Sold Real Estate	-0.4220*	0.0537	0.000	-0.6019	-0.2420
		I Rented Real Estate.	0.0010	0.0533	0.994	-0.1781	0.1800
		I Rented out Real Estate.	-0.3955*	0.0577	0.000	-0.5859	-0.2051
	I got brokerage service for the purpose of renting real estate.	I bought real estate	-0.0330	0.0533	0.994	-0.2120	0.1461
		I Sold Real Estate	-0.4389*	0.0512	0.000	-0.6125	-0.2653
		I Rented out Real Estate	-0.4125*	0.0554	0.000	-0.5969	-0.2281
Reliability	I got brokerage service for the purpose of renting real estate.	I bought real estate	-0.2541*	0.0440	0.001	-0.4138	-0.0943
		I Sold Real Estate	-0.2778*	0.0365	0.000	-0.4176	-0.1380
		I Rented out Real Estate	-0.2387*	0.0501	0.005	-0.4149	-0.0625
Responsive ness	I got brokerage service for the purpose of renting real estate.	I Bought Real Estate	-0.2157*	0.5503	0.002	-0.3666	-0.0647
		I Rented Real Estate	-0.2792*	0.0437	0.000	-0.4381	-0.1202
		I Rented out Real Estate	-0.2865*	0.0343	0.000	-0.4206	-0.1523
Assurance	I received brokerage service to purchase real estate.	I Bought Real Estate	-0.2290*	0.0394	0.001	-0.3765	0.0495
		I Sold Real Estate	0.2692*	0.0473	0.000	0.1006	0.4377
		I Rented out Real Estate	-0.3101*	0.0385	0.000	-0.4555	-0.1647
	I got brokerage service for the purpose of renting real estate.	I Bought Real Estate	-0.3012*	0.0473	0.000	-0.4697	-0.1326
		I Sold Real Estate	-0.5142*	0.0427	0.000	-0.6704	-0.3580
		I Rented out Real Estate	-0.5953*	0.0418	0.000	-0.7494	-0.4411
Empathy	I received brokerage service to purchase real estate.	I Sold Real Estate	-0.3434*	0.0324	0.000	-0.4683	-0.2186
		I Rented Real Estate	-0.0095	0.0321	0.998	-0.1337	0.1147
		I Rented out Real Estate	-0.2967*	0.0352	0.000	-0.4287	-0.1646
	I got brokerage service for the	I Bought Real Estate	-0.0225	0.0321	0.998	-0.1467	0.1017

purpose of renting real estate.	I Sold Real Estate	-0.3499*	0.0306	0.000	-0.4703	-0.2295
	I Rented out Real Estate	-0.3031*	0.0335	0.000	-0.4310	-0.1752

It has been determined that there is a difference between the Servqual score of the customers who receive Real Estate Purchase and Leasing service in the Concrete Features dimension and the scores of the customer groups that receive services for Selling and Lease Real Estate ($p < 0.05$). When the descriptive statistics in Table 3.49 are examined, it is seen that the scores of the group that receives services for the Purchase and Rental transaction are higher than the customer group that receives services for the Sale and Lease of Real Estate.

It has been determined that there is a difference between the Servqual score of the customers who receive Real Estate Rental service in the reliability and responsiveness dimension and the scores of the customer groups who receive service for Real Estate Purchase, Real Estate Selling and Real Estate Lease transactions ($p < 0.05$). When the Reliability and Responsiveness dimensions in Table 3.49 are examined, it is seen that the scores of the people who receive service for the Real Estate Rental transaction are higher than the service type groups where the difference occurs.

In the assurance dimension, it has been determined that there is a difference between the Servqual score of the customers who receive service for Real Estate Purchase and the scores of customers who receive service for Real Estate Selling, Real Estate Rental and Lease transactions. In this dimension, it was observed that there was a difference between the scores of the people who received service for real estate rental and all other service types ($p < 0.05$). When the Assurance dimension is examined in Table 3.49, it is seen that the score of the customers who receive service for the Real Estate Leasing transaction has the highest value.

In the empathy dimension, it was determined that there was a difference between the Servqual score of the customers who received Real Estate Purchase and Leasing service and the scores of the customer groups that received service for Selling and Lease Real Estate ($p < 0.05$). Looking at the Empathy dimension in Table 3.49, it is seen that the scores of the group receiving services for the Purchase and Rental

transaction are higher than the customer group receiving services for Selling and Lease Real Estate.

According to the results of the multiple comparison test, no significant difference was found between the mean scores when the other service types were evaluated among themselves ($p>0.05$).

Table 3.50. Descriptive Statistics of All Quality Dimensions by Service Received

		N	Avg.	Std. Deviation	Std. Error	95% Confidence Interval	
						Low	Low
Concrete Features	I Bought Real Estate	54	-0.5540	0.4870	0.041	-0.667	-0.441
	I Sold Real Estate	67	-0.1480	0.4280	0.031	-0.242	-0.054
	I Rented Real Estate	69	-0.5710	0.4360	0.031	-0.665	-0.477
	I Rented out Real Estate	49	-0.1740	0.3760	0.031	-0.267	-0.082
	Total	239	-0.3680	0.4760	0.011	-0.421	-0.314
Reliability	I Bought Real Estate	54	-0.3270	0.3680	0.027	-0.413	-0.241
	I Sold Real Estate	67	-0.3040	0.2850	0.016	-0.367	-0.240
	I Rented Real Estate	69	-0.5650	0.3810	0.026	-0.648	-0.483
	I Rented out Real Estate	49	-0.3430	0.4160	0.035	-0.445	-0.241
	Total	239	-0.3900	0.3770	0.006	-0.432	-0.347
Responsiveness	I Bought Real Estate	54	-0.4810	0.3740	0.028	-0.568	-0.394
	I Sold Real Estate	67	-0.4180	0.4340	0.032	-0.512	-0.323
	I Rented Real Estate	69	-0.6810	0.3260	0.020	-0.752	-0.610
	I Rented out Real Estate	49	-0.4100	0.2820	0.019	-0.481	-0.340
	Total	239	-0.4940	0.3760	0.006	-0.546	-0.461
Assurance	I Bought Real Estate	54	-0.4370	0.3630	0.027	-0.522	-0.352
	I Sold Real Estate	67	-0.2240	0.3170	0.019	-0.294	-0.154
	I Rented Real Estate	69	-0.7220	0.4310	0.031	-0.815	-0.629
	I Rented out Real Estate	49	-0.1430	0.2700	0.018	-0.211	-0.075
	Total	239	-0.3950	0.4170	0.008	-0.442	-0.348
Empathy	I Bought Real Estate	54	-0.5500	0.3160	0.021	-0.625	-0.476
	I Sold Real Estate	67	-0.2230	0.3310	0.021	-0.296	-0.150
	I Rented Real Estate	69	-0.5570	0.2900	0.016	-0.620	-0.493
	I Rented out Real Estate	49	-0.2700	0.2300	0.013	-0.328	-0.211
	Total	239	-0.4030	0.3320	0.003	-0.441	-0.366

3.9.9. Correlations Between Demographic Variables and Aspects

The correlation matrix between the Equally Weighted Servqual Score calculated for each and all dimensions in the service quality scale and the demographic variables of Educational Status, Age and Average monthly income is as follows:

When the correlation values in Table 3.51 were examined, it was determined that the correlation between the dimensions was significant ($p<0.01$). It is seen that there is a

moderate and below positive correlation in all dimensions, and when the correlation coefficients are examined, the values are between 0.165 and 0.521.

When the correlation values for the Age variable in Table 3.51 were examined, it was determined that there was a positive correlation at a significance level of 0.01 and a weak correlation with a strength of 0.200 between the Equally Weighted Servqual Score and the Education Level.

When the correlation values for the average monthly income variable were examined, it was found that there was no significant relationship between dimensions ($p > 0.01$; $p > 0.05$).

Table 3.51. Correlation Coefficients and Power Relationship

Coefficient Level	Power Statement
$\pm 0,81 - \pm 1,00$	Very strong
$\pm 0,61 - \pm 0,80$	Strong
$\pm 0,41 - \pm 0,60$	Middle
$\pm 0,21 - \pm 0,40$	Weak
$\pm 0,00 - \pm 0,20$	Very Weak

Table 3.52. Correlation Analysis Between Variables

Concrete Features			Reliability	Responsiveness	Assurance	Empathy	Age	Average Monthly Income
Concrete Features	Correlation Coefficient	1.000	.389**	.451**	.278**	.474**	.107*	-.059
	Sig. (2-tailed)		.000	.000	.000	.000	.041	.271
	N	242	242	242	242	242	242	242
Reliability	Correlation Coefficient	.389**	1.000	.158**	.382**	.318**	.121*	.113*
	Sig. (2-tailed)	.000		.001	.000	.000	.029	.049
	N	242	242	242	242	242	242	242
Responsiveness	Correlation Coefficient	.451**	.158**	1.000	.386**	.284**	.209**	.091
	Sig. (2-tailed)	.000	.001		.000	.000	.000	.108
	N	242	242	242	242	242	242	242
Assurance	Correlation Coefficient	.278**	.382**	.386**	1.000	.517**	.162**	.178**
	Sig. (2-tailed)	.000	.000	.000		.000	.003	.002
	N	242	242	242	242	242	242	242
Empathy	Correlation Coefficient	.474**	.318**	.281**	.518**	1.000	.108*	-.076

	Sig. (2-tailed)	.000	.000	.000	.000		.038	.132
	N	242	242	242	242	242	242	242
Equal Weighted Servqual Score	Correlation Coefficient	.729**	.611**	.638**	.733**	.739**	.204**	.081
	Sig. (2-tailed)	.000	.000	.000	.000	.000	.000	.157
	N	242	242	242	242	242	242	242

3.10. Discussion of the Research Findings

According to the hypothesis evaluations obtained as a result of the study, it is seen that there is a negative significant difference between customer service expectations and perceptions in all dimensions.

According to the results of the hypothesis created according to the gender of the customers, when all the service quality dimensions were evaluated together, it was seen that there was no significant difference between the groups. However, when the comparison test results were evaluated on a dimensional basis, it was determined that there was a significant difference between Men and Women in the Dimension of Concrete Features and Reliability, and the expectations of female customers were not met more than men.

According to the results of the hypothesis created according to the marital status variable, when all dimensions were evaluated together, it was seen that there was no significant difference between the groups. However, when the comparison test results are evaluated on a dimensional basis, it has been determined that there is a significant difference between Married and Single customers in Concrete Features and Reliability dimensions, and the expectations of Married people are met more.

According to the results of the hypothesis created according to the education level variable, it was determined that there was a significant difference between the education level groups in all dimensions. According to the comparison test results, it was determined that the difference was mostly observed in PhD, Master's and University graduates, and as the education level increased, the difference score increased and the level of meeting expectations decreased.

According to the results of the hypothesis created for the age variable, it was determined that there was a significant difference between the age groups in all dimensions. According to the comparison test results, it was determined that the

difference was mostly in the 25-34, 45-54 age groups, followed by the 35-44, 18-24, 55-64 age groups. The difference score was highest in the Empathy dimension between the 25-34 age group and the 64+ age group. It has been determined that the age group with the lowest difference score and the highest expectations is the customers aged 64 and over.

According to the results of the hypothesis created for the profession variable, when all dimensions were evaluated together, it was determined that there was no significant difference between the groups. However, when each dimension is evaluated separately, it has been observed that there is a significant difference between occupational groups in all dimensions except the Concrete Characteristics dimension. According to the results of the comparison test, it has been determined that the difference is mostly between public employees and student customers and other occupational groups. It has been determined that the group with the lowest difference score and the highest level of expectations is Retired customers.

According to the results of the hypothesis created for the monthly average income variable, when all dimensions were evaluated together, it was determined that there was no significant difference between the groups. However, when each dimension was evaluated separately, it was determined that there was a significant difference between the income level groups in the Reliability, Responsiveness and Assurance dimensions. According to the results of the comparison test, it has been observed that the difference is mostly between 1501-2500 LYD, 2501-3500 LYD and other income groups.

According to the results of the hypothesis created according to the service type variable, it was determined that there was a significant difference between the service types in all dimensions. According to the comparison test results, it has been determined that the difference is mostly between the customers who receive service for real estate rental and home owners who receive services for leasing and selling real estate. When the service type comparison results are examined in general, it has been observed that the expectations of the customers who receive service for the purchase and rental process are less met, and the expectations of the homeowner customers who receive service to sell or rent their real estate are met more.

When the research results are compared with other studies in the literature, results similar to the findings of Johnson, Dotson and Dunlap (1988) and McDaniel and Louargand (1994) were obtained. It was concluded that the quality dimensions in all studies were the same as the dimensions in the Servqual scale.

Johnson, Dotson and Dunlap (1988) found that the dimensions of Reliability, Empathy, and Physical Product attributes were delivered according to the expectations of the customers, but the other two dimensions of the firm, Assurance-Responsiveness and Tangibles, remained below expectations. When these results were compared with our study, it was concluded that the dimension in which the expectations were met the least in both studies was Responsiveness. When compared in order of importance, it was determined that the dimension in which the expectations were met the most was Reliability in both studies.

McDaniel and Louargand (1994) concluded in their study that it was below expectations in all service quality dimensions except the Concrete Features dimension, and that the Reliability and Assurance dimensions were determinant for the intermediation services (the service quality gap scores were the lowest), and the Sensitivity and Empathy dimensions were the most fulfilled for their expectations. In our study, expectations were not met in all dimensions, and although the two studies were similar in this respect, it was concluded that, contrary to McDaniel and Louargand (1994), when the dimensional order of importance was examined, Responsiveness and Empathy dimensions were decisive for the service quality of the firm, and the dimension in which the expectations were met the most was the reliability dimension. This difference is thought to be caused by geographical and cultural differences.

Nelson and Nelson (1995) and Seiler, Webb, and Whipple (2000) did not directly measure the relationship between factors and overall service quality in their study. Since the factor structures are different, no comparison was made with these studies.

In general, even though the perceived service quality scores were high despite the high scores given by the customers to the expected service quality evaluations, this situation caused the tolerance for the difference score to narrow and the results to be negative. With this aspect, the model has also been the subject of criticism in the literature. In criticism of the Servqual model, the existing structure of the model

measures the expected service quality to a high degree and that the main useful part of the model is the perceived service quality part.

Similarly, Teas questioned the meaning of the gap values, namely the differences, that occurred in the measurements. For example, the data collected for the perceived and expected values have multiple possibilities to obtain the value 0. (Perceived (P) – Expectation (E) P=1, E=1; P=2, E=2 etc.) It should be questioned whether all of these values mean the same thing (Teas, 1993). This situation gives the result that the SERVQUAL scale evaluates the customer's expectation and perception equally, and that there is no problem with the service provided, which is actually not true. In fact, when the expectation of the customer is slightly higher than the perceived, a result of dissatisfaction arises. However, the evaluations made various contributions to both the model and the literature on service quality measurement.

Table 3.53. Summary Table of Research Hypotheses

Hypotheses	Method	Service quality dimension	P value	Result
H1: The services offered by the business meet customer expectations with all service dimensions.	Paired Sample T-Test	Concrete values	0.000	Rejection
		Reliability	0.000	
		Responsiveness	0.000	
		Assurance	0.000	
		Empathy	0.000	
H2: The service quality gap value differs according to the gender of the customers.	Independent Sample T-Test	Concrete values	0.088	Rejection
		Reliability	0.042	
		Responsiveness	0.892	
		Assurance	0.568	
		Empathy	0.119	
H3: The service quality gap value differs according to the marital status of the customers.	Independent Sample T-Test	Concrete values	0.019	Rejection
		Reliability	0.000	
		Responsiveness	0.351	
		Assurance	0.229	
		Empathy	0.869	
H4: The service quality gap value differs according to the education level of the customers.	Welch Test	Concrete values	.000	Acceptance
		Reliability	.000	
		Responsiveness	.000	
		Assurance	.000	
		Empathy	.000	
H5: The service quality	Welch Test	Concrete	.001	Acceptance

gap value differs according to the age group of the customers.		values		
		Reliability	.001	
		Responsiveness	.001	
		Assurance	.000	
H6: The service quality gap value differs according to the profession of the customers.	One-Way Analysis of Variance (ANOVA) and Welch Test	Empathy	.000	Rejection
		Concrete values	0.093	
		Reliability	0.000	
		Responsiveness	0.008	
		Assurance	0.000	
		Empathy	0.000	

Table 3.53. (Cont.)

H7: The service quality gap value differs according to the monthly income of the customers.	One-Way Analysis of Variance (ANOVA) and Welch Test	Concrete values	0.189	Rejection
		Reliability	0.001	
		Responsiveness	0.022	
		Assurance	0.000	
		Empathy	0.079	
H8: The service quality gap value differs according to the service received by the customers.	One-Way Analysis of Variance (ANOVA) and Welch Test	Concrete values	0.439	Acceptance
		Reliability	0.005	
		Responsiveness	0.005	
		Assurance	0.000	
		Empathy	0.064	

4. CONCLUSION AND RECOMMENDATIONS

In the service sector, which is important for the economic system, businesses are in an effort to improve the quality of the services they provide in order to provide competitive advantage. It is seen that service quality, which is an abstract concept, has gained importance as a subject that needs continuous measurement and improvement from its emergence for the enterprise to the end point where customers perceive the relevant service. In this context, it is seen that the aforementioned concepts have become important in terms of the real estate sector, which is growing and competition is increasing. In our country, it is seen that new corporate brokerage firms have emerged that want to respond to the demand in the sector, together with the demand for real estate and the legal regulations brought to the purchase and sale transactions in this field. Firms need to work on improving the negative image of the "real estate" perception in our country in order to get a sufficient share from the market. At this point, measuring the service quality and understanding the expectations of the customers emerge as an important issue for the real estate sector.

In this study, in order to measure the service quality of a corporate brand serving in the real estate sector, a survey was conducted with the company's customers within the scope of SERVQUAL model. In this context; Questions about the expressions in the service quality scale were asked to 242 people selected by convenience sampling method among the customers who received service from real estate agency, and a questionnaire was conducted using a five-point Likert scale. As a result of the survey, it was investigated to what extent the expectations of the company customers were met in comparison with their demographic characteristics and the differences between their perceptions of service quality were examined.

After the introduction in the first part of the study, and in the second part, service is defined, after that, definitions about quality are made, and in the third part, research data and findings for the measurement of service quality are included. In this part of the research, firstly, the demographic characteristics of the participants, the purpose of receiving service and the frequency distribution of their answers about the real

estate agencies from which the service is received are shown. Then, in order to measure the service quality, which is the main purpose of the research, factor analysis was applied to obtain less significant and identifiable variables from a large number of variables for the scale adapted to the real estate sector.

As a result of the factor analysis, 4 questions with a factor weight of less than 0.5 from twenty-two statements in the original scale were excluded from the analysis, and five factors with an Eigenvalue above 1 were obtained. It has been concluded that the service quality dimensions obtained as a result of the factor analysis are the same as the dimensions in the Servqual scale. Five dimensions consisting of "Concrete Features, Reliability, Responsiveness, Assurance and Empathy" obtained as a result of the analysis were subjected to reliability analysis and the analysis was continued because the Cronbach Alpha coefficients in all dimensions were within acceptable limits. According to the results of the factor analysis, the order of importance (total variance explained for each dimension) for expected service quality was determined as "Concrete Features, Assurance, Responsiveness, Reliability, and Empathy". Calculations in the Servqual scale and difference tests were performed for all service quality dimensions.

The Servqual scores and the equally weighted Servqual score were calculated for the Perceived service quality and the Expected service quality offered by real estate agencies in all service dimensions. The scores were negative in all dimensions and overall average, especially in the Responsiveness and Empathy dimensions. Responsiveness and Empathy dimensions Servqual Scores were below the Equally Weighted Servqual Score calculated for Real Estate businesses. The service quality dimension, where the expectations are met the most, was determined as Reliability.

When the Servqual scores of the expressions are examined, the expression that the service quality expectations are met the least is the eleventh expression of the scale in the Responsiveness dimension, "Real estate office employees provide fast service to the customers", and the third expression of the scale in the Concrete Features dimension is "Real estate office employees are clean and neat. looks". From this, it has been seen that real estate consultancy firms should meet the needs of understanding customer needs, fulfilling the expected service in the fastest way and explaining the service details to the customers, and that the employees are more

successful in terms of being clean and well-groomed, respect for customers and service records. Negative scores in all dimensions indicate that customer expectations are not met and businesses need to make improvements in all service dimensions.

Since the Servqual model evaluates service quality on the basis of dimensions and discusses it in detail according to other models, it has the feature of being a different model. The most important feature of the said difference is that the scale not only determines the elements that cause poor quality in service, but also results in closing the areas where poor quality occurs.

As a result, it is seen that the services offered by real estate agencies do not meet the expectations of their customers sufficiently. Differences between customer groups indicate that customers have different expectations and perceptions about the services offered by the company. In order to increase the service quality of the enterprise, these differences should be observed and systematic studies should be carried out. In terms of service quality dimensions, Responsiveness, Empathy, in particular, Assurance, Concrete Features, Reliability dimensions, respectively, working to close the gaps, in terms of demographic characteristics, between the ages of 25-34, single marital status, high school and graduate or below, public personnel. It must first meet the needs of its customers. It is considered that it may be beneficial for the company to focus on the factors that increase the motivation of its employees in order to show more individual attention to the customers with this feature and to meet the customer needs of the business. Finally, when the measurement of service quality is repeated in certain periods, the improvement of the service quality of the enterprise can be observed.

Within the scope of the research, both the general service quality and the service quality studies in the real estate sector were evaluated together with the domestic and foreign literature. The study is the first study in which quality assessment of real estate brokerage services in Libya has been made, and it is a source for future research on this subject.



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RESUME

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