



Influence of Service Quality and Customer Perceived Value
on Loyalty with Mediating Role of Customer Satisfaction:
Private Care Service for the Elderly in Harbin, China

Jibing Liu

Dissertation presented to Rajamangala University of Technology Phra Nakhon
as part of the study of the Doctor of Business Administration Program
Academic Year 2024



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Author Jibing Liu

Degree Doctor of Business Administration

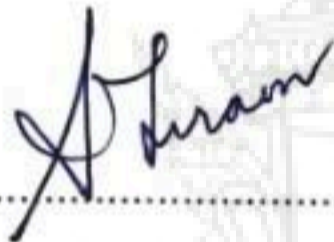
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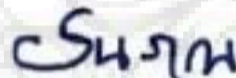
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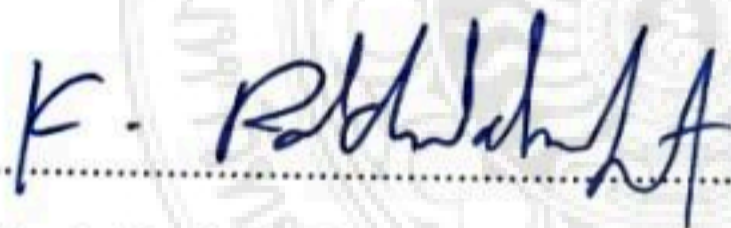
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ABSTRACT

Service quality is widely recognized as a critical differentiator in private elderly care facilities. This quantitative correlation study aimed to examine the influence of service quality and customer perceived value on customer loyalty, with a focus on the mediating role of customer satisfaction in the context of Chinese private elderly care institutions.

Drawing on the SERVQUAL model and theory, the study developed and tested a comprehensive framework that incorporates both direct and mediating effects. Data were collected from 520 elderly residents across eight major private care institutions in H City, China, using structured questionnaires. Structural equation modeling (SEM) revealed significant direct effects of service quality on customer satisfaction ($\beta = 0.632$, $p < 0.001$), customer-perceived value ($\beta = 0.433$, $p < 0.001$), and loyalty ($\beta = 0.628$, $p < 0.001$). Additionally, the analysis identified significant mediating effects of customer satisfaction (indirect effect = 0.189, 95% CI [0.132, 0.251]). These findings contribute to service quality theory by highlighting the differential impacts of mediating mechanisms in elderly care contexts and provide practical implications for service providers in developing targeted strategies to enhance service quality and customer satisfaction.

The results of this study offer valuable insights for private elderly care providers in Harbin, China, enabling them to make informed decisions, allocate resources effectively, and improve service quality. By doing so, providers can enhance customer satisfaction and foster positive behavioral intentions, ultimately contributing to the sustainable development of the private elderly care sector.

Keywords : Service Quality, Customer Perceived Value, Loyalty, Mediating Role, Customer Satisfaction



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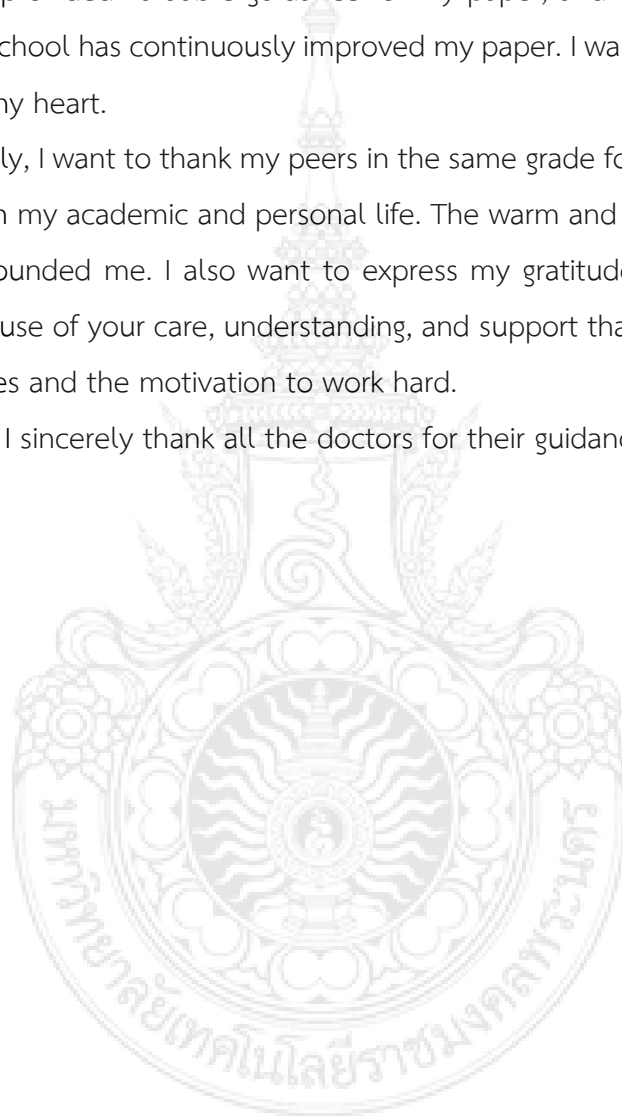


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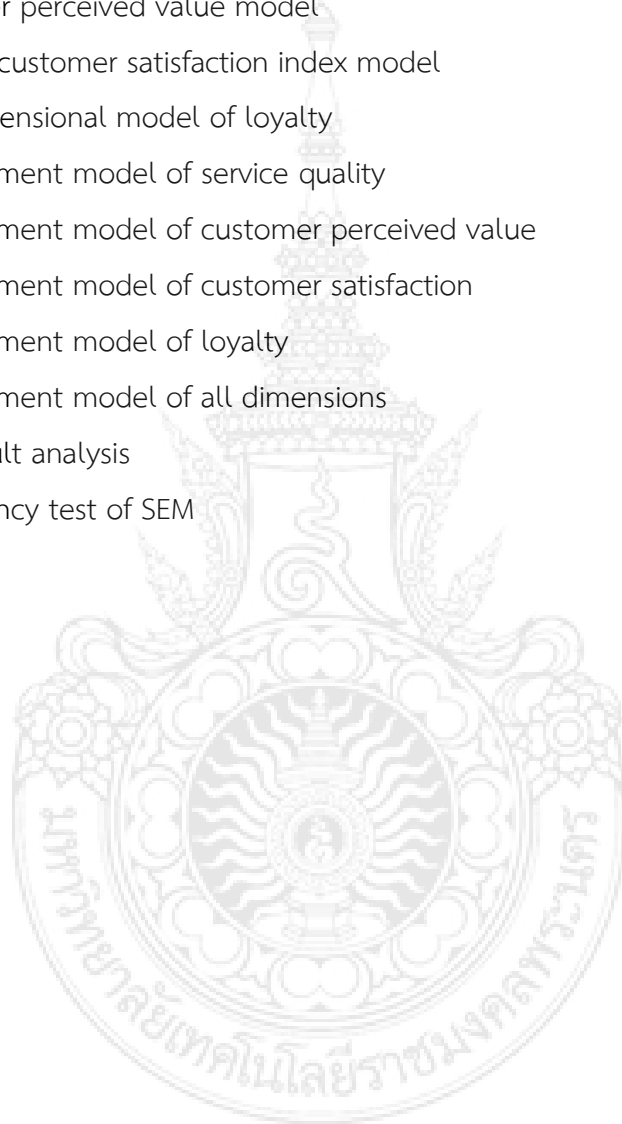
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Chapter 1

Introduction

Chapter 1 outlines the background of the project and its research questions. It presents objectives and scope, and analysis the expected research outcomes based on the proposed hypothesis. Additionally, key concepts relevant to the study are defined to provide context for the research.

1.1 Background and Research Problem

1.1.1 Background

According to the National Bureau of Statistics of China (2021), in May 2021, the 7th National Population Census Bulletin was published. They have provided relevant data on the elderly population in China: Among the nation's 1411.78 million inhabitants, 18.70% of the population was 60 years of age or older, and 13.50% was 65 or older. In contrast to findings of the 2010 Sixth National Population Census, there are already more than 40 million senior individuals in China. In just ten years (Cheng, 2022). The percentage of the population that is 65 and older rose by 4.63%, while the percentage of individuals 60 and older increased by 5.44%. Researchers believed that the population of China has grown rapidly, seriously, and aged, with a very high growth rate (Zhu and Lin, 2022).

The Ministry of Civil Affairs (2022) claims that in China, there were 381,000 elder care institutions and establishments, in December 2022, with 8,223,000 beds available for senior care services. By 2020, China had already surpassed 264 million people in its senior population. According to Liu (2024a), data has indicated that there is an insufficient number of the number of beds in different senior care facilities is available to accommodate the needs of the aging population. placing significant pressure on China's elderly care institutions. To combat the rising rate of population aging in the nation, the Chinese government has instituted a national policy. Outlining

the 2035 Vision Goals and the 14th Five-Year Plan for the People's Republic of China's National Economic and Social Development contain specific measures in this regard. The pension system and service quality in China are facing growing challenges due to the country's aging population. China's population, economic structure, and family size structure have all changed, making the old family pension model unsuitable for The Times' demands.

The Chinese government provides government support in accordance with this reality and actively encourages social forces to participate in senior care services. The Times' needs have not been met by the conventional family pension arrangement, due to China's demographic shifts, economic transformation, and family size structure. The Chinese government aggressively promotes social forces to engage and provides government support accordance.

China has seen a sharp increase in the number and size of private senior care facilities in recent years. Private senior care facilities are a crucial component of a solution to the aged care issue since they have effectively integrated and reflected extraordinary features like a market as the main body and flexible supply and demand. Researchers had suggested that, apart from fulfilling the requirements for services related to elder care, it is essential to fully mobilize social resources and enhance resource integration (Liu, 2024b).

1.1.2 Research Problem

A recent development in senior care facilities is the private sector. Private senior care facilities are a new type of facility that takes part in the development of social welfare projects. In addition to generating jobs and providing for the needs of the old, it also addresses the lack of market regulation and offers helpful solutions and recommendations for resolving issues facing China's senior citizens.

Based on the unique aging context in China, this study looks at how perceived value, loyalty, and service excellence are related in private senior care facilities. It further analyzes customer satisfaction's mediating role, aiming to provide theoretical insights for Increasing loyalty in China's private elderly care sector.

Moreover, the results will aid in the development of industry standards for elderly care services.

1.2 Objectives of Study

1.2.1 To look into how client happiness is impacted by the quality of the private care services provided to the elderly, customer perceived value, and loyalty.

1.2.2 To investigate the relationship between client loyalty and satisfaction with the private care service for the elderly and the perceived value of the service.

1.2.3 To look into the impact of customer satisfaction with the private care service on loyalty.

1.2.4 To investigate look into How client satisfaction affects service quality and loyalty in the private senior care sector.

1.3 Scope of Study

1.3.1 Scope of Contents

The aim of this quantitative correlation study is to examine how customer satisfaction functions as a mediator in China's relationship between perceived value and service quality and customer loyalty.

1.3.2 Scope of Population

The research population consists of clients of China's private senior care service providers.

1.3.3 Scope of Location

Harbin, in China

1.3.4 Scope of Sample

The study sample consisted of elderly individuals with adequate expressive abilities, selected from 8 representative privately managed senior care facilities in Harbin.

Result of study will provide a conceptual guide to enhancing customer pleasure, quality of service and perceived value. Study is intended to encourage pertinent theoretical research.

1.4 Research Hypothesis

Hypothesis were proposed:

Hypothesis1 (H1): The quality of services has a favorable effect on customer satisfaction.

Hypothesis2 (H2): Service quality has a favorable effect on customers' perceptions of value.

Hypothesis3 (H3): Service quality has a favorable effect on loyalty.

Hypothesis4 (H4): Customer perceived value has a beneficial effect on customer satisfaction.

Hypothesis5 (H5): Customer perceived value has a positive effect on loyalty.

Hypothesis6 (H6): Customer satisfaction has a positive effect on loyalty.

Hypothesis7(H7): Through consumer perceived value, service quality positively impacts loyalty.

Hypothesis8(H8): Service quality has a favorable effect on loyalty through improving client happiness.

Hypothesis9(H9): Service quality has a beneficial effect on loyalty through customer satisfaction and consumer perceived value.

1.5 Conceptual Framework

Figure 1.1 displays conceptual framework.

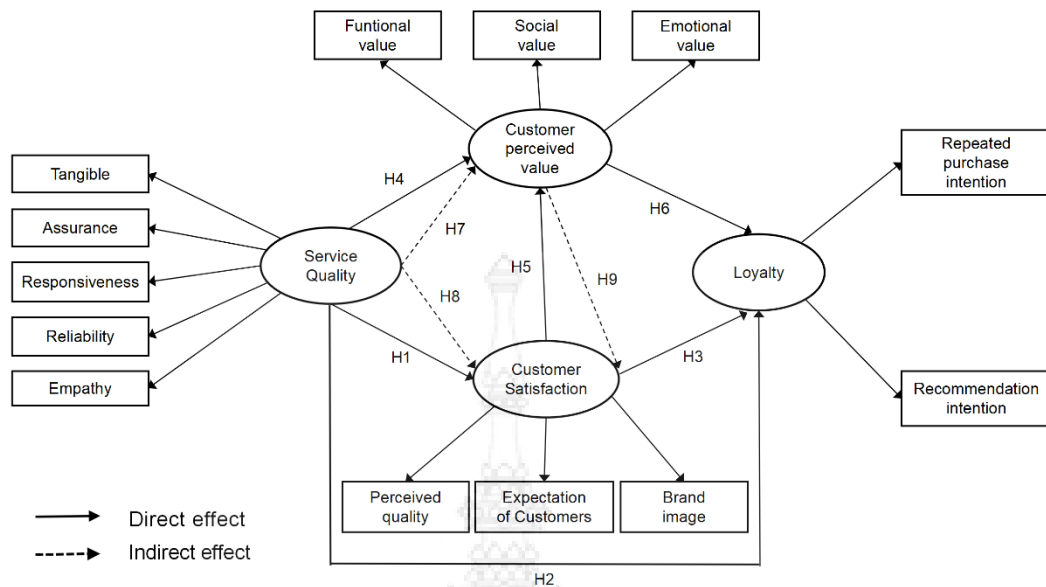


Figure 1.1 Conceptual framework for research

1.6 Expected Benefits

Through systematic research and analysis, we have investigated how consumer satisfaction, customer perceived value, and loyalty are affected by private senior care services.

1.6.1 The study will assist us in comprehending the relationship between perceived value, customer happiness, and service quality and help establish stronger brand loyalty.

1.6.2 The study will offer theoretical support and practical consultation for enhancing service quality in China's private elderly care institutions. This will enable them to adjust and improve their service strategies to meet evolving market conditions and specific requirements.

1.6.3 The study will advance knowledge of senior care and offer insightful information to guide future investigations.

1.6.4 The study will explore the relationship between customer satisfaction and loyalty in the context of private senior care services, providing a theoretical reference for related study.

1.7 Definition of Term

1.7.1 Service Quality

Lewis (1983) defines service quality is the extent to which client expectations are met by the quality of service rendered, and meeting or beyond these expectations is a necessary component of high-quality service.

The gap between what customers expect and what they obtain is what Grönroos (1984) defined as service quality. As stated by Berry, Zeithaml, and Parasuraman (1988), there are 5 components that make up: tangible, responsiveness, reliability, empathy, and assurance.

1.7.1.1 Tangible

Tangible, a component of service quality, refer to the actual buildings, furnishings, and staff appearances that service providers offer (Parasuraman et al., 1988).

1.7.1.2 Assurance

Assurance, a component of service quality, refers to the expertise, civility, and capacity of staff to inspire confidence and trust as a component of service excellence (Parasuraman et al., 1988).

1.7.1.3 Empathy

Empathy, a component of service quality, speaks of the personalized attention and care provided to customers (Parasuraman et al., 1988).

1.7.1.4 Responsiveness

According to Parasuraman et al. (1988), responsiveness is a component of service quality that describes how eager service providers are to help clients and offer timely service.

1.7.1.5 Reliability

According to Parasuraman et al. (1988), reliability is the ability of service providers to perform tasks accurately and dependably.

1.7.2 Customer perceived value

Zeithaml (1988) defined customer perceived value as the consumer's overall assessment and appraisal of the utility of a service based on their experience.

According to Chang and Dibb (2012), cpv is costs and benefits, noting that individuals may perceive value differently based on their unique perspectives.

1.7.3 Customer Satisfaction

Based on a literature analysis, customer satisfaction been described in a number of ways. Customer satisfaction is defined by Churchill and Surprenant (1982) as the discrepancy between both expectations before and after a transaction.

Oliver (1997) asserts that client happiness is the result of comparing expectations of consumers and how they see the products or services they obtain.

1.7.4 Loyalty

Customer loyalty, according to Oliver (1997), is a strong dedication to consistently repurchase, repatronize preferred product, notwithstanding potential switching behavior caused by marketing campaigns and situational factors.

What is meant by loyalty is a measure of factors such as conversion, recommendation, and repurchase intention (Zeithaml, Berry, and Parasuraman, 1996).

1.7.5 Ability to Take Care of Oneself

Ability to take care of oneself refers to the continuous and specific actions individuals take to maintain their life and health. It is a positive force that promotes health, prevents and controls diseases, and supports self-medication and independent living. Ultimately, self-care ability is the capacity to sustain one's own life (Yan, Su, and Wang, 2024).

Chapter 2

Theory and Related Document and Research

Chapter 2 elaborated on the relevant theoretical foundations, definitions and dimensions of independent variables, as well as their interrelationships.

2.1 Theoretical Foundations

2.1.1 Service Quality

The principle of perceived excellence in customer service was developed in the early 1980s. It became widely used in research related to service quality. During this period, American marketers developed the SERVQUAL model.

The quality of the service is determined by the discrepancy between what clients actually receive and what they expect. Exceeding customer expectations is necessary for delivering excellent service. This approach sets the foundation for exceptional service delivery.

The SERVQUAL model is calculated as: $\text{SERVQUAL score} = \text{perceived service score} - \text{expected service score}$. It classifies service quality into five dimensions: tangibles, reliability, responsiveness, assurance, and empathy. For each item on the questionnaires, users are asked to score the least permissible value, actual emotional value, and predicted value. There are several questions in each level. Additionally, to create the service quality score, a comprehensive calculation and customer ratings are employed, which is derived from the identification of 22 precise and pertinent components that make up a questionnaire survey.

This paradigm has gained widespread acceptance among academics and managers in recent years. The discrepancy hypothesis serves as the foundation for the model, which focuses on the discrepancy between what clients believe and what they anticipate from a service provider.

Prototype assesses quality of various services received by clients. To comprehend the target's requirements and viewpoints the means to manage and

assess service quality, a lot of the service business uses the SERVQUAL model. An organization can apply the SERVQUAL approach to find out how its staff members feel about the caliber of the services they receive, thereby identifying areas for improvement.

One crucial tool for evaluating service quality is the SERVQUAL mode, carrying out qualitative and quantitative assessments, and comprehending how customers view the services they receive, claim Mohedano Torres et al. (2023). It also records their thoughts and recommendations for further development in a number of areas, as well as employees' perceptions of expectations and service delivery.

Because of the significance of service quality in the service sector, many scholars have examined the characteristics of services across a range of industries, including banking, auto repair, hotels and guesthouses, healthcare, and telecommunications. Businesses such as banks, have used SERVQUAL to assess they offer to their clientele. Among the most contentious topics in the field, according to Alemu (2023), has been the reliability of the SERVQUAL scale, a tool for evaluating the quality of services.

2.1.2 Customer perceived Value

The CPV is crucial component of evaluating and measuring service outcomes, representing a comprehensive evaluation of the services provided. This research question is particularly important in elderly care, as it encompasses multiple factors encompassing social, emotional, and functional values, all of which have an impact on their contentment and service loyalty.

As illustrated in the customer perceived value model in Figure 2.1, the assessment of senior care services' perceived worth can encompass three aspects: emotional, social, and functional worth.

The usefulness, effectiveness of service are evaluated by the functional value, including whether it meets the basic needs of customers and whether it has practical functions that improve the quality of life.

When it comes to senior care services, the assessment of functional value encompasses not only the service's material components, like age-appropriate facility

design, but also the effectiveness and reliability of the service delivery procedure (Kuo et al., 2013).

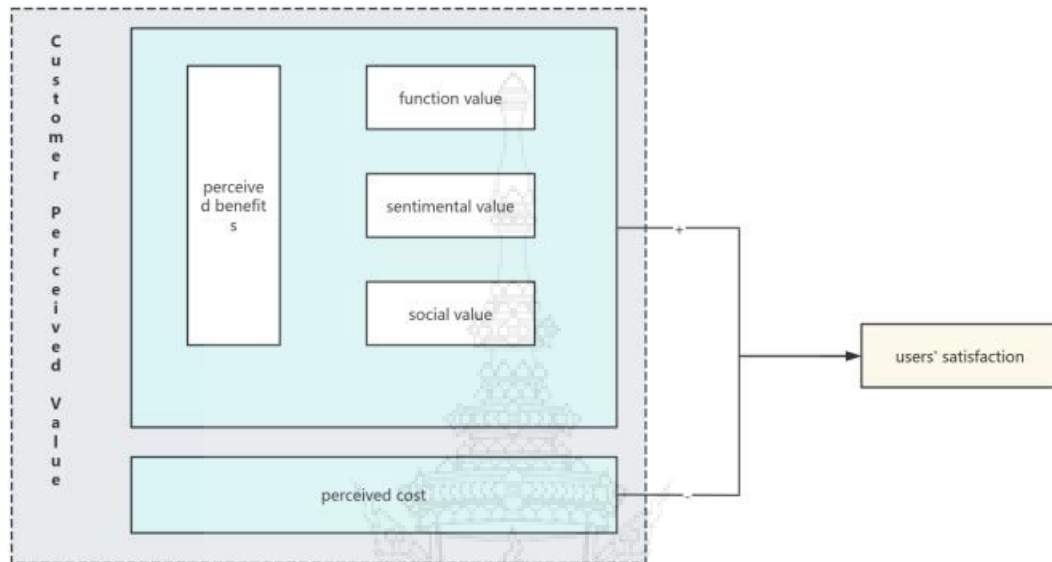


Figure 2.1 Customer perceived value model

The influence that services have on clients' social standing and sense of accountability is what gives them social worth. The selection of specific elderly care services may reflect the values of older adults and their families, as they may assess how this choice influences their image among friends and broader social networks.

Sentimental value is reflected in the extent to which the service provides a sense of security, respect, and belonging for the elderly. This emotional connection is a key factor in maintaining and enhancing long-term customer satisfaction and loyalty. This study will look into the connection between perceived value by customers and across its three dimensions is impacted by the various facets of service excellence. Research findings will improve service quality to satisfy the wide range of client needs.

2.1.3 Customer satisfaction

One important indicator that shows how a consumer feels about a product or service is customer satisfaction, demonstrating extent to which expectations and actual experience align. Different countries have different frameworks for measuring satisfaction, such as the American Productivity Index (ACSI), the European Customer Satisfaction Index (ECSI), the Swedish Customer Satisfaction Barometer (SCSB), and the Chinese Customer Satisfaction Index (CCSI).

Study of service quality in China's private senior care facilities using CCSI methodology is highly appropriate for several reasons. First, the CCSI is a well-established and culturally adapted framework specifically designed to gauge client happiness in China, making it more relevant than examples from the West include ACSI. Second, the CCSI incorporates unique dimensions of loyalty, perceived value, and quality of service, which are essential for comprehending the intricate relationships of elderly care services. In this research, we made reference to the CCSI model for customer satisfaction, as shown in Figure 2.2.

Through in-depth research on these models, this study proposes a customer satisfaction measurement index applicable to services for private senior care in China, with the intention of more effectively evaluate and improve service levels (Lai et al., 2012).

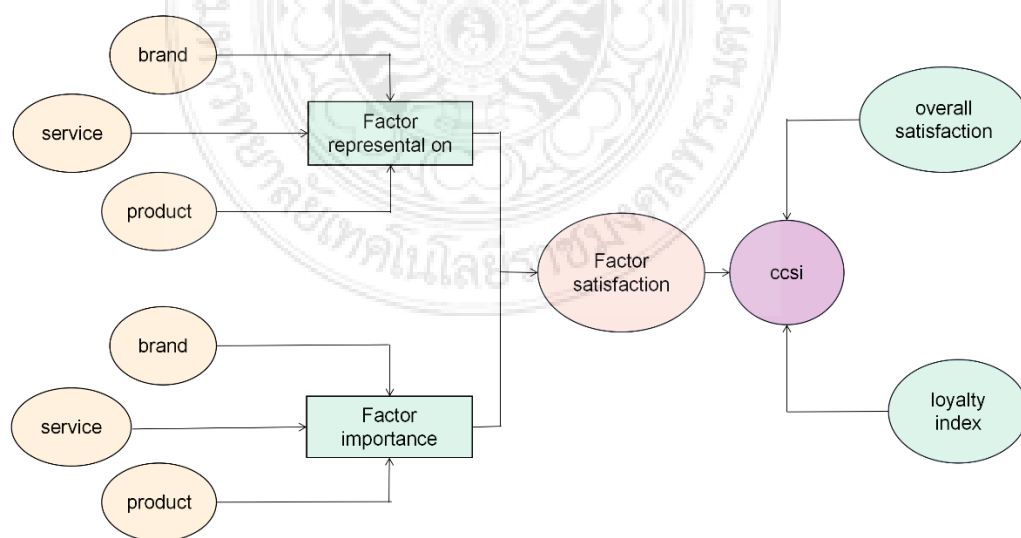


Figure 2.2 Chinese Customer Satisfaction Index Model (CCSI)

2.1.4 Loyalty

Customer loyalty is the steady commitment to a product, service, or brand that is shown by recurring purchases and a readiness to refer others to it. In the elderly care industry, loyalty is reflected not only in elderly customers or their families continuing to choose the same service provider but also to spread favorable rumors about the organization (Lai, 2014). Loyalty is closely linked to elements include consumer perception, perceived value, service quality, and satisfaction. Figure 2.3 depicts a two-dimensional model of loyalty, which illustrates how loyalty develops over time and as service interactions deepen. Repeat business and recommendations from friends and family are the basic manifestations of loyal customers; therefore, improving customer loyalty is a primary objective for older care service providers. Customer loyalty can be enhanced by meeting or surpassing client satisfaction, improving perceived value, and providing high-quality services.

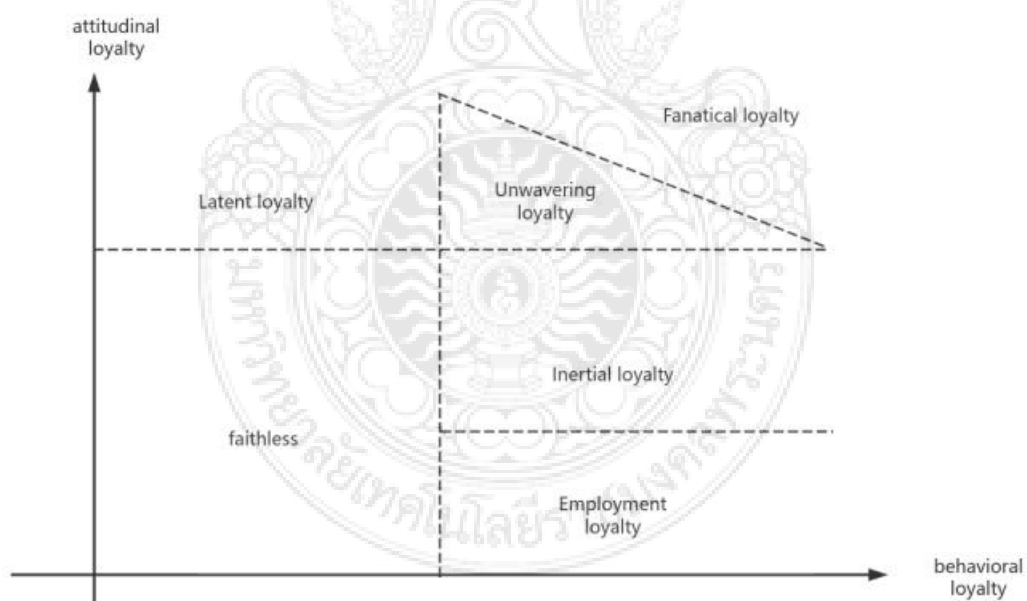


Figure 2.3 Two-dimensional model of loyalty

2.2 Core Concept and Dimensions

2.2.1 Service quality

2.2.1.1 the idea of high-quality services. Several earlier studies have confirmed the concept of service quality and its effects. According to the definition of service quality proposed by Parasuraman et al., service quality is a comprehensive, long-term evaluation concept that compares the services that a customer actually receives with those that they anticipate. The 5 factors that influence customer perceptions of tangibility, High-quality services have confidence, reliability, responsiveness, and empathy (Parasuraman et al., 1988).

2.2.1.2 The dimensions of SQ. Quantify service quality, Dehghanpouri et al., (2023) proposed models according to SERVQUAL measurement, integrating dimensional categories of responsiveness, empathy, certainty, tangibility, and dependability. These theoretical frameworks, which have their roots in literature, explore how customer satisfaction and service excellence are related and employed to investigate various theoretical perspectives.

Providing a reliable and practical tool for assessing service quality in specific service sectors is the primary objective of service quality. Later, this framework was improved to include five dimensions: tangibleness, assurance, responsiveness, dependability, and compassion (Parasuraman et al., 1988). The 5 aspects of SQ are utilized to gauge the caliber of services provided by different sectors, encompassing government, finance, logistics and transportation, healthcare, aviation, education, and hospitality and cuisine (Shetty et al., 2022).

(1) Tangible

Examples of tangible facilities include symbols, attributes, availability, spaciousness, cleanliness, equipment or instruments for providing the service, as well as how the staff members look. The word "tangibles" refers to the physical appearance of elements such as machinery, buildings, materials, as well as employees (Parasuraman et al., 1988). Primarily refers to staff, and direct interactions that occur with clients during a session. Research indicates that tangibility is a critical dimension for evaluating service quality.

(2) Assurance

Assurance is concern, confidence, company to relate to its customers. This necessitates providing assurance regarding the security, reliability, and creditworthiness of services. When customers receive services, protecting their requirements and interests is a primary concern. Service providers foster consumer confidence by implementing transparent assurance measures, establishing a professional image, and elevating their brand reputation. In terms of consumer experience, reliability is the capacity to provide services as agreed upon, without faults or errors (Zeithaml et al., 1988).

According to Parasuraman et al. (1988), the assurance component of service quality assesses a worker's expertise, politeness, and knowledge in addition to capacity to instill confidence and trust in clients.

(3) Responsiveness

Responsiveness refers to a business's ability and readiness to help clients and deliver timely service. Research indicates that readiness to deliver necessary services efficiently and greatly affects client happiness at any given moment.

(4) Reliability

A good or service is said to be reliable if it can consistently fulfill its promised (Parasuraman et al., 1988). This concept represents an important aspect of service quality that shows how well the service provider can offer services according to established standards and within specified timeframes. Furthermore, Martin (2016) emphasizes that reliability in customer experience specifically refers to the consistent delivery of services as promised, without defects or errors.

(5) Empathy

The capacity to give each consumer personalized attention and care is referred to as empathy, particularly during service delivery. This component of service quality highlights how services can be made more individualized and human (Parasuraman et al., 1988). Service providers must have it to comprehend the needs of their clients and deliver customized service experiences. This requires service

personnel to be capable of comprehending and respecting customers' perspectives, as well as providing personalized services.

2.2.2 Customer Satisfaction

2.2.2.1 The notion of client contentment. Customer satisfaction refers to the satisfaction and contentment clients feel after subjectively assessing services, which entails contrasting their expectations before and after the service with their opinions of its delivery (Bodet, 2008). Research demonstrates that Service quality has a significant and positive impact on overall customer satisfaction. Marketing managers should recognize the connection between attitudes and customer pleasure, plans to repurchase, and complaint behavior, as the aforementioned factors significantly affect how other customers behave.

2.2.2.2 The dimensions of Customer Satisfaction.

(1) Expectation of customer

Customer expectations refer to consumers' subjective beliefs or anticipations about a product or service's value, quality, service, price, and other attributes prior to purchase or consumption (Rust and Oliver, 1994). Customers develop specific expectations about product or service quality prior to purchase. These expectations encompass three key dimensions: (a) customer-oriented expectations about how well a product or service satisfies particular needs, (b) expectations for overall quality (Gera et al., 2017), and (c) reliability expectations regarding the likelihood that a product or service will fail.

(2) Perceived Quality

The subjective assessment of the standard of a product or service by customers is referred to as perceived quality. The concept emphasizes consumers' emotional responses, experiences, and satisfaction levels during product or service usage. Perceived quality serves as a comprehensive measure that incorporates customers' expectations, needs, psychological perceptions, and emotional responses. Perceived quality can be quantified through the analysis of customer evaluations and feedback (Anderson, 1973).

(3) Brand Image

A brand's image is a manifestation of the personality traits that in the marketplace and in the public's mind, a business or its brand displays which represents the public's assessment and familiarity with the brand. According to Wu (2011), quantitative methodologies can be utilized to assess brand image, with brand awareness and brand reputation being the most frequently employed metrics for evaluating brand image.

2.2.3 Customer perceived value

2.2.3.1 The concept of CPV. CPV refers to consumers' subjective sentiments about the advantages and satisfaction that products or services can provide. A crucial element is the perceived value by the customer in consumers' purchasing decisions and can significantly influence their loyalty and future purchases (Yang and Peterson, 2004). The four primary aspects of customer value that this study proposes are perceived sacrifices, functional value, emotional value, and social value. Each of these aspects may have a distinct role in the comprehension of the client.

2.2.3.2 The CPV dimensions.

(1) Functional value

The ability of a product or service to meet the fundamental needs and expectations of customers is referred to as functional value, as well as to solve problems or provide convenience. It includes how well a product or service works, and as this value increases, the product or service becomes more effective at satisfying and retaining customers. The efficiency and effectiveness of a service are key indicators of its functional value. When purchasing a service, customers often expect prompt problem resolution or access to necessary support. Therefore, the functional value of a service depends on its ability to deliver reliable, accurate, and efficient solutions.

(2) Social value

The social value of a service is defined as its positive impact on society, the environment, or others. In contemporary society, customers are increasingly considering the social responsibility and sustainability of products or

services when making purchasing decisions. Consumers often prefer products or services that demonstrate higher social value. There are various ways to showcase the social value.

(3) Emotional value

The ability of a business to satisfy the emotional demands of its clients is referred to as emotional value and provide them with comfort, delight, or satisfaction. One important component of a client experience is its emotional worth that can enhance consumers' emotional connection and loyalty. Emotional value can be conveyed through the design, appearance, brand image, and other distinctive characteristics of a product or service.

2.2.4 Loyalty

2.2.4.1 The idea of loyalty. Loyalty refers to the level of client loyalty. Loyalty reflects the extent to which customers develop an attachment to a company's products or services, establish preferences for them, and repeatedly purchase them over an extended period. A number of factors influence this behavior, including quality, price, service, and other related elements.

2.2.4.2 The dimensions of loyalty. Behavior intention is a metric that indicates the likelihood of repurchase and recommendation for a product, which is indicative of consumer loyalty.

(1) Repeated Purchase Intention

The devotion is directly proportional they make a purchase. Conversely, low loyalty is indicative of a lack of loyalty. Repeated purchases of various products under a company's brand, particularly for companies that offer a diverse range of products, are indicative of a high level of customer loyalty (Fornell et al., 1996).

(2) Recommendation intention

Recommendation intention is the extent to which an individual is inclined to endorse a service to others. In the field of management research, a person's opinion of a specific good or service does not solely determine their willingness to recommend; it also depends on their trust in and satisfaction with the

company or organization providing those products or services (Subrahmanyam, 2017). The degree of willingness to recommend directly influences the acquisition of potential consumers and the company's market expansion.

2.3 Related Research and Hypothesis

2.3.1 The relationship between customer satisfaction and service quality

It is the happiness and contentment of the customer that consumers feel when they evaluate services in their own subjective way. It entails contrasting post-service assessments of service delivery with pre-service expectations. Since customer satisfaction affects attitudes, repurchase intentions, and complaints, marketing managers should be aware of how it influences the behavior of other consumers (Bodet, 2008). Existing research indicates that customer happiness is strongly and favorably impacted by the general caliber of services.

2.3.1.1 Tangible and Customer Satisfaction. According to Munusamy et al. (2010), tangibles include the staff's conduct, the availability of brochures and pamphlets, and the smooth setup of facilities needed to service clients that influence customer satisfaction. Research has demonstrated that physical elements significantly influence consumer satisfaction (Selvakumar, 2016).

Visual elements, such as the actual facilities, their evaluation of the quality of medical care was significantly influenced by the equipment and the look of the physicians, nurses, and support staff. The study's findings demonstrated a strong correlation between tangibles and patient satisfaction. Feng (2023). Customer satisfaction at South Korean wellness centers is positively impacted by tangible features (Riswanto and Kim, 2023). According to recent studies, passenger happiness is directly, favorably, and significantly impacted by the service quality features of airport and airline tangibles (Lippitt et al., 2023). Client satisfaction is more likely to rise in senior care facilities run by private enterprises that have concrete features.

2.3.1.2 Customer satisfaction and assurance. An employee's ability to build trustworthy relationships with clients and their level of expertise, civility, and knowledge are all revealed by the assurance component of service quality.

Parasuraman et al. (1988) define assurance as the capacity of employees to instill confidence and trust in customers, which significantly influences the degree of satisfaction. A customer's total happiness with the services they receive is strongly correlated with assurance, according to research (Krishnamurthy et al., 2010). Similarly, a Turkish hospital's field testing showed a strong correlation between client happiness and assurance (Kitapci et al., 2014).

The survey discovered that assurance had the most influence on customer satisfaction when it came to sports fitness center services. This suggests that customer happiness is more significantly impacted by a higher degree of assurance in service quality (Heng and Kim, 2023). Assurance had a beneficial effect on customers' overall satisfaction with the package delivery services provided by logistics companies (Sobaih and AlSaif, 2023). It is more likely that customer satisfaction would grow in privately operated senior care centers with guaranteed service quality.

2.3.1.3 Responsiveness and CS. Pakurár et al. (2017) state that responsiveness pertains to the way in which service providers utilize their staff to meet the needs of their clients. Receiving individualized care increases customer happiness, and staff members pay more attention to addressing consumer concerns. This dynamic leads to a significant improvement in customer satisfaction. According to studies, Reactivity has a favorable effect on customer satisfaction. Reactivity has a favorable effect on customer satisfaction.

Responsiveness is the capacity of service providers to deliver services to customers in a timely manner. Response time has a major and beneficial impact on customer satisfaction at Vietnamese commercial banks (Phi and Huong, 2023). Similarly, reactivity was determined to be the most important element for bus riders in the Occidental Mindoro province amid the COVID-19 pandemic epidemic, boosting client satisfaction considerably (Jou et al., 2023). The findings demonstrate that client satisfaction correlates directly and significantly impacted by aspects of SQ, like punctuality (Soares et al., 2023). Therefore, responsive service quality has a higher chance of increasing customer satisfaction in privately operated senior care facilities.

2.3.1.4 Reliability and Customer satisfaction. It has to do with the capacity of a product or service to perform reliably over a long length of time without breaking down, malfunctioning, or interfering. Customer demands and expectations are constantly met by a dependable product or service. An empirical study found that the reliability component of service quality has a favorable effect on customer satisfaction (Parasuraman et al., 1991).

Reliability refers to provide accurate and consistent services (reliable promises or accurate information as requested by clients). When researchers assessed the standard of care that Foreign medical tourists found that reliability has a favorable impact on customer satisfaction.

Researchers found that dependability had a positive effect on client satisfaction when assessing standard medical care experienced by foreign medical tourists.

According to research, reliability has a beneficial impact on patient satisfaction with medical treatments during COVID-19 (Kim and Kim, 2023). Similarly, Baquero (2023) found that in retail settings, such as supermarkets and hypermarkets, the most important element affecting client happiness is dependability. There is a greater chance of customer satisfaction when private-run care facilities for the elderly provide dependable, high-quality services.

2.3.1.5 Empathy and Customer satisfaction. Being sympathetic entails listening intently in social situations, figuring out what clients want and need, being amiable and kind, and directly meeting their needs. Additionally, research has demonstrated that knowing what customers anticipate Customer satisfaction is significantly impacted by providing customized services and staying away from competitors. Empathy is the capacity of service providers to understand and care about the needs and interests of their customers.

The study's conclusions demonstrated that in the principal Islamic banks in the Sultanate of Oman, client satisfaction is strongly and favorably impacted by empathy. Research indicates that banks ought to give empathy top priority because it significantly influences customer satisfaction (Fida et al., 2020). Similarly, in emerging

economies, According to Wang, Cheng-Kun et al. (2023), employee empathy directly affects consumer satisfaction in non-banking financial organizations. In private care facilities for the elderly, customer satisfaction is consequently more likely to rise when there is empathy in the caliber of the services offered.

As a result, customer happiness and service quality are central to marketing theory (Spreng, MacKenzie, and Olshavsky, 1996). Two essential elements that help a company get a competitive edge are quality of service and client satisfaction (Commer et al., 2019). Although The quality of the services, client happiness, and intention to continue were not significantly correlated, the study did emphasize the significance of each of the following variables (Masitenyane and Mokoena, 2023). The vast majority of empirical research has shown that there is consensus regarding the direct correlation between service quality and customer satisfaction.

Sun and Pan (2023) state that, consumer satisfaction Service quality has a big influence on self-service fitness centers. Satisfaction and quality of services is favorably connected. Because of the improved service quality, there is a greater chance that customer happiness will increase offered by privately operated facilities for senior care. In view of the aforementioned theories and studies, we proposed the following theory:

Hypothesis1(H1): Customer satisfaction is positively impacted by the quality of services provided by private care services for the elderly.

2.3.2 Connection between Customer Perceived Value and Service quality

Marketing and service excellence are dynamic and intertwined. A complex idea, customer perceived value Having undergone extensive analysis in several academic disciplines, including marketing, psychology, sociology, and economics. Perceived value by customers and service quality are significantly correlated (Bashir et al., 2020).

Through empirical study and the creation of a consumer value perception model for, wang and Yu demonstrated that customers' perceptions of value were positively impacted by service quality (Wang et al., 2016). Similarly, a high degree of

service quality improves customers' opinions of a good or service's worth, according to research by Ali et al. (2014). When customers Obtain exceptional service quality, they are more likely to perceive value and feel satisfied.

The relationship between customer opinions about the quality of services and value in relation to online banking was investigated by Bashir et al. in 2020. According to their research, consumers who use e-banking believe that their perceived worth rises with better service quality. In an empirical investigation, Chen and Hu (2010) discovered a positive relationship between consumers' perceptions of value and service quality in the marketing industry.

Most empirical research that has looked at the relationship between customer perceived value and service quality have concluded that service quality positively affects consumers' perceived value.

Hypothesis2(H2): The level of service quality provided by private elder care services has a positive effect on customer perceived value.

2.3.3 Relationship between Service Quality and Loyalty

Within the field of marketing literature, the topic of service quality has become increasingly important. According to Zeithaml et al. (1996), "service quality" refers to the general satisfaction that a client has with a supplier's services. Scholars contend that clients' expectations and the services offered by service providers should coincide. Thus, in order to improve their marketing efforts, service providers need to assess the service at every crucial point in its delivery. Research indicates that the best indicator of loyalty is service quality. Higher service leads to increased transactions and longer-lasting client relationships.

According to research, service quality significantly influences consumer loyalty at Jordanian laptop dealer firms (Abu Hussien et al., 2023). As the quality of services offered improves, so does brand loyalty. This study looked at 4 aspects of the quality of services impact on consumer loyalty (Yum and Yoo, 2023). Additionally, Service quality is crucial, according to Hassan et al. (2020), in shaping behavioral intentions and user loyalty toward Self-Service Technologies (SSTs).

Hypothesis3(H3): Loyalty is positively impacted by the quality of the private care services provided to the elderly.

2.3.4 Relationship between Customer Perceived Value and Satisfaction

"A consumer's overall assessment of the utility of a product or service based on research defines consumer perceived value as "their perception of what is given and what is received" (Zeithaml, 1988). The perceived value of the customer and the caliber of services are significantly correlated.

According to Wang and Yu (2016), empirical research demonstrates that perceived value positively correlates with service quality. The researchers further emphasized that delivering high-quality services could enhance consumers' opinions about the worth of a good or service. They maintained that outstanding service quality raises client satisfaction and, in turn, perceived value. The study specifically looked at how the relationship between service quality and perceived value is situated within the framework of online banking.

Research has demonstrated that SQ significantly enhances consumers' perceptions of value in e-banking contexts. Specifically, The five aspects of service quality—responsiveness, assurance, empathy, dependability, and tangibles—have a direct impact on customer perceived value (CPV). Consequently, these five SQ dimensions should serve as fundamental measurement criteria when examining the connections among loyalty, consumer satisfaction, and CPV.

Customers' expectations for using the application are compared with the perceived value based on their experiences and the information provided. This is known as customer perceived value. Customer happiness was indirectly impacted by experience quality through the consumer experience. This implied that the importance of consumer perceived value, which extended beyond a straightforward assessment of the perceived experience, was crucial to the establishment of client contentment.

The findings of Subali Patma et al. (2021) are consistent with satisfaction is greatly increased when customers sense value. Through the use of the Kano quality attribute model, Zhang Zihan (2023) examined the relationship between customer

satisfaction and customer-perceived value (CPV). The findings showed that in the blind box sector, CPV positively affects consumer satisfaction.

Hypothesis4(H4): Customer satisfaction with the private senior care service is positively impacted by customer perceived value.

2.3.5 Relationship between Customer Perceived Value and Loyalty

Customers' total evaluation of the utility of a product is determined by its perceived value based on what is provided and received. Furthermore, Chang and Dibb (2012) highlighted that CPV is a trade-off between cost and benefit, with consumers giving the benefits they receive differing weights. Brodie notes that the concept of customers' perception of value includes perceptions of customers that emerge from the compromise made between the sacrifices and the rewards (quality of the product or service) received (price or non-monetary expenses) suffered when acquiring a thing or service. A trade-off like this could affect client loyalty. Therefore, it is necessary to think about perceived value as a precondition for fostering customer loyalty (Brodie, 2017).

According to the study, young adults' perceived value of taking part in South African Black Friday customs increases their dedication to retail marketing (Svotwa et al., 2020). In order to comprehend the elements that impact loyalty within the context of fitness facilities and the connections between CPV components, loyalty was investigated among Turkish exercise patrons.

Additionally, the study revealed a favorable correlation between loyalty and perceived value (Sevilmiş et al., 2022). Furthermore, perceived value was found to influence loyalty (Lin, 2023). In light of the aforementioned findings, we put out the following hypothesis:

Hypothesis5(H5): Loyalty benefits from customer perceived value.

2.3.6 Relationship between Customer Satisfaction and Loyalty

Since it was first introduced by American academics in the 1960s, customer happiness has been a major focus of scholarly research and is a crucial aspect of marketing. Cardozo was the first to advance the empirical study of customer satisfaction, who argued that there are two main aspects that affect consumer

satisfaction: the actual products or services that clients receive, as well as their expectations about them.

A major factor in determining customer loyalty is customer happiness, which is impacted by both the acquisition process and the caliber of goods or services (Cardozo, 1965). The connection between customer happiness and loyalty is a topic of great interest among academic researchers. Building and maintaining strong customer connections is crucial since loyalty is directly impacted by customer happiness.

According to Albarq (2023), clients are more likely to remain loyal to a bank and recommend it to others if they are satisfied with its products or services. Similarly, research by Huang and Nuangjamnong (2023) indicated that on Chinese e-commerce platforms, consumer satisfaction positively influences customer loyalty. The following hypothesis is put out:

Hypothesis6(H6): Customer satisfaction with the private senior care service has a favorable impact on loyalty.

2.3.7 Value Perceived by the Customer as a Mediator

Research has demonstrated that customer loyalty and the caliber of the services are directly correlated, however perceived value frequently acts as a mediating factor in this relationship, which acts as a bridge between the two constructs. When it comes to perceived worth, Cronin, Brady, and Hult (2000) predicts loyalty more accurately than just service quality, emphasizing its mediating role. Their findings suggest that customers are more inclined to stick around if they believe the product is worth more, even if service quality fluctuates. The contextual elements that affect this mediation have been the subject of additional research. For instance, Sirdeshmukh, Singh, and Sabol (2002) found that trust and commitment amplify the mediating function of perceived value, particularly in long-term customer relationships. Additionally, Wang, and Yang (2020) demonstrated that perceived value acts as a mediator in the link between service excellence and loyalty across various industries, including telecommunications and healthcare. Their research highlights the universality of this mediation effect. The literature consistently supports the role of

mediation of customer's perception of the value of the connection between loyalty and service quality. We put forth following hypothesis on the aforementioned research:

Hypothesis7(H7): Through consumer perceived value, service quality positively impacts loyalty.

2.3.8 The role of customer satisfaction as a mediator

Empirical research has consistently demonstrated that Customer pleasure mediates the link between loyalty and superior service. For instance, Cronin and Taylor (1992) established the SERVPER paradigm, which emphasizes performance-based measures for assessing SQ. According to their research, service quality immediately raises client pleasure, which encourages loyalty. Similarly, Anderson and Sullivan (1993) discovered that association between service quality and intentions to repurchase is mediated by customer satisfaction, highlighting how long-term consumer loyalty is fueled by customer happiness.

Further studies have expanded on these findings by examining contextual factors that influence this mediation. For example, the connection between loyalty and service excellence in high-contact services is totally mediated by customer satisfaction, according to Caruana's (2002) investigation into the function of customer satisfaction as a mediator in service sectors. Zeithaml, Berry, and Parasuraman (1996) also emphasized the significance of customer satisfaction in cultivating dedication and confidence, both of which are necessary for the growth of loyalty.

Hypothesis8(H8): Through client happiness, service quality positively impacts loyalty.

2.3.9 Mediating factors include customer satisfaction and perceived value

The literature on marketing and service management has extensively studied the connection between customer loyalty and service excellence, with particular attention paid to the mediating roles of customer pleasure and CPV. According to Parasuraman, Zeithaml, and Berry (1988), service quality is determined by the customer's evaluation of the quality of the service. It is key driver of loyalty.

However, its impact is often indirect, mediated by contentment and perceived worth, which act as critical mechanisms linking service quality to loyalty.

Recent research has examined the combined impacts of perceived worth and satisfaction as mediators. As an illustration, Sirdeshmukh, Singh, and Sabol (2002) proposed a dual-mediation model, where Perceived value and satisfaction operate as sequential mediators on the relationship between customer satisfaction and loyalty. Emphasize the importance of creating value-driven and satisfying service experiences to foster long-term loyalty. The following theory was put up in light of the aforementioned research:

Hypothesis9(H9): Customer satisfaction and perceived value are two ways that service quality influences loyalty.



Chapter 3

Research Methodology

Chapter 3 explained how customer loyalty, satisfaction, and perceived value are all impacted by service quality. For this investigation, the research hypothesis is predicated on the nine components of service quality. The characteristics being examined are loyalty is the dependent variable and the quality of the services, customer satisfaction, and Value perception among customers is an independent variable. Information was gathered by sending questionnaires to residents of privately run senior care facilities in Harbin, China. This study's research methodology employed a number of techniques and methods, including information discovery, selection, management, and evaluation.

3.1 Research Design

3.1.1 Questionnaire

The survey questionnaire was the method used for the investigation. In light of the real circumstances surrounding China's aging population, we chose survey participants who were over 60. Over 20% of China's population is over 60 years old and has entered the elderly care stage.

The questionnaire was developed based on three processes: a content validity test, exploratory research.

Each factor's components have been employed as variable indices in the research questionnaire based on the actual study. Customer satisfaction serves as the mediator, while customer loyalty is the dependent variable.

Regarding variable indices, these informed specialists offered enlightening comments. They suggested making the questionnaire's questions more limited. As a result, appropriate changes were made. 48 items were approved for use in the survey, comprising 38 items on independent variables, 4 items concerning information pertinent to the institution, and 6 items about demographics.

There are three sections to the questionnaire:

Part1 collects demographic information such as monthly income, gender, age, marital status, and level of education, with the goal of determining the fundamental traits and history of the respondents.

Part 2 gathers institutional information regarding elderly care facilities, including the number of employees, years of operation, and government support status.

Part3, particular metrics are used to evaluate. A Likert scale with five points is used to gauge respondents' degrees of loyalty and happiness as well as their perceptions of the services and value offered by the care facilities.

The final survey comprised four institution-related questions, six demographic questions, twenty-two questions about service quality (the five dimensions of SQ), six questions about customer satisfaction, six questions about customer perceived value, and four questions about loyalty. The five degrees of a Likert scale are strongly disagree, disagree, neutral, agree, and strongly agree. Table 3.1 displays the service quality measuring scale.

Table 3.1 Service quality measurement scale

Potential Variable	Measurement Problem Items	Title Source
Tangibles	The organization offers excellent fundamental facilities for public service	(Lee and Cheong,2017),
	The institution's surroundings are pleasant, hygienic, and clean, and transportation is practical	(Parasuraman and Zeithaml,
	The establishment serves wonderful and delectable food	1988),
	The service price is reasonable and acceptable	(Kim and Kim,2020), (Seieun and Hak-Seon,2023)

Table 3.1 Service quality measurement scale (continued)

Potential Variable	Measurement Problem Items	Title Source
Tangibles (continued)	The configuration is reasonable, and there are enough service staff	
	The institution's staff can deliver care in compliance with specific standards and norms	
Assurance	Relatively high medical expertise is possessed by the institution's personnel	
	The environment was peaceful, and the institution's service workers took the effort to look after the elderly	
	The staff of the institution are professionally trained	
	For elderly patients who are ill to promptly seek medical attention	
Responsiveness	The institution's staff members provide individualized services and are aware of the needs of the elderly	
	On-time delivery of eating, cleaning, and bathing services	
	Your interests can be met in time	
Reliability	The facility may create customized rehabilitation programs based on the demands and physical condition of the elderly	

Table 3.1 Service quality measurement scale (continued)

Potential Variable	Measurement Problem Items	Title Source
Reliability (continued)	The facility collaborates with the nearby hospital, and senior citizens' access to healthcare is unhindered	
	Institutions receive substantial financial support from the government, and social organizations are very concerned about the elderly	
Empathy	The organization runs steadily and securely	
	Institutions routinely provide psychological therapy services to older adults in order to preserve their mental health	
	You are frequently contacted by the institution's staff to learn about your spiritual requirements arranging leisure and entertainment activities, such reading, online conversation, and so forth Volunteers frequently visit the community to offer consolation, and the results are positive	

The measurement scale for customer perceived value is displayed in Table 3.2.

Table 3.2 Customer perceived value measurement scale

Potential Variable	Measurement Problem Items	Title Source
Functional value	The institutional infrastructure greatly facilitates the lives of the elderly service provided by the institution is very timely	(Alhider, 2018), (Kuo et al., 2013)

Table 3.2 Customer perceived value measurement scale (continued)

Potential Variable	Measurement Problem Items	Title Source
Social value	The institution is reliable and trustworthy	
	The social renown of the institution is relatively high.	
Emotional value	The elderly received good service from the institution's workers	
	Seniors are kept happy by the services offered by the institution's employees	

Customer satisfaction is measured using the scale shown in Table 3.3.

Table 3.3 Customer satisfaction measurement scale

Potential Variable	Measurement Problem Items	Title Source
Expectations of customers	The service of the institution fulfills my expectations	The CCSI model, (Ge and Yuan,2021),
	An employee of the institution has high understanding of my requests	
Perceived quality	The facilities and equipment meet my needs	(Woodside and Frey,1989), (Tuncer and Unusan,2020)
	I am happy with the daily services that the organization offers	
Brand image	I am satisfied with the institution's good social reputation	
	I find the service concept satisfactory	

In Table 3.4, the loyalty assessment scale is displayed.

Table 3.4 Loyalty measurement scale

Potential Variable	Measurement Problem Items	Title Source
Repeated purchase	I want to stay in the current facility and continue living there	(Bader,2019), (Woodside and Frey,1989).
	I have a lot of faith in the organization and am quite pleased with the services it offers	
Recommendation intention	I have no complaints about my institution I would like to tell my friends about this current establishment	

In addition to capturing essential demographic characteristics, the survey instrument collects valuable information about respondents' interests and behavioral patterns. The Likert scale facilitates the establishment of quantitative analyzing data to identify the relationships between independent and dependent variables. The Appendix contains the entire survey questions.

3.1.2 The suitability of the methodology

For this study, descriptive surveying was the approach taken. A combination of inferential statistics and descriptive analysis was used to examine the data. The descriptive survey method was the data processing methodology used. Stated differently, a descriptive survey method was used to collect and analyze the data. Other statistics books also employ the same scientific techniques for data analysis as this one. Standard statistical techniques were used to analyze the data. One instrument for gathering data was a questionnaire.

3.2 Population and Sample

3.2.1 Population

The study population is made up of people who use private senior care services in China.

3.2.2 Sample

Study sample consisted of elderly individuals with adequate expressive abilities, selected from representative Chinese senior care institutions in Harbin that are privately run. To ensure the sample's representativeness of the target population, Likert-scale survey questions and control variable questions were utilized. The quantitative study's relevance and the accuracy of the data obtained from the variables were considered for calculating the sample size. In accordance with Hair et al., (2010), and taking into account the particular circumstances of privately managed senior care facilities in China, the study established a sample size range of 500 to 600 across observational variables. Hair et al (2010) and Comrey and Lee (1992) provided guidelines that were strictly followed in the creation of the questionnaire. Sample size are displayed in Table 3.5.

Table 3.5 Sample count and appropriateness

Quantity	Acceptability
50	Not worthwhile
100	Insufficient
200	Fair
300	well
500	Very well
1000	Excellent

3.3 Pilot Study

To evaluate the appropriateness of the research methodology, a pilot study was conducted, processes, and plans prior to the main investigation. According to Baker (1994), For the purpose of "pre-testing or trying out a research instrument," a pilot study serves as a "small-scale version or trial run in preparation for a major study."

Validity and reliability tests required a pilot study. According to research, a survey is considered valid if it measures the thing it says it would. Validity was achieved because participants understood the questions and did not ask for clarification of any questions. In the pilot study, we distributed 100 questionnaires in 8 selected institutions for the age, and 83 questionnaires were valid.

3.4 Reliability and Validity

Several methods are employed in this study to ensure the validity of the survey instrument before the main investigation. The pilot study established the research instrument's reliability. Next, examine the stability of the research. To evaluate the instrument's reliability, the Cronbach's alpha coefficient is used. The pilot study verified the study's viability, and the participants thought it was worthwhile. The Cronbach's alpha value for each question must be higher than 0.70. Table 3.6 showed the results of reliability.

Table 3.6 Reliability statistics

Dimensions	The Cronbach's Alpha	Number
Tangible	.856	5
Assurance	.785	4
Responsiveness	.878	5
Reliability	.857	4
Empathy	.903	4
Functional value	.909	2

Table 3.6 Reliability statistics (continued)

Dimensions	The Cronbach's Alpha	Number
Social value	.885	2
Emotional value	.863	2
Expectation	.779	2
Perceived quality	.784	2
Brand image	.823	2
Repeated	.886	2
Recommend	.835	2
total	.877	38

The table shows that the scale items have a good dependability coefficient, so the survey data is considered to be reliable.

In quantitative research, validity pertains to the veracity of the study's or research conclusions' ability to accurately measure what has to be measured. Validity in quantitative research is defined as "construct validity" by Wainer and Braun. Which information should be collected and how is determined by the construct, which is the main idea, viewpoint, query, or hypothesis.

In order to guarantee the study's validity, According to Wainer and Braun (1988), quantitative researchers actively look into how structure and data relate to one another using a variety of tests and procedures. The appropriateness of the study is determined by assessing the research instrument's validity and reliability. As Creswell (2009) emphasized, all research must meet validity and reliability criteria to produce valuable and scientifically sound information.

This study additionally evaluated the research instrument's validity using the final sample data. Customers of the typical private care service institutions for the elderly in Harbin, China, who are either unconscious or have limited expressive capacity are included in the sample statistics. In compliance with the specifications of the research, every construct and indicator of the latent variable demonstrates sufficient validity. In this study, the structural equation model (SEM) was employed.

The next chapter goes into great detail about the final sample statistic to determine the validity and reliability of the measurement model.

Convergent validity was assessed through the use of the Average Variance Extracted (AVE) technique. The mean percentage of variance (AVE) between the construct and independent variables is shown. Chin (1998) asserts that substantial convergent validity is indicated by more than 0.5 for the AVE value. Results demonstrated strong validity through AVE analysis.

The establishment of discriminant validity occurs when Higher than the correlations between the variables is the square root of AVE. As stated by Holland (1999), higher values are found for the diagonal elements than for the off-diagonal ones. The discriminant validity was confirmed as all AVE values surpassed the squared correlation estimates.

Bartlett test is performed, and the likelihood that the initial variables had a meaningful link increased with a lower significance level ($P < 0.05$). $0.000 < 0.01$ was how significant the Bartlett test is statistically, and the KMO values were higher than 0.6. In Table 3.7, the KMO and Bartlett tests are displayed.

Table 3.7 KMO and bartlett test

	KMO	Approx. Chi-Square	df	Sig
Bartlett's Test of Sphericity	0.815	10576.825	703	0.000

The table displays data results suitable for factor analysis research.

3.5 Data Collection

Customers of senior individuals with a particular capacity for self-expression who were chosen from typical private care service facilities for the elderly in Harbin, China, provided the data. A questionnaire survey was used in this study, and eight private senior care facilities in Harbin were chosen based on their size. The questionnaire is given out directly to the elderly who are capable of caring for

themselves. The fundamental details of the private care service providers for the elderly are displayed in Table 3.8.

The questionnaire is completed by the children or caretakers who look after the elderly who are unable to care for themselves. Once the questionnaire has been collected consistently, Put the information in the table. Every responder received a comprehensive briefing on the topic from the researcher before requesting that they fill out the surveys. The sample size has been intentionally kept large in order to lower the potential for sampling errors.

We carried out the following thorough data collection while implementing The use of questionnaire surveys to assess the quality of services rendered by private senior care facilities in Harbin, China, and its impact on the loyalty of senior clients:

Customers of eight significant private aged centers in Harbin, China, received the questionnaire. The questionnaire collection time is one week, altogether distributing the questionnaire to 600, the recovery questionnaire to 560, and the recovery rate is 93%. After data cleaning, 40 incomplete or after removing nonsensical responses, 520 genuine surveys were gathered, resulting in an effective response rate of 87%. Information on private facilities that offer senior care services was given in table 3.8, including number of original companies, establishment time, government support, and volunteer services.

Table 3.8 Basic information of the private care service institutions for the elderly

Institution Name	Number of employees	Duration of establishment	Government funding support	Volunteer groups providing services
Harbin Elderly Care Home	17	7	No	Yes
Harbin Xinsong Maoyue Mountain Elderly Care Apartment	54	8	Yes	Yes
Harbin Lehuo Home Elderly Apartment	36	3	No	Yes
Sunshine Dezhong Elderly Care Center	26	3	No	Yes
Harbin Kangle Senior Apartment (Xiangfang District)	21	3	No	No
Ankang International Elderly Care Apartment in Harbin City	29	5	No	No
Harbin Yiyuan Smart Home Care	34	7	No	No
Harbin Hongfu Elderly Apartment	45	8	No	No

3.6 Data Analysis Tools

Inferential statistics and descriptive analysis were employed to analyze the information. The data was processed using the descriptive survey approach. The pertinent data gathered from the survey questionnaire is empirically analyzed using AMOS and SPSS statistical tools. SPSS is an important tool for statistical analysis, such as descriptive statistical analysis, hypothesis testing, regression analysis, etc. Investigating the foundations of the measurement model and the structural equation model is the main goal of AMOS as a statistical analytic technique. In this study, SPSS 21 was used for descriptive statistics, hypothesis testing, and other quantitative evaluations. analysis of paths, analysis of confirmatory factors (CFA), and the examination of mediating or moderating effects were all conducted using AMOS 21.

Examine the relationship between availability variables through data analysis, examine the interaction mechanism, and analyze the level of influence of each variable.

3.7 Statistical Data Used for Analysis

Researchers have developed a method for analyzing statistical data to analyze quantitative data obtained from questionnaires, using statistical data to analyze social science data to align with data and research objectives. This method includes the following three parts:

3.7.1 Descriptive Analysis

Researchers use features or characteristics to describe or characterize information allocation, as well as variables studied based on each set of feature factors, as follows:

3.7.1.1 General Data Analysis of Respondents Includes

Including gender, age, education level, frequency and percentage, and so on.

3.7.1.2 Examination of the variables

Using the Mean (SD), Skewness (SK), Kurtosis (KU) to be used to describe Description Clarify and distribute variables and perform craziness and popularity tests with statistics.

3.7.2 Reference Statistics of Data Collected from Samples

Sample Used to refer to and describe the entire population. The conclusion will use probability to test hypotheses. It has been used by researchers to ascertain the following relationships between the variables under study.

The direction and degree to which variables are associated are shown by the correlation coefficient. If the correlation coefficient (r) equals 0, it means that each independent variable is independent of its corresponding variable. A value ranging from -1 to 1 indicates that every independent variable has a relationship with its corresponding variable. A negative value signifies an inverse relationship, while a positive value indicates a direct relationship. Additionally, criteria are defined to interpret the strength or magnitude of the relationship between variables (Ritcharoon, 2008).

3.7.3 Structural Equation Modeling, Analysis, and Statistics

Modeling: SEM Direct and Indirect Impact Analysis.

According to Kline (2011), relationships can involve passive variables and observational variables, including relationship testing and the consistency of research models based on assumptions and empirical data through structural validity tests. Byrne (2001) further emphasized the importance of determining recognized indices for suitability assessment, as outlined in Table 3.9.

Table 3.9 Criteria for assessing compliance with the model's actual data

Fit Index	Criteria	Reference Source
Chi-Square	$p \geq .05$	(Kline, 2011)
Relative Chi-Square	<2-3	(Kline, 2011)
CFI	>.90	(Byrne, 2001)
TLI	>.90	(Schumacker and Lomax,1996)

Table 3.9 Criteria for assessing compliance with the model's actual data (continued)

Fit Index	Criteria	Reference Source
GFI	>.90	(Byrne,2001)
NFI	>.90	(Byrne,2001)
RMSEA	<.08	(Byrne,2001)
IFI	>.90	(Byrne, 2001)
RFI	>.90	(Byrne,2001)
RMR	<.05	(Byrne,2001)

Symbols used for analyzing data.

Researchers determine the symbols for variables and statistical values, as well as the symbols used to represent these variables and statistical values, to ensure mutual understanding when presenting data analysis results. These symbols are illustrated in Tables 3.10.

Table 3.10 Static symbols and meanings

Symbol	Statistical Data	Significance
\bar{x}		Mean
Std		Standard Deviation
CR		Composite Reliability
*		The Statistical Significance is 0.01
AVE		Average Extracted Variance
SK		Skewness
KU		Kurtosis
r		Pearson Product Moment Correlation Coefficient
IE		Indirect Effects
DE		Direct Effects
χ^2		Chi-square
CFI		Comparative Fit Index

Table 3.10 Static symbols and meanings (continued)

Symbol	Statistical Data	Significance
	df	Degree of Freedom
	GFI	Goodness of Fit Index
	NFI	Normed Fit Index
	TLI	Tucker Lewis Index
	IFI	Incremental Fit Index
	RFI	Robust Fit Index
	RMSEA	Root Mean Square Error Approximation



Chapter 4

Data Analysis Result

Chapter 4 analyzes pertinent surveys from private senior care facilities in China, and loyalty in these institutions, as well as the degree of correlation. This chapter described sample demographics, presented the statistical analysis results related to hypothesis.

4.1 Sample Description

Private senior care facilities in Harbin, China, provided the study's sample. The method of selection was a non-probability convenience sampling methodology, which focused on senior citizens who were readily available and open to doing the survey. The comprehensive sample data is shown in Table 4.1.

Private senior care facilities were used as sampling locations for this study. We were able to connect with the senior citizens residing in these facilities by working together with the administration. Members of the sampling team were involved in the research team, ensuring the effectiveness of the sampling and the quality of data collection.

Table 4.1 Sample information

Characteristics	Category	Number (N=520)	Percentage (%)
Gender	Male	234	45
	Female	286	55
Age distribution	60–70	130	25
	70–80	260	50
	80+	130	25

Table 4.1 Sample information (continued)

Characteristics	Category	Number (N=520)	Percentage (%)
Marital status	Widowed	182	35
	Divorced	78	15
	Married	208	40
	Single	52	10
Education level	High school	130	25
	Junior high school	182	35
	Primary school or below	156	30
	College Degree or above	52	10
Monthly Income (USD)	Fewer than 276\$	104	20
	276\$–552\$	208	40
	552\$–690\$	130	25
	More than 690\$	78	15
Self-Care Ability	Fully Capable	312	60
	Semi-Capable	156	30
	Unable to Self-Care	52	10

With a recovery rate of almost 93%, the research team circulated 600 questionnaires in total, of which 560 were collected. 520 valid questionnaires were held following data cleansing, which entailed getting rid of 40 that had logical flaws or missing information. The effective response rate as a consequence was almost 87%. There is sufficient data support for additional statistical analysis and testing of predictions with this sample size.

There were 55% female participants and 45% male individuals. The age distribution shows 25% in the 60-70 age group, 50% in the 70-80 age group, and 25% in the 80+ age group. In terms of marital status, 10 percent were single, 40 percent married, 15 percent divorced, and 35 percent widowed. Education levels show 30% at or below primary school, 35% at junior high school, 25% at senior high school, and 10% at university level or above. According to the monthly income distribution, 20% of people make less than \$276, 40% are between \$276 and \$552, 25% are between \$552 and \$690, and 15% are above \$690. 10% were unable to take care of themselves, 60% were able to do so completely, 30% were able to do it somewhat, and 10% were unable to do so at all.

The purpose of the questionnaire was to evaluate senior clients' opinions regarding the quality of treatment, perceived value, loyalty, and satisfaction with senior care services. With almost 70% selecting "Agree" or "Strongly Agree," the majority of respondents indicated satisfaction with the facilities' public spaces, surroundings, cuisine, and costs of services in terms of tangibility.

About 65% of respondents in the assurance category expressed satisfaction with the staff members' professional training and service quality. About 60% of respondents expressed satisfaction with the prompt response and individualized services received, according to the responsiveness evaluation. About 75% of consumers agreed that the service was reliable, which included working with medical institutions and creating individualized rehabilitation plans. About 80% of those surveyed gave empathy good ratings, which is indicative of the facilities' psychological counseling services and staff communication.

According to the customer perceived value section, over 80% of consumers agreed that the institutions' services and facilities improved the quality of life for senior citizens. In terms of satisfaction, according to 75% of respondents, they are generally satisfied with the services that the institutions offer. According to the loyalty section, up to 85% of patrons said they would be prepared to stay at the existing facility and refer others to it. All information gathered was used only for this study,

and participant replies and information were safely kept in order to prevent their exploitation for financial gain in the researcher's archives.

The rights of the participants were completely safeguarded, as well as the goal of the research is to raise the standard of private senior care services, and to promote the industry's ongoing development. Table 3.8 showed the enterprise information of institutions.

Strict screening and data cleaning were performed on all valid questionnaire responses to guarantee the analysis's accuracy. We can make sure that the results of the study accurately reflect the actual conditions of the residents at private senior care homes in Harbin, China, by analyzing the sample characteristics.

4.2 Descriptive Statistics

The mean and standard deviation are typically used in descriptive statistical analysis to determine each variable's index level. The sample's average level in relation to this index increases with the average value.

Table 4.2 Descriptive statistics

Dimensions	Min	Max	Mean	Std	Sk	Ku
Tangible	1.8	5	3.509	0.635	-0.504	0.041
Assurance	1	5	3.597	0.789	-0.731	0.574
Responsiveness	1.4	5	3.714	0.716	-1.185	1.406
Reliability	1.25	5	3.750	0.813	-1.003	1.109
Empathy	1.25	5	3.596	0.877	-0.814	0.338
Functional value	1	5	3.582	1.069	-0.691	-0.105
Social value	1	5	3.402	0.870	-0.594	0.054
Emotional value	1	5	3.531	1.025	-0.589	-0.23
Expectation	1	5	3.547	0.762	-0.646	0.685
Perceived quality	1	5	3.527	0.864	-0.342	-0.553
Brand image	1	5	3.431	1.077	-0.197	-0.909
Repeated	1	5	3.582	1.081	-0.296	-0.887
Recommend	1	5	3.500	1.029	-0.632	-0.253

In the data distribution, the degree of data dispersion is described by the discrete trend. A higher score indicates a greater level of agreement. Table 4.2 demonstrates that most of the higher scores suggest that the issue is more well-known.

4.3 Reliability Analysis

The degree to which the same thing can be measured again using the same technique and get consistent findings is known as reliability. It indicates the consistency, stability, and dependability of the measured data. The test results are more consistent, stable, and reliable when the reliability coefficient is larger. The reliability data are displayed in Table 4.3.

Table 4.3 Reliability statistics

Dimensions	The Cronbach's Alpha	Number
Tangible	.869	5
Assurance	.833	4
Responsiveness	.874	5
Reliability	.873	4
Empathy	.913	4
Functional value	.853	2
Social value	.852	2
Emotional value	.813	2
Expectation	.746	2
Perceived quality	.755	2
Brand image	.796	2
Repeated	.908	2
Recommend	.834	2
total	.895	38

The table shows that the scale items have a good dependability coefficient, so the survey data is considered to be reliable.

4.4 Validity Analysis

The degree to which a measurement instrument can precisely the characteristic It's intended to record, indicating the test's accuracy and utility, is known as validity. It is the most critical requirement for a scientific measurement instrument. In social research, questionnaires or scales are expected to demonstrate high validity. To establish validity, the purpose and scope of the measurement must be clearly defined, considering the content to be measured and analyzing its nature and characteristics. This process involves evaluating whether the content of the measurement aligns with its intended purpose and determining the degree to which the outcomes demonstrate the characteristics being measured.

Two characteristics of validity are relativity and continuity: The validity of any test is relative. The validity of any test is for a certain target, or the test is only valid for the purposes and occasions that are consistent with the target. Therefore, when assessing a test's validity, its function and goal must be taken into account. Validity is continuous; test findings serve as the basis for validity, which is typically defined in terms of the correlation coefficient, which varies only in degree. Table 4.4 showed the validity statistics.

Table 4.4 Validity statistics

Variable	Factor	Estimate	CR	AVE
Tangible1	F1	.777	.871	.579
Tangible2	F1	.806		
Tangible3	F1	.872		
Tangible4	F1	.696		
Tangible5	F1	.628		
Assurance1	F2	.762	.835	.559
Assurance2	F2	.762		

Table 4.4 Validity statistics (continued)

Variable	Factor	Estimate	CR	AVE
Assurance3	F2	.747		
Assurance4	F2	.718		
Responsiveness1	F3	.813	.886	.611
Responsiveness2	F3	.723		
Responsiveness3	F3	.865		
Responsiveness4	F3	.811		
Responsiveness5	F3	.681		
Reliability1	F4	.748	.875	.637
Reliability2	F4	.855		
Reliability3	F4	.768		
Reliability4	F4	.817		
Empathy1	F5	.825	.917	.734
Empathy2	F5	.876		
Empathy3	F5	.859		
Empathy4	F5	.866		
Functionalvalue1	F6	.946	.860	.756
Functionalvalue2	F6	.786		
Socialvalue1	F7	.962		
Socialvalue2	F7	.771		
Emotionalvalue1	F8	.788	.816	.690
Emotionalvalue2	F8	.871		
Perceivedquality1	F9	.720	.759	.614
Perceivedquality2	F9	.842		
Brandimage1	F10	.802	.798	.664
Brandimage2	F10	.828		
Expectationofcustomers1	F11	.750	.752	.603
Expectationofcustomers2	F11	.802		
Repeatedpurchaseintention1	F12	.917	.911	.836

Table 4.4 Validity statistics (continued)

Variable	Factor	Estimate	CR	AVE
Repeatedpurchaseintention2	F12	.912		
Recommendationintention1	F13	.890	.837	.720
Recommendationintention2	F13	.805		

Generally speaking, the survey's structural validity is deemed good if the standardized factor load is higher than 0.5, the mean sampling variance (AVE) is higher than 0.5, and the combination reliability (CR) is better than 0.6. According to the table, we can see that the subjects and dimensions are in accordance with the standard, indicating that the data have good validity.

4.5 Confirmatory Factor Analysis

Data from social surveys can be statistically analyzed using confirmatory factor analysis. It determines whether a factor's link to the related measure word fits the theoretical connection that the researchers created. Structural equation modeling is frequently used to test confirmatory factor analyses. The confirmatory factor analysis method is used in real scientific research to test the measurement model.

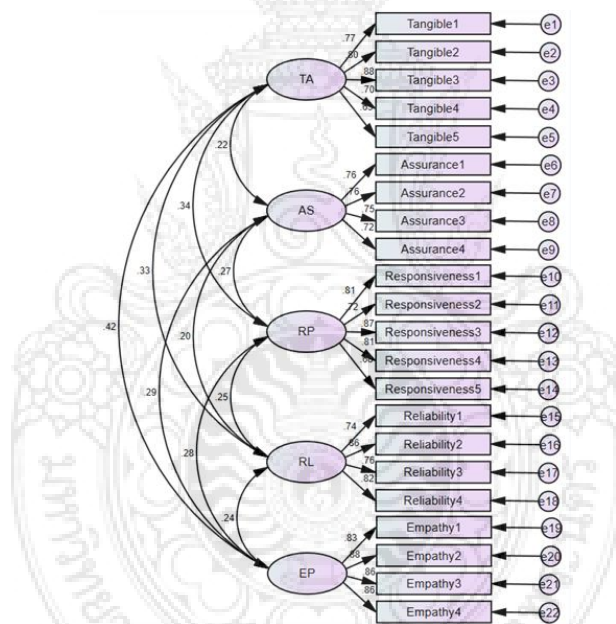
4.5.1 A Factor Analysis of Services Quality

The degree to which theoretical structural models match data is evaluated using a statistical metric called the model fitting index. Theoretical models can be evaluated based on factors including absoluteness, correlation, sample size, and model complexity using the fitting index of various models. Firstly, verifying overall structural model adaptability is essential. This study tested the designed structural model, and the outcomes demonstrated how well the model suited overall. with indicators within the recommended range. The X^2/df was put forth by Wheaton and colleagues in 1977 as a measure for assessing model fit. It is generally recommended that X^2/df should have a value in the range of 1 and 3. although the

specific threshold may vary depending on the research field. Marsh and Hocevar (1985) further discussed the applicability of the χ^2/df index and suggested that for Model Fit, values in the range of 2 to 5 are acceptable. The model fit findings for service quality were displayed in Table 4.5.

Table 4.5 Model fit results of service quality

Index	χ^2/df	RMSEA	GFI	TLI	NFI	CFI
Judgment standard	< 3	< .08	> .8	> .9	> .9	> .9
Value	2.542	.055	.925	.944	.923	.952



$$\chi^2=505.9 \quad df=199 \quad \chi^2/df=2.542 \quad CFI=.952 \quad TLI=.944 \quad GFI=.925 \quad NFI=.923 \quad RMSEA=.055$$

Figure 4.1 Measurement model of service quality

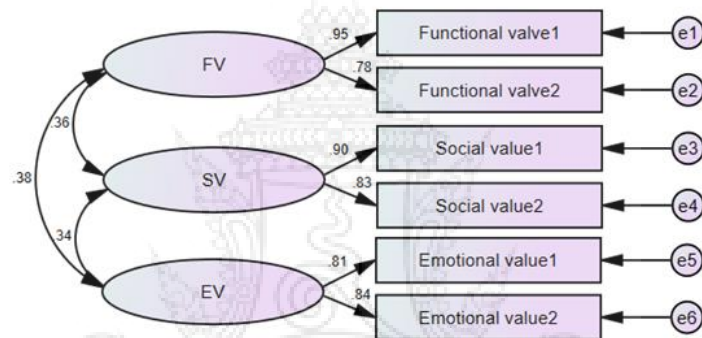
The measurement model for service quality was displayed in Figure 4.1. Combining measurement values, display the importance of each measurement relationship, indicating a good measurement relationship.

4.5.2 Factor Analysis of Customer Perceive Value

The findings of the factor analysis of value as perceived by customers are shown. The model fit findings for customer perceived value were exhibited in Table 4.6.

Table 4.6 Model fit results of customer perceived value

Index	χ^2/df	RMSEA	CFI	TLI	NFI	GFI
Judgment standard	< 3	< .08	> .8	> .9	> .9	> .9
Value	.164	.035	.999	.998	.998	.999



$$\chi^2=.986 \quad df=6 \quad \chi^2/df=.164 \quad TLI=.998 \quad GFI=.999 \quad CFI=.999 \quad RMSEA=.035 \quad NFI=.998$$

Figure 4.2 Measurement model of customer perceived value

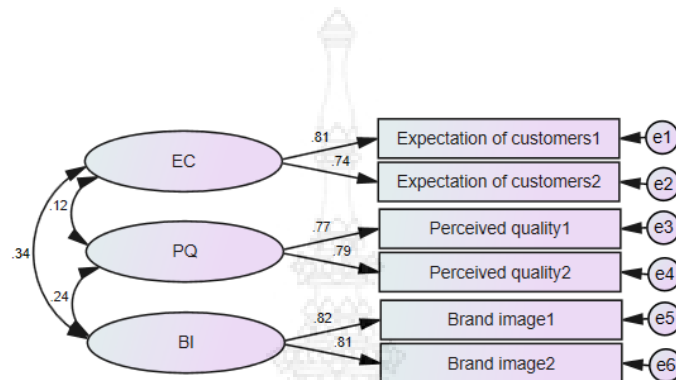
The customer-perceived value measurement model was displayed in Figure 4.2. Combining measurement values, display the importance of each measurement relationship, indicating a good measurement relationship.

4.5.3 Factor Analysis of Customer Satisfaction

The outcome of the factor analysis of customer satisfaction are shown in this section. Customer satisfaction model fit findings were displayed within Table 4.7.

Table 4.7 Results of customer satisfaction model fit

Index	χ^2/df	RMSEA	GFI	NFI	CFI	TLI
Judgment standard	< 3	< .08	> .8	> .9	> .9	> .9
Value	1.269	.023	.995	.983	.998	.998



$$\chi^2=7.615 \text{ df}=6 \text{ } \chi^2/df=1.269 \text{ CFI}=.998 \text{ TLI}=.998 \text{ GFI}=.995 \text{ NFI}=.983 \text{ RMSEA}=.023$$

Figure 4.3 Measurement model of customer satisfaction

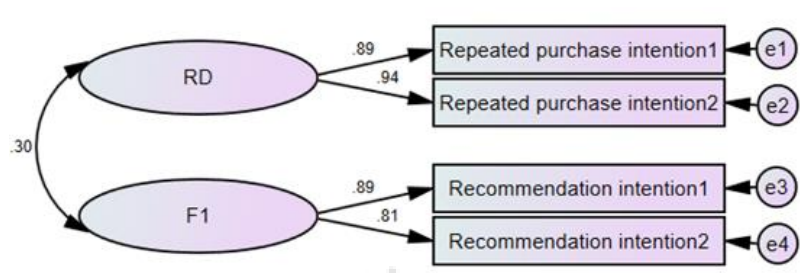
Figure 4.3 showed the model for measuring customer satisfaction. Combining measurement values, display the importance of each measurement relationship, indicating a good measurement relationship.

4.5.4 Factor Analysis of Loyalty

The findings of the factor analysis of customer satisfaction are shown in this section. Table 4.8 showed model fit results of loyalty.

Table 4.8 Model fit results of loyalty

Index	χ^2/df	RMSEA	CFI	TLI	NFI	GFI
Judgment standard	< 3	< .08	> .8	> .9	> .9	> .9
value	.998	.044	.999	.994	.990	.999

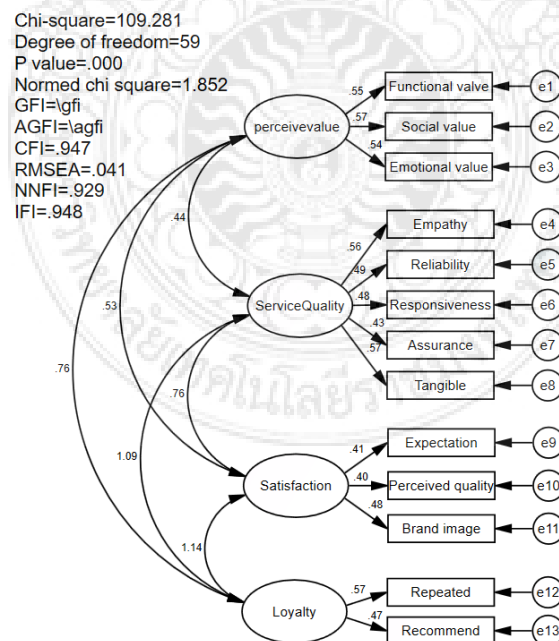


$\chi^2=0.998$ $df=1$ $\chi^2/df=.998$ CFI=.999 TLI=.994 GFI=.999 NFI=.990 RMSEA=.044

Figure 4.4 Measurement model of loyalty

Loyalty measuring model was displayed in Figure 4.4. Combining measurement values, display the importance of each measurement relationship, indicating a good measurement relationship.

Overall, the consumer perception, customer satisfaction, loyalty, and service quality models are well-fitted. The measuring model for every dimension was displayed in Figure 4.5.



$\chi^2=109.281$ $df=59$ $\chi^2/df=1.852$ TLI=.994 GFI=.993 NFI=.929 RMSEA=.041 CFI=.947

Figure 4.5 Measurement model of all dimensions

4.6 Correlation Analysis

The investigation of whether there is a relationship between phenomena is known as correlation analysis. and on the specific dependence of the phenomenon to explore the strength of its correlation as well as its direction, studying the connection between chance variables is done statistically. Table 4.10 displayed the results of the correlation study.

Describing and assessing the kind and degree of a relationship between two or more variables is known as correlation analysis. The * symbol, which appears in the upper right corner of the correlation coefficient, indicates the presence of a relationship; if not, there is none. When the correlation coefficient is more than zero, two variables are said to be positively correlated; when it is less than zero, two variables are said to be negatively correlated.

The table 4.9 shows that SQ, CPV, CS, and LO are significantly correlated, and there is a strong positive link since all of the variables' correlation coefficients are higher than 0.

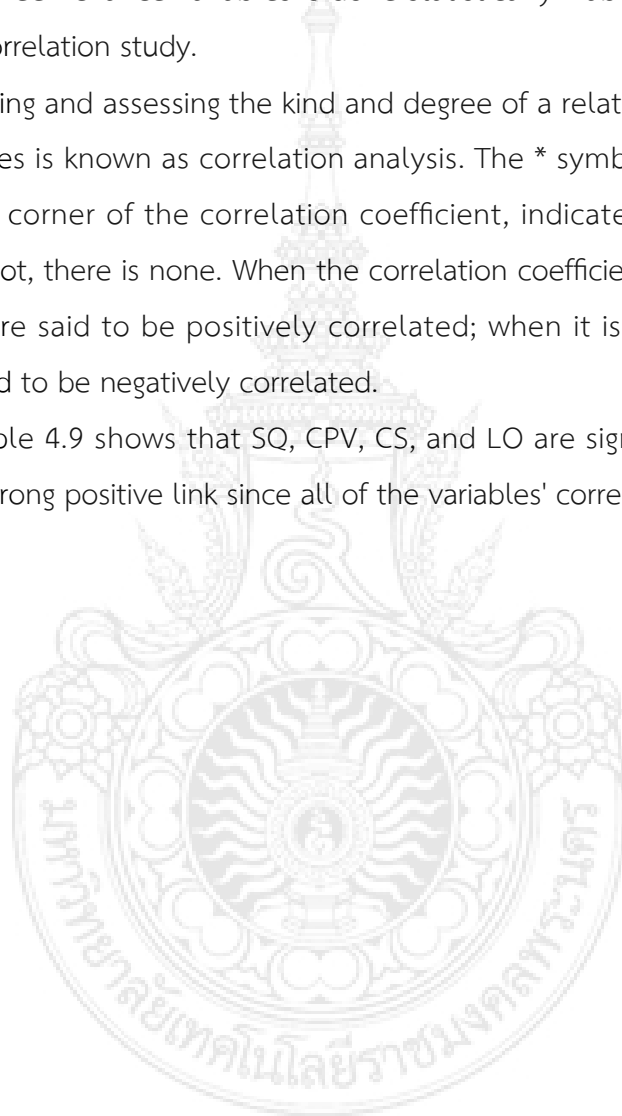


Table 4.9 Correlation analysis

	Ta	As	Re	Re	Em	Fv	Sv	Ev	Ex	Pq	Bi	Re	Re	SQ	CPV	CS	LO
Ta	1																
As	0.176*	1															
Re	0.298*	0.242*	1														
Re	0.284*	0.179*	0.236*	1													
Em	0.382*	0.255*	0.250*	0.216**	1												
Fv	0.03	0.059	0.105*	0.253**	0.099*	1											
Sv	0.123*	0.140*	0.154*	0.243**	0.097*	0.313*	1										
Ev	0.096*	0.145*	0.074	0.149**	0.122*	0.317*	0.288*	1									
Ex	0.203*	0.054	0.147*	0.169**	0.144*	0.117*	0.174*	0.115*	1								
Pq	0.215*	0.158*	0.165*	0.201**	0.169*	0.084	0.119*	0.067	0.092*	1							
Bi	0.114*	0.194*	0.230*	0.196**	0.191*	0.169*	0.106*	0.178*	0.266*	0.185*	1						
Re	0.323*	0.244*	0.255*	0.335**	0.355*	0.213*	0.299*	0.247*	0.306*	0.266*	0.282**	1					
Re	0.303*	0.303*	0.229*	0.247**	0.281*	0.179*	0.168*	0.172*	0.169*	0.239*	0.271**	0.265*	1				
SQ	0.640*	0.594*	0.621*	0.616**	0.691*	0.179*	0.240*	0.188*	0.223*	0.285*	0.296**	0.480*	0.430**	1			
CPV	0.11	0.153*	0.148*	0.292**	0.145*	0.765*	0.689*	0.741*	0.181*	0.120*	0.209**	0.340*	0.236**	0.277**	1		
CS	0.251*	0.210*	0.273*	0.279**	0.251*	0.186*	0.190*	0.183*	0.613*	0.616*	0.782**	0.417*	0.341**	0.399**	0.257*	1	
LO	0.394*	0.343*	0.305*	0.367**	0.401*	0.247*	0.295*	0.265*	0.301*	0.318*	0.348**	0.806*	0.784**	0.657**	0.455*	0.559*	1

4.7 SEM Analysis

Covariance structural modeling, sometimes referred to as SEM, is an essential tool for multivariate analysis. To examine how features relate to one another, as the basis, the feature variables' covariance matrix stands. Learning motivation, user happiness, and other possible variables that are not clearly observable are included in many social science, economics and finance, psychology, and management studies. This type of issue cannot be resolved by conventional statistical techniques, and the structural equation model developed in the previous century, the 80s, has matured and can compensate for the drawbacks of conventional statistical techniques.

Numerous dependent variables, or endogenous variables, can be handled concurrently using structural equation models. In conventional regression models, each dependent variable's regression coefficient and path coefficient are determined separately; other dependent variables are disregarded. The presence of additional factors will be fully taken into account in the structural equation; in other words, each factor's internal structure will adapt and change while accounting for other variables, changing not only the relationship between factors but also the factor's internal structure.

4.7.1 Path Analysis

Multiple independent factors and dependent variables can have a linear connection that can be examined using path analysis. Regression analysis is expanded upon by it, and can deal with more complex variable relations. Table 4.10 showed path analysis.

Table 4.10 Path analysis

Y	X	Standard estimate	Unstandard estimate	S.e.	C.r.	P
CPV	SQ	.433	.735	.150	4.888	***
CS	SQ	.632	.579	.116	4.975	***
CS	CPV	.253	.137	.056	2.429	.015
Lo	SQ	.628	.932	.260	3.588	***
Lo	CPV	.288	.251	.087	2.892	.004
Lo	CS	.659	1.067	.366	2.911	.004

The table above shows the regression coefficients. and typically, just the p-value and the normalized path need to be examined. coefficient to ascertain if the path's (x-Y) direct linear influence is present. According to the test of significance ($p < .05$), whether there is a relationship between the model variables. If there is a significant relationship between the variables, we can use the standardized route coefficient in order to investigate how efficiency affects things.

Standardized path coefficient of SQ for perceived value was .433, $p < .05$, showing a strong positive correlation. The standardized path coefficient of service equality to P value is below .05 and satisfaction is .632. which shows a significant positive relationship. A strongly positive association was indicated by the standardized path coefficient of perceived value to satisfaction, which was .253, and the P value, which was less than .05. The standardized path coefficient of service equality for loyalty is .628, $p < .05$, which shows a significant positive relationship. For loyalty, the normalized path coefficient of perceived value was .288, $p < .05$, indicating a significantly positive relationship. A substantial positive link is demonstrated by the standardized path coefficient of satisfaction for loyalty, which is 0.659, and the P value, which is less than 0.05.

4.7.2 Mediation Analysis

An approach to statistics is the bootstrap test procedure used to estimate the variability and other properties of a statistic by resampling the original data sample multiple times. This method was proposed by Efron (1979) and has been widely applied in statistical practice. The basic steps of the bootstrap method are as follows:

(1) Extract a new sample from the original data sample using a method that allows for repeated sampling, which is called a bootstrap sample.

(2) Use this bootstrap sample to estimate a statistical measure of interest, such as sample mean, standard deviation, or more complex statistical measures.

(3) Repeat the above process multiple times (usually hundreds or thousands of times) to obtain multiple bootstrap samples and corresponding statistical estimates.

(4) Use these estimated values to further calculate bootstrap estimates of statistical measures, such as standard error, mean square error, bias, etc.

(5) Confidence intervals or other types of statistical inferences can be further constructed based on these estimates.

One major advantage of the bootstrap method is that it does not require strict assumptions that the data comes from a specific mathematical model, making it applicable to non-parametric statistical situations. Meanwhile, due to its reliance on actual observation data rather than strict mathematical models, the bootstrap method often provides more robust and accurate estimation results in practical applications. Table 4.11 showed mediation analysis.

Table 4.11 Mediation analysis

Parameter	Effect Type	Standardized Effects	Lower	Upper	p
SQ-LO	DE	.628	.199	.987	0.000
SQ-CPV-LO	IE	.124	.013	.257	.038
SQ-CS-LO	IE	.416	.165	1.244	.006
SQ-CPV-CS-LO	IE	.072	.018	.278	.012
Total Effect		1.241	1.099	1.441	.001

Bootstrap tests show that there are notable mediating effects when 95% of the indirect effect confidence intervals do not include 0.

To learn more about the connection between client satisfaction, client loyalty, service excellence, and customer loyalty, we used bootstrapping methods to calculate the confidence intervals for Customer perception and loyalty and the mechanism by which customer satisfaction and service quality are mediated, have three effects: direct, indirect, and total.

According to Table 4.11, zero does not fall inside the overall effect's confidence interval range, indicating overall impact is noteworthy; zero is not included in the indirect effects confidence interval range. which means indirect effects are significant; The confidence interval range of there is a notable direct effect. It indicates that there is a substantial direct influence. Due to the significant indirect and direct impacts, indicates that service satisfaction serves as a general mediator. In other words, service satisfaction can directly affect brand loyalty.

As shown in Table 4.12, we identified significant mediating effects across multiple paths of service quality's influence on loyalty.

Table 4.12 Bootstrap analysis

Path analysis	Effect-Value	Boot-SE	Boot-LLCI	Boot-ULCI
SQ – CPV- LO	.117	.025	.074	.170
SQ – CS - LO	.189	.030	.132	.251
SQ – CPV – CS - LO	.023	.007	.011	.038

The indirect effect value of SQ-CPV-LO is 0.117, with confidence intervals of [0.074, 0.17]. If the interval does not include 0, it indicates that the mediation is valid.

The indirect effect value of SQ-CS-LO is 0.189, with a confidence interval of [0.132, 0.251]. If the interval does not include 0, it indicates that the mediation is valid.

The indirect effect value of SQ-CPV-CS-LO is 0.023, with a confidence interval of [0.011, 0.038]. If the interval does not include 0, it indicates that the mediation is valid.

This section examines customer satisfaction among service excellence, customer loyalty, and customer perception respectively. Testing that perceived pricing and service quality have no direct effect on customer satisfaction is suitable, and emphasis on customer loyalty is also transformative. Agency effectiveness analysis uses SEM (structural equation modeling) at the nexus of service quality, customer perceived price, customer satisfaction, and customer loyalty.

Through intermediaries for customer happiness, it is helpful to express the perceived loyalty of service quality. Intermediate efficacy test program. Path coefficient analysis: from consumer satisfaction, an intermediate variable, to the dependent variable of customer loyalty, which is derived from the independent variable of perceived service quality. Direct and indirect: direct and quantitative service excellence and direct client loyalty. Indirectly, customer satisfaction should be evaluated from customer satisfaction to the path the relationship between customer pleasure and the sense of service excellence, as well as the coefficient of client loyalty. The bootstrap

effect was used to mediate significance in order to keep robustness. If the confidence interval contains no zeros, the intermediate effect is present.

4.8 Consistency of SEM and Hypothesis Testing Results

4.8.1 Consistency of SEM

Creating to test theories, a structural equation model (SEM) using AMOS software, compatibility between the model and data should be considered in both the internal structure fitting index of simultaneously the overall model fitting index and the model itself.

The criteria for evaluating overall model fitting primarily revolve around model fitting indices, specifically including the adjusted chi-square value (CMIN/DF), normalized fit index (NFI), root mean square error of approximation (RMSEA), and comparative fit index (CFI). Based on the model and its underlying assumptions, the structural equation model was constructed using AMOS as follows. Figure 4.6 displayed the findings of the SEM analysis.

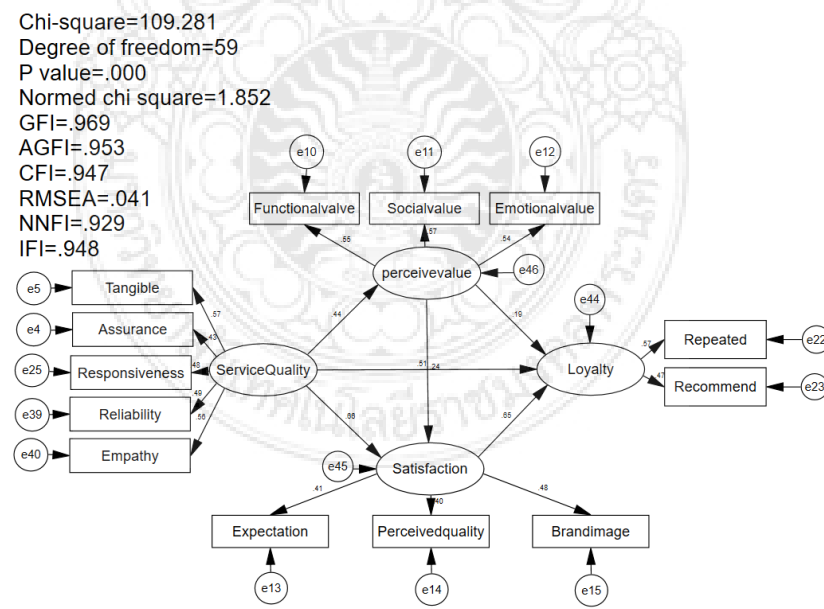


Figure 4.6 SEM result analysis

In χ^2/df , the χ^2 value should be as little as possible. DF reflects the complexity of the model. There are more degrees of freedom with a simpler model. On the other hand, fewer degrees of freedom are associated with greater complexity. The effect is good, as indicated by the study's χ^2/df being less than 3. The CFI (comparison fit index) is an index whose value ranges from 0 to 1 when comparing hypothetical models with independent models. The closer you get to 0, the worse the fit, and the closer you get to 1, the better the fit. In general, $CFI \geq 0.8$; the model fitting is considered better. The bigger the NFI (non-standard fitting coefficient) and CFI (comparison fitting index), the better performance. According to the model fitting study, the chi-squared degree of freedom is smaller than 3 than χ^2/df ; other indicators mostly fit better; through the test value, the model is better. Table 4.13 showed Model fitting indicator.

Table 4.13 Model fitting indicator

Index	χ^2/df	RMSEA	CFI	NFI	IFI	TLI	GFI
Judgment standard	< 3	< .08	> .8	> .9	> .9	> .9	> .9
Value	1.852	.041	.947	.929	.948	.927	.969

It is evident from the preceding table that all indicators of the structural equation model have reached excellent standards. The findings show that there is a good fit between the data and model.

Although model meets all required criteria, there is still room for improvement. As shown in the covariance matrix in the table above, strong correlations exist between certain variables. Therefore, we revised the original model, resulting in the following modified figure. The fit indices of the revised model demonstrate significant improvement. Figure 4.7 showed Consistency test of structural equation model.

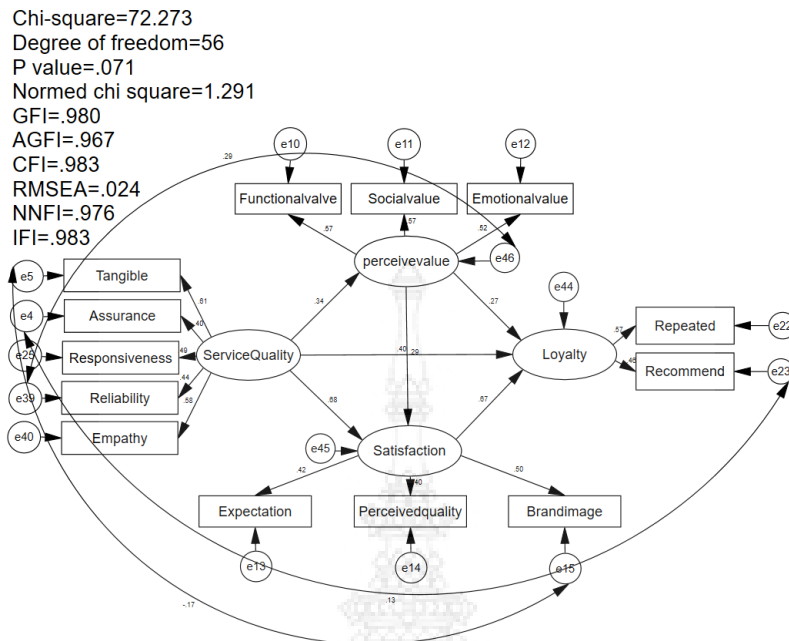


Figure 4.7 Consistency test of SEM

After structural equation consistency testing, the newly revised fitting index is more in line with the standard. Table 4.14 shows the rectified model fitting metrics.

Table 4.14 Rectified model fitting indicator

Index	χ^2/df	RMSEA	GFI	NFI	CFI	TLI	IFI
Judgment standard	<3	<.08	>.8	>.9	>.9	>.9	>.9
Value	1.291	.024	.980	.976	.983	.927	.983

4.8.2 Hypothesis Testing Results

Considering the findings of the data analysis, all proposed hypotheses in the study were supported, as shown in Table 4.15.

Table 4.15 Hypothesis test summary

Hypothesis	Detailed List	Test Result
H1	The quality of services has a favorable effect on customer satisfaction	Assistance
H2	Service quality has a favorable effect on the perceived value of customers	Assistance
H3	The quality of services has a beneficial effect on loyalty	Assistance
H4	The perceived value of the customer has a beneficial effect on customer satisfaction	Assistance
H5	Loyalty is positively impacted by perceived value	Assistance
H6	Loyalty benefits from customer happiness	Assistance
H7	Loyalty is positively impacted by service quality through perceived value	Assistance
H8	Service quality has a beneficial effect on loyalty through increasing client satisfaction	Assistance
H9	Loyalty is positively impacted by service quality through customer satisfaction and consumer perceived value	Assistance

Chapter 5

Conclusions, Discussions, and Recommendations

The research findings and limitations that were discovered during the investigation were discussed in Chapter 5. Additionally, this chapter offers recommendations regarding the caliber of services provided by private senior care facilities in aging nations, which can enable these institutions to enhance satisfaction, offer better services to the aged, and make recommendations and research plans.

5.1 Conclusions

In Chinese private senior care facilities, this study looked at the intricate links between client happiness, loyalty, perceived worth, and level of service. The analysis yielded several significant findings. There was a substantial positive correlation as shown by the normalized path coefficient of perceived value and service quality of 0.433, $p < .05$. Likewise, a significant positive association was also shown by the standardized path coefficient of service quality on satisfaction, which was 0.632, $p < .05$.

The standardized path coefficient of perceived value on satisfaction was 0.253, $p < .05$, indicating a significant positive relationship. There found a 0.628 standardized path coefficient of loyalty to service excellence, $p < .05$, showing a strong positive correlation. Similarly, a substantial positive association was indicated by the standardized route correlation between loyalty and perceived value, which was 0.288, $p < .05$. Additionally, standardized path coefficient of satisfaction on loyalty was 0.659, $p < .05$, further supporting a strong, uplifting bond. The hypotheses are supported by these research findings (Chin, 1998), and align with previous research (Hair et al., 2014), while extending our familiarity with the complex ways that service quality affects senior care.

Analysis shows that there are important mediating effects along the pathways of perceived value and client satisfaction. indirect impact via client satisfaction ($\beta = 0.189$, 95% CI [0.132, 0.251]) was stronger than the perceived value pathway

($\beta=0.117$, 95% CI [0.074, 0.170]), suggesting that satisfaction plays a more crucial role in translating service quality into loyalty (Aburayya et al., 2020). Moreover, the serial mediation effect through both perceived value and satisfaction ($\beta=0.023$, 95% CI [0.011, 0.038]), although smaller, indicates the interconnected nature of these constructs in forming loyalty. After data analysis, each hypothesis was examined for significant statistical connections between variables.

The relationship between service quality, customer happiness, customer loyalty as well as the perceived value of customers in Chinese senior nutrition facilities was thoroughly examined in this study. The results, which were obtained by analyzing 520 questionnaire responses using structural equation modeling (SEM), enhance the positive correlation between customer satisfaction and service quality and elucidate the mediation role of customer perceived value. Study offers private senior care facilities tactical suggestions to improve client loyalty and service effectiveness. The results demonstrate that all facets of service quality considerably improve consumer loyalty by improving their views of value and satisfaction. In particular, customer satisfaction acts as a mediator, amplifying the relationship between loyalty and service excellence. In addition to being a powerful predictor positively impacting loyalty directly.

To sum up, this study provides useful information to help senior care providers more effectively comprehend and meet the needs of their senior consumers, enabling them to succeed in an increasingly competitive market.

5.2 Discussions

consumer satisfaction acts as a mediator between loyalty and consumer impression and service quality, has been validated for care services in China. The research results indicate that in the field of elderly care services, our research conclusions are relevant and consistent among scholars.

5.2.1 Discussions on Hypothesis

The results shed important information on the relationships between customer satisfaction, customer loyalty, perceived value, and service quality in China's private senior care facilities. The results confirm the hypothesized relationships and offer practical implications to enhance service provision and promote long-term loyalty among elderly clients. Below, we discuss the findings in detail, linking them to the background of China's private senior care services.

5.2.1.1 Value as viewed by customers and the caliber of services

The study found that service quality and customer perceived value were strongly correlated (standardized path coefficient=0.433, $p<.05$). This suggests that the quality of services has increased in private facilities for senior care enhances the perceived value of the services among elderly clients. In the Chinese context, where elderly care services are increasingly privatized, this finding underscores the importance of investing in high-quality services to fulfill the demands of senior citizens and their families. Tangible aspects, such as facilities, environmental conditions, and food quality, as well as intangible aspects, such with the professionalism and the employees' empathy has a big influence on how value is viewed. According to the study, 70% of participants expressed satisfaction with the public spaces and surroundings of the institutions, while 80% positively rated the psychological counseling services and staff communication. These findings suggest that private elderly care institutions should emphasize the emotional and physical components of care in order to increase regarded worth.

5.2.1.2 Quality of service and client satisfaction

The findings also shown that customer satisfaction and service quality have a strong beneficial relationship (standardized path coefficient=0.632, $p<.05$). Regarding private senior care facilities in China, this finding highlights the need for continuous improvement in service delivery to ensure high levels of satisfaction. For example, according to the report, 75% of participants were usually happy with the services they received, particularly in terms of reliability and responsiveness. These results suggest that private elderly care institutions should prioritize reliability and

responsiveness in their service offerings to maintain elevated levels of client satisfaction.

5.2.1.3 Customer value perception and customer satisfaction

The findings indicated that perceived value and customer satisfaction were significantly positively correlated by the study (standardized path coefficient=0.253, $p<.05$). This suggests that when Senior citizens believe that service receive are more valuable, their satisfaction levels increase. In the Chinese context, where elderly care services are often viewed as a significant financial investment, this finding emphasizes the importance of delivering value-for-money services. For instance, the study revealed that 80% of those surveyed thought that their quality of life was improved by the facilities and services offered by the organizations. This suggests that private senior care facilities should concentrate on providing services that not only satisfy but also beyond the value expectations of their clients.

5.2.1.4 Customer loyalty, satisfaction, and service quality

The study found that both customer satisfaction and service quality have a beneficial effect on customer loyalty (standardized path coefficients=0.628 and 0.659, respectively, $p<.05$). This finding is particularly relevant for China's private senior care facilities, where competition is increasing, and customer retention is critical for long-term success. The study found that 85% of respondents were willing to stay at their present establishment and suggest it to others, indicating high levels of loyalty. This suggests that private elderly care institutions should prioritize preserving excellent client satisfaction and service quality to foster loyalty among their clients.

5.2.1.5 The mediating role of perceived value and customer happiness

The mediation analysis's findings demonstrated that customer satisfaction plays a substantial mediating role in the relationships between perceived value and customer loyalty as well as between service quality and customer loyalty. In particular, there were notable indirect benefits of service excellence on patron happiness and loyalty (indirect effect=0.416, $p<.05$). This study emphasizes how crucial client satisfaction is in bridging the gap between loyalty and service quality in private senior care facilities. This conclusion implies that organizations should put a higher

priority on customer happiness in order to increase loyalty and draw in new business, especially in China, where senior clients frequently rely on word-of-mouth referrals.

5.2.2 Differences and Similarities between This Study and Previous Research

Recent scholarly investigations have focused on the connection between customer loyalty, perceived value, and service quality and the mediating function of customer satisfaction in China's private senior care facilities. This study shows that consumer pleasure works as a go-between for client loyalty and service excellence, a finding consistent with studies across various industries (Zeithaml, Berry, and Parasuraman, 1996). However, the private elderly care sector exhibits unique characteristics that distinguish it from other sectors, particularly in the heightened importance of consumer satisfaction's emotional components and perceived value. These nuances provide both similarities and differences when In contrast to earlier studies in other domains, like hospitality, retail, and healthcare.

One key similarity lies in the foundational model where loyalty is fueled by client satisfaction, which is directly impacted by service quality. This pattern has been widely documented in sectors like hospitality (Anderson and Sullivan, 1993) and retail (Parasuraman, Zeithaml, and Berry, 1988). For example, In the hotel sector, providing excellent service results in happier customers, which encourages loyalty, a dynamic also observed in private elderly care institutions. However, the private elderly care sector diverges in the significant role of perceived value. Unlike in retail, where transactional satisfaction often suffices, elderly care clients place greater emphasis on the long-term value and emotional security provided by the service (Wang et al., 2020). This aligns with findings in the healthcare sector, where perceived value is critical due to the life-impacting nature of services (Johnson and Grayson, 2005).

Another point of comparison is the emotional and psychological factors influencing perceived value and satisfaction. In the private elderly care sector, these factors are more pronounced than in industries like retail or hospitality. For example, in retail, Price and product quality are examples of concrete elements that frequently influence consumer satisfaction (Bitner, 1990). In contrast, elderly care clients prioritize intangible aspects such as empathy, trust, and emotional support, which are critical for

building long-term loyalty. This distinction is echoed in the financial services sector, where trust and emotional engagement significantly influence customer loyalty (Johnson and Grayson, 2005). However, the stakes in elderly care are arguably higher, given the dependency and vulnerability of the clientele.

Moreover, In the private senior care industry, In the relationship between service quality and loyalty, customer satisfaction has a more intricate mediation role. While this mediating effect is well-documented in other industries, such as telecommunications (Cronin and Taylor, 1992), the elderly care sector requires a better comprehension of the psychological and emotional factors that influence contentment. For instance, in telecommunications, satisfaction is often driven by functional aspects like network reliability and customer service efficiency. In contrast, elderly care satisfaction is deeply tied to the quality of interpersonal relationships and the perceived dignity of care, factors that are less prominent in other sectors.

Despite these differences, some universal principles remain applicable. For example, the value of constant, high-quality service in building loyalty is a common thread across industries. In the hospitality sector, consistent service delivery is a major factor in fostering client loyalty (Anderson and Sullivan, 1993), a principle that also holds true in private elderly care. However, the elderly care sector requires additional focus on personalized care and emotional engagement, which are less critical in industries like retail or telecommunications.

In summary, while the private elderly care sector shares foundational principles with other industries regarding there are particular opportunities and problems associated with the interaction. Emotional engagement, and long-term trust-building distinguishes it from sectors like retail, hospitality, and telecommunications. The necessity of tailored strategies that address the particular needs and preferences of senior care clients is highlighted by these variations.

5.2.3 Contribution to Academics

From a theoretical standpoint, this study offers fresh perspectives on the connections among customer happiness, customer loyalty, customer perceived value, and service quality (Kim, K.H. et al., 2001). It provides methods for senior care facilities

to raise client contentment and quality of service. The study confirmed that customer loyalty is directly impacted by service quality and thoroughly examined the distinct ways in which each aspect of loyalty is influenced by service excellence. As a mediator, value as viewed by customers provides a novel perspective on the relationship between loyalty and service excellence. Furthermore, the study's conclusions confirm that contentment is a potent predictor that has a major impact on loyalty, which is essential for developing theories of service marketing.

Client pleasure has a beneficial effect on client loyalty with the services received (Ji, K.J. et al., 2005). This is in line with earlier research showing that customers will feel content and be more inclined to buy services when they have a favorable outlook on the caliber of services (Tenenhaus, M. et al., 2005). Having said that, this aligns with earlier studies. (Zeithaml, V.A. et al., 1996).

Therefore, research on this topic is rather lacking the assistance of China's private senior care facilities. This study starts from empirical evidence, which not only verifies the previous research, but also provides theoretical reference for China's private senior care facilities' services.

5.2.4 Implication for Practice

The study's conclusions offer specific management recommendations. These findings can be used by elder care facilities to develop and put into practice plans to enhance services, particularly in important areas of service quality. Through a variety of service development initiatives, Organizations can focus more on increasing the perceived worth and general pleasure of their clients (Lee, J. et al., 2017). Institutions can enhance consumer loyalty by focusing on areas that best utilize available resources by knowing the links between aspects of service quality and customer loyalty. Additionally, the findings give decision-makers in the senior care sector with valuable information, emphasizing the significance of raising service standards, bolstering employee training, and upgrading facilities to increase senior client loyalty and satisfaction. Furthermore, this study offers a measurable model for customer loyalty and happiness, which helps with the development of industry norms and the assessment of service excellence. In conclusion, study offers theoretical

underpinnings as well as useful strategies for raising the fostering customer loyalty and raising the bar for senior care services (Myo et al., 2019).

This study challenges and adds greatly adding to the corpus of information about the relationships between perceived value, client loyalty, customer happiness. First, study demonstrating respective and combined on loyalty, this study offered fresh perspectives on the precise roles played by SQ. Second, by looking at the mediating function of customer satisfaction, this study not only supports its status as a significant mediator influencing loyalty but also expands on our knowledge of how it works.

Furthermore, this study questions the conventional wisdom about customer perceived value and comes to the conclusion that it directly affects customer loyalty in addition to acting as a major mediator between service quality and loyalty. Along with offering fresh chances for the advancement of theories and tactics related to service marketing in various cultural contexts, this result points to a more intricate pattern of interaction between value and satisfaction. All things considered, these results deepen our knowledge of service management procedures and cast doubt on conventional wisdom on methods of boosting client loyalty in the senior care sector, offering a wealth of material for further research.

5.3 Recommendations

5.3.1 Recommendations for Private Institutions of Senior Care

5.3.1.1 Emphasize the hardware facilities

An important part of senior care facilities is their hardware infrastructure in ensuring the quality of service and the well-being of residents. In China's private elderly care sector, there is a need to invest in modern, accessible, and comfortable infrastructure, including well-equipped living spaces, medical facilities, and recreational areas. Parasuraman, Zeithaml, and Berry (1988) assert that customer impressions are greatly influenced by the tangible aspects of service excellence. Therefore, upgrading facilities to meet international standards can increase customer satisfaction and draw in new business. Additionally, incorporating smart technologies,

such as health monitoring systems and emergency response tools, can further improve service efficiency and safety.

5.3.1.2 Consider the reliability and responsiveness of elderly care institutions

Reliability and responsiveness are key determinants. Institutions should focus on delivering consistent and dependable services, to build trust among residents and their families. Zeithaml, Berry, and Parasuraman (1996) emphasize that reliability ensures service promises are fulfilled, while responsiveness addresses the needs of customers promptly. Training staff to handle emergencies efficiently and implementing standardized operating procedures can significantly enhance these dimensions. Moreover, establishing feedback mechanisms to address complaints and improve service delivery is essential for maintaining high reliability and responsiveness.

5.3.1.3 Pay attention to the psychological care

Psychological care is a vital yet often overlooked aspect of elderly care, where elderly faces challenges such as loneliness and mental health issues, private institutions should prioritize emotional support and mental well-being. Activities such as group therapy, counseling sessions, and social events can foster a sense of community and belonging. According to Ryff (1989), psychological well-being is closely linked to overall life satisfaction among the elderly. Therefore, integrating mental health professionals into care teams and creating programs that promote emotional resilience can significantly improve the inhabitants' standard of living.

5.3.1.4 Put client pleasure and perceived value first in the senior care sector

Building loyalty and maintaining development in the senior care sector depend heavily on customer happiness and perceived value. In order to provide individualized and superior services, private institutions in China should concentrate on comprehending the requirements and expectations of their customers. According to Anderson and Sullivan (1993), customer satisfaction acts as a mediator in the link between loyalty and service excellence. By conducting regular surveys and engaging with residents and their families, institutions can determine what needs to be improved

and raise the perceived value. Offering value-added services, such as wellness programs and cultural activities, can further differentiate institutions in a competitive market.

5.3.2 Recommendations for the senior care services sector in nations with aging populations

The aging population is a global phenomenon, particularly pronounced in countries like China, Japan, and Thailand. This demographic shift has heightened the demand for high-quality. To handle the potential and problems, It is essential to comprehend the connections among perceived value, customer loyalty, service quality, and the mediating function of customer pleasure. By drawing on these relationships, this study provides targeted recommendations for the growth of the private senior care sector in aging communities. Recommendations from the following four aspects:

5.3.2.1 Increasing the caliber of services

Both happiness and loyalty are significantly impacted by the caliber of services offered in private senior care facilities. High service quality ensures that the physical, the psychological and emotional requirements of senior citizens are regularly satisfied. In China, for instance, research has indicated that raising the quality of services greatly increases client loyalty and satisfaction (Wang et al., 2020). Similarly, in Japan, where the elderly care industry is highly developed, service quality is a key differentiator among providers (Ministry of Health, Labor and Welfare, 2021).

To enhance service quality, institutions ought to emphasize both material and immaterial elements. Tangible improvements include modernizing facilities, ensuring hygiene, and providing advanced medical equipment. Intangible improvements involve training staff to deliver empathetic, personalized care and fostering a culture of respect and dignity. For example, Thailand's elderly care sector has successfully integrated traditional values of respect for elders into modern care practices, creating a unique value proposition (Kespichayawattana and Jitramontree, 2017).

Special emphasis should be given to resolving infrastructure building issues in order to enhance the quality of services provided by private care facilities, strengthening the construction of various infrastructure such as medical rehabilitation facilities, housing supporting facilities and so on, at the same time play the role of peripheral technical facilities to solve infrastructure problems.

5.3.2.2 Enhancing the perceived worth

In the private aged care industry, perceived value is a key factor in determining client loyalty. In aging societies, elderly clients and their families prioritize emotional security, trust, and long-term benefits over cost considerations. In Japan, perceived value is closely linked to the standing of caregivers and the caliber of interpersonal connections (Tsutsui and Muramatsu, 2005). Similarly, in China, families are prepared to spend more for services that offer personalized care and emotional support (Wang et al., 2020).

To increase perceived value, institutions should emphasize the unique benefits of their services, such as tailored care plans, experienced staff, and a supportive community environment. Transparent pricing and clear communication about services can also enhance perceived value, as seen in Thailand's elderly care market, where trust and transparency are critical factors in decision-making.

5.3.2.3 Fostering customer loyalty

The long-term viability of private senior care facilities depends on client loyalty. Loyalty is driven by consistent service quality, high perceived value, and strong emotional bonds between clients and caregivers. In Japan, long-term relationships between care providers and clients are a hallmark of the industry, contributing to high levels of customer loyalty (Tsutsui and Muramatsu, 2005). In China, institutions that prioritize family involvement and community engagement have also achieved strong loyalty among clients (Wang et al., 2020).

To foster loyalty, institutions should focus on building lasting relationships through personalized care, regular communication, and involvement in decision-making processes. Organizing community events and offering family support services can further strengthen these relationships. For example, Thailand's elderly

care providers often integrate cultural and social activities into their services, enhancing client engagement and loyalty.

5.3.2.4 Maximizing customer satisfaction

Importantly, customer satisfaction acts as a mediator in the interaction between perceived value, customer loyalty, and service quality. In aging societies, satisfaction is deeply influenced by emotional and elements related to psychology, such the state of interpersonal connections and the perceived dignity of care. In Japan, holistic care practices that address physical, mental, and social well-being been demonstrated to considerably raise client satisfaction (Tsutsui and Muramatsu, 2005). Similarly, in China, institutions that prioritize empathy and respect have achieved higher levels of satisfaction among clients (Wang et al., 2020).

To maximize satisfaction, institutions should adopt a holistic approach to care, addressing not only physical health but also mental and social well-being. Regular training programs for staff can ensure that caregivers are equipped to fulfill the psychological and emotional requirements of elderly clients. Leveraging technology, such as telemedicine and digital communication platforms, can also improve service efficiency and accessibility, as demonstrated in Thailand's elderly care sector.

Furthermore, leveraging technology can enhance customer satisfaction by improving service efficiency and accessibility. For example, telemedicine and digital communication platforms can facilitate regular check-ins and remote consultations, ensuring that clients receive timely care and support. These innovations align with trends in the telecommunications industry, where technology-driven solutions have significantly improved customer satisfaction (Cronin and Taylor, 1992).

In brief, the private elderly care sector faces unique challenges and opportunities in delivering high-quality services, enhancing perceived value, fostering customer loyalty, and maximizing customer satisfaction. By adopting strategies from other industries and tailoring them to the specific needs of elderly clients, institutions can attain long-term success and steady growth.

The private elderly care sector in aging societies like China, Japan, and Thailand faces unique challenges and opportunities. By improving customer satisfaction, building customer loyalty, raising perceived value, and improving service quality, institutions can address the growing demand for elderly care services and set new standards for quality and compassion.

5.4 Limitations

While the study of the relationships between customer loyalty, perceived value, service excellence, and customer happiness as a mediator in China's private senior care facilities provides valuable insights, it is not without limitations. These limitations highlight areas for future investigation to enhance comprehension and utilization in this area.

Although the research findings provide valuable insights, the scope and methodology of the study introduce some generalizations and explanatory limitations that may affect the results. Firstly, when collecting questionnaires from population aged 80 and above, despite providing training to survey personnel and related staff, there may still be issues with the accuracy of questionnaire feedback due to the physical and mental conditions of this age group. For example, older respondents might face challenges in understanding or accurately answering certain questions, which could affect the reliability of the data collected. Another limitation is the focus on urban areas, which might not adequately convey the events of elderly care clients in rural regions. Rural communities may confront particular difficulties, such as worse service quality and restricted access to resources, which could significantly impact perceived value and customer satisfaction. Future studies should broaden their geographic focus to encompass semi-urban and rural regions in order to present a more complete image of the private elderly care sector in China.

Future studies that incorporate these viewpoints may offer a more comprehensive understanding of the variables affecting client satisfaction and loyalty.

5.5 Future Research

Firstly, future research should investigate the contribution of technology to raising customer happiness and service quality. Adoption of telemedicine, digital communication platforms, and smart care devices has the potential to transform elderly care delivery, especially in isolated or underdeveloped regions (Cronin and Taylor, 1992). Exploring how these technologies impact perceived value and customer loyalty could provide valuable insights for policymakers and practitioners.

Secondly, future studies must take contextual aspects into account, such as cultural differences and regional disparities, in shaping customer perceptions and behaviors. Comparative studies across diverse geographic or cultural settings could reveal how these factors moderate the connections among loyalty, contentment, perceived value, and service quality. For example, cross-cultural studies might highlight whether certain service quality attributes are more valued in specific cultural contexts, thereby influencing satisfaction and loyalty differently. Such findings would enable Private senior care facilities should customize their offerings to fit the particular requirements of their target markets.

Thirdly, longitudinal studies are needed to examine how consumer loyalty and opinions are affected over time by shifts in service quality. Methods that combine qualitative interviews and quantitative surveys, could further enrich the findings by capturing the lived experiences of customers and their evolving expectations. These revelations would not only enhance scholarly comprehension but also make doable suggestions for improving service delivery and cultivating long-term client loyalty in private senior care facilities.

Finally, future studies should look at the effects of policy changes and regulatory frameworks on the private elderly care sector. For instance, the introduction of government subsidies or quality standards could influence service quality and customer satisfaction. Understanding these dynamics is essential for developing evidence-based policies that support the sustainable growth of the private elderly care.

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Appendix



Questionnaire

Greetings, Sir/Madam:

As a doctoral student, I would like to ask you a few questions. Thank you for spending the time to read this. Your answers and information will be securely stored in my file. Thus, you have complete protection for your rights. Usually, it takes ten minutes to finish the survey. Your best answers often come to mind when you are answering questions. Your responses to every question are crucial to determining the driving forces behind customer loyalty, satisfaction, and service quality.

Sincerely!

Part 1: Individual information (Mark "v" directly on “”)

Q1-1 Gender:

Male; Female

Q1-2 Age:

60-70; 71-80; 81+

Q1-3 Marital Status:

Widowed; Divorced; Married; Single

Q1-4 Diploma in education:

Primary and lower; education until junior high school;
 completion of high school; at least a college degree.

Q1-5 Your current monthly income (USD)

Less than 276; 276-552;
 552-690; More than 690

Q1-6 Ability to take care of oneself in life:

Completely capable of taking care of oneself;
 partial self-care; Disability

Part 2: Basic Information of private care facilities for the elderly (Mark "v" directly on "□")

Q2-1 The number of workers in private care facilities:

10-25; 25-40; 40-55; More than 55

Q2-2 How long it took for the private care service institutions to be established(years):

1-4; 5-7; 8-10; More than 11

Q2-3 The situation of institutions enjoying government funding support:

yes; no

Q2-4 Social volunteer groups providing services to institutions:

yes; no

Part 3: Questionnaires

Please make "v" on the corresponding score	1: Strongly Disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly Agree
Service quality	
Tangible	
Q3-1 The institution has perfect basic Facilities for public services	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-2 The institution's surroundings are pleasant, hygienic, and clean, and transportation is practical	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-3 The food provided by the institution is delicious and delicious	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>

Please make "v" on the corresponding score	1: Strongly Disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly Agree
Q3-4 The service price is reasonable and acceptable	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-5 The number of service personnel is sufficient and the configuration is reasonable	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Assurance	
Q3-6 The institution's staff can deliver care in compliance with specific standards and norms	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-7 The institution's staff has a comparatively high level of medical expertise	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-8 The environment was peaceful, and the institution's service workers took the effort to look after the elderly	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-9 Professional training has been provided to the institution's workers	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Responsiveness	
Q3-10 The institution's employees were polite and promptly attended to the needs of the elderly	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-11 For the sick elderly to seek medical treatment in time	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-12 The institution's staff members provide individualized services and are aware of the needs of the elderly	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>

Please make "v" on the corresponding score	1: Strongly Disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly Agree
Q3-13 On-time delivery of eating, cleaning, and bathing services	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-14 Your interests can be met in time	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Reliability	
Q3-15 The facility may create customized rehabilitation programs based on the demands and physical condition of the elderly	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-16 The facility collaborates with the nearby hospital, and senior citizens' access to healthcare is unhindered	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-17 The government provides substantial funding to institutions, and social groups are very concerned about the elderly	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-18 The operation of the institution is stable and safe	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>

Please make "v" on the corresponding score	1: Strongly Disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly Agree
Empathy	
Q3-19 Institutions routinely provide psychological therapy services to older adults in order to preserve their mental health	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-20 You are frequently contacted by the institution's staff to learn about your spiritual requirements	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-21 The planning of leisure activities and enjoyment, such reading and online discussion	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-22 Volunteers frequently visit the community to offer consolation, and the results are positive	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Customer Perceive Value	
Functional value	
Q3-23 The institutional infrastructure greatly facilitates the lives of the elderly	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-24 The institution's services are delivered in a timely manner	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Social value	
Q3-25 The institution is reliable and trustworthy	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-26 The social renown of the institution is relatively high	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>

Please make "v" on the corresponding score	1: Strongly Disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly Agree
Emotional value	
Q3-27 The elderly given excellent care by the institution's employees	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-28 The institution's employees' services maintain the seniors' positive attitudes	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Customer satisfaction	
Expectation of customers	
Q3-29 The service of the institution fulfill my expectations	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-30 An employee of the institution has high understanding of my requests.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Perceived quality	
Q3-31 I am satisfied with the equipment and facilities	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-32 I am happy with the daily services that the organization offers	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>

Please make "v" on the corresponding score	1: Strongly Disagree 2: Disagree 3: Neutral 4: Agree 5: Strongly Agree
Brand image	
Q3-33 I am content with the institution's positive social standing	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-34 I'm happy with the service idea	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Loyalty	
Repeated purchase intention	
Q3-35 I would prefer to stay at the current establishment	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-36 I have a lot of faith in the organization and am quite pleased with the services it offers	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Recommendation intention	
Q3-37 I have no complaints about my institution	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>
Q3-38 I would like to tell my friends about this current establishment.	1 <input type="checkbox"/> 2 <input type="checkbox"/> 3 <input type="checkbox"/> 4 <input type="checkbox"/> 5 <input type="checkbox"/>

Biography

Name Jibing Liu
Date of Birth January 26, 1986
Domicile Suihua, Heilongjiang, China

Educational Record

Educational Qualification	Name of institution	Year of Graduation
Bachelor	Sui Hua University	2008
Master	Northeast Agricultural University	2015

