



## The Health Care Services Quality Impact On Patient Loyalty Mediating By Patient Satisfaction In Jordan

Salahaldeen Alkawamleh, Puspa Liza Ghazali, Wan Mohamad Asyraf Bin Wan Afthanorhan and Mohamad Zulkifli Bin Abdul Rahim

Faculty of Business and Management, Universiti Sultan Zainal Abidin, 21300 Kuala Nerus, Malaysia.  
skawamleh@yahoo.com, puspaliza@unisza.edu.my, asyrafafthanorhan@unisza.edu.my, zulrahim@unisza.edu.my

DOI: <https://doi.org/10.54099/aijb.v4i2.1196>

### ARTICLE INFO

#### Research Paper

#### Article history:

Received: 24 December 2024

Revised: 15 May 2024

Accepted: 2 July 2025

**Key Words:** Patient loyalty, Patient Satisfaction, Services Quality

### ABSTRACT

**Purpose:** This study seeks to highlight the significance of patient satisfaction in the connection between patient loyalty and Services Quality. **Design / Methodology:** A total of 357 patients from 11 government hospitals in Jordan were asked to complete questionnaires. The collected data was analyzed using Structural Equation Modeling (SEM). **Findings:** Findings that providers in government hospital in Jordan are attempting to deliver well improved healthcare services to their customers. Results confirmed health services to build satisfaction and loyalty among patients. Health services quality including the factors such as reliability, assurance and tangibility are positively related with patient loyalty which is mediated through patient satisfaction.

*This work is licensed under a Creative Commons Attribution-Non Commercial 4.0 International License.*

### 1.0 Introduction.

To delivery of best-quality service is the way to success in health service in the health environment now a days the era of strong competition, monitoring and improving service quality is highly needs for developing the efficiency and health business volume (Anderson and Zeithamal, 1984; Babakus and Boller, 1992; and Garvin, 1983). The main element influencing customer satisfaction and purchase intention in both the manufacturing and service sectors is quality improvement (Oliver, 1980). According to several academics (Omar and Schiffman, 1995; Gremler et al., 2001; and Radwin, 2000), quality is important for customer satisfaction.

According to Kumar et al. (2008), a number of business organizations prioritize customer satisfaction over other considerations by concentrating on service-quality issues. Despite obstacles like a lack of highly qualified physicians and a shortage of hospital beds, the healthcare sector in developing nations like India has experienced a comparatively high growth rate due to a high demand for its services from both domestic and international patients. However, the growth may continue for a number of years to come (Burns, 2014). Building patient loyalty and providing excellent service are regarded as crucial pillars (Anderson and Zeithamal, 1984). It is necessary to determine the precise aspects of high-quality care that significantly influence patient satisfaction. As a result, hospital administration can better focus on such particular factors, even though patients heavily rely on doctors who treat them initially and then refer them to specific hospitals. Moreover, there are three characteristics for service, which are intangibility, heterogeneity, and inseparability (Parasuraman, Zeithaml, & Berry, 1985). Rather than measuring the quality



objectively for goods, service quality is determined by measuring the consumers' perceptions of quality. SERVQUAL was developed to measure the consumer perceptions of service quality (Parasuraman, Zeithaml, & Berry, 1988). The service quality study performed by Parasuraman and his colleagues is the masterpiece in service industry, especially the SERVQUAL questionnaire. It has been used in many industries such as hotel (El Saghier, 2015), management education (Datta & Vardhan, 2017), retail (Naik, Gantasala, & Prabhakar, 2010), and academic libraries (Asogwa, Asadu, Ezema, Ugwu, & C., 2014). SERVQUAL framework is a widely used tool to measure the healthcare service quality (Aliman & Mohamad, 2013; Butt & Run, 2010); (Alrubaiee & Alkaa'ida, 2011). According to SERVQUAL multiple-item scale, there are five dimensions in measuring the service satisfaction: reliability, responsiveness, assurance, empathy, and tangibles. This approach able to help the organization to focus on limited resource to maximize the profit (Butt & Run, 2010). In recent years, the hospital sector has grown increasingly competitive (Raju and Lonial, 2002). Hospitals are looking to determine the most important aspects of their operations that, with proper management, will guarantee their continued existence and prosperity. The strategic factors must be determined for this to occur. Additionally, some hospitals are working to market their operations abroad in the "medical tourism" market.

Jordan is an Arab country located in the north of the Arabian Peninsula, west of Asia. ([www.jordan.gov.jo](http://www.jordan.gov.jo)) It occupies an area of about 92 000 km(census.dos.gov.jo) , with an estimated total population of about 9.5 million, most of whom reside in the capital, Amman. 1,2 Jordan is renowned for its high-quality health care services and is considered one of the major destinations for medical tourism in the Middle East and North Africa region. ([www.medicaltourismassociation.com/en/research-and-surveys.htm](http://www.medicaltourismassociation.com/en/research-and-surveys.htm)). Jordan is a country that has limited natural resources and low middle income rates and high population growth rate. Statistics issued by Department of Statistics showed that the number of population in the kingdom has increased from 586 thousand people in 1952 to about 2.1 million in 1979 to about 4.2 million in 1994 and to almost 6.5 million people in 2013. Despite the decline in the crude birth rate of about 50 births per thousand populations in 1952 to 27.6 births per thousands of population in 2013, the reproduction levels in Jordan are still among the highest compared with the advanced states. ([www.hhc.gov.jo](http://www.hhc.gov.jo)) The population of Kingdom until end of 2016 shown in following Table 1.1.

Table 1.1: Estimated Population of the Kingdom by Governorate & Sex End 2016

Governorate	%	Total	Female	Male
Amman	42.0	4119500	1907800	2211700
Balqa	5.2	505400	234000	271400
Zarqa	14.3	1403000	661200	741800
Madaba	2.0	194500	91700	102800
Irbid	18.6	1819600	879400	940200
Mafraq	5.8	565300	273800	291500
Jarash	2.5	243700	117000	126700
Ajloun	1.8	181000	87800	93200
Karak	3.3	325500	155500	17000
Tafiela	1.0	99000	47200	51800
Ma'an	1.5	148100	70600	77500
Aqaba	2.0	193400	84000	109400
<b>Total</b>	<b>100.0</b>	<b>9798000</b>	<b>4610000</b>	<b>5188000</b>

Sources: Estimated Population of the kingdom by Governorate End 2016

## **1.2 Research Question:**

**Following question are aimed to be addressed by this study**

- RQ1. How services quality factors (i.e. Reliability, assurance and tangibility) could effect on patient loyalty and patient satisfaction of government hospital in Jordan?
- RQ2. Is patient satisfaction mediating the relationship between services quality and patient loyalty?
- RQ3. Is there any difference/gap in the services dimensions (i.e. Reliability, assurance and tangibility)?
- Q4. How services dimensions (. Reliability, assurance and tangibility) relate to patient loyalty?

## **1.3 Research objectives:**

2. To examine the effect of services quality on patient satisfaction and patient loyalty.
3. To determine the effect patient satisfaction on patient loyalty.
4. To determine the level of services quality that lead to achieved patient's satisfaction
5. To develop the measurement model services quality, patient satisfaction and patient's loyalty

## **2.0 Literature Review**

### **2.1 Services Quality**

There are three characteristics for service, which are intangibility, heterogeneity, and inseparability (Parasuraman, Zeithaml, & Berry, 1985). Rather than measuring the quality objectively for goods, service quality is determined by measuring the consumers' perceptions of quality. SERVQUAL was developed to measure the consumer perceptions of service quality (Parasuraman, Zeithaml, & Berry, 1988). The service quality study performed by Parasuraman and his colleagues is the masterpiece in service industry, especially the SERVQUAL questionnaire. It has been used in many industries such as hotel (El Saghier, 2015), management education (Datta & Vardhan, 2017), retail (Naik, Gantasala, & Prabhakar, 2010), and academic libraries (Asogwa, Asadu, Ezema, Ugwu, & C., 2014). SERVQUAL framework is a widely used tool to measure the healthcare service quality (Aliman & Mohamad, 2013; Butt & Run, 2010); (Alrubaiee & Alkaa'ida, 2011). According to SERVQUAL multiple-item scale, there are five dimensions in measuring the service satisfaction: reliability, responsiveness, assurance, empathy, and tangibles. This approach able to help the organization to focus on limited resource to maximize the profit (Butt & Run, 2010). Service quality has drawn a lot of research attention in service marketing since it shows the discrepancy between what customers expect from a service and what they think of the one that is actually offered (Yang et al., 2016). Providing excellent service quality is a tactic to win over the loyalty and satisfaction of current clients. According to Freund and Dorczak (2019) and Gilligan and Lowe (2018), quality for patient's entails receiving complete respect, attention, empathy, and understanding from all human elements interacting with them directly or indirectly during their hospital stay.

Hospital performance depends on the quality of health services. Service quality, according to Zeithaml et al. (1988), is the difference between the actual service that clients receive and the perceived service that they anticipate. Customers' opinions of the service provider and their interactions with the services themselves typically form the basis of service quality, which is a multifaceted construct (Hamzah et al., 2017).

### **2.2 Customer Satisfaction**

Feelings derived from the fulfillment of one's wishes, expectation and need is termed as satisfaction. The business has also concept of satisfaction. By receiving more than or equal than expectation one feels good and motivated, that state is his satisfaction (Hill, Roche & Allen 2007). Customer when pays for the product purchased he makes a standard about the performance of that product. The product performing better than the expectation generates loyal customers.

The satisfaction of customers is necessary for a successful organization but the value for employee satisfaction is there to achieve the vision and mission (Banker et al., 2000). The Banker also emphasized



that non-financial measures play the game of your goodwill and produce the long term benefits for the organizations. The services sector specially should take good care of the employee satisfaction. In such industry customers interact directly with employees and employee behavior, attitude turns the customer to retain or to leave. And the researches have proved that satisfied employee can satisfy the customer (Johnson, 1996).

Due to differing backgrounds and experiences, patient satisfaction is not a well-defined concept and is typically defined differently by different people (Fathi & Al, 2008). Additionally, the focus category of patient satisfaction and the health market looks at how the company can identify the most important needs, wants, expectations, and preferences of its clients or patients and markets. Furthermore, it looked at how the company develops relationships with patients or customers and identified the critical elements that contribute to customer acquisition, satisfaction, loyalty, retention, business growth, and sustainability (Hertz, 2006).

### 2.3 Customer loyalty

According to Bendapudi, Berry, Frey, Parish, and Rayburn (2006) and Platonova et al. (2008), patient loyalty is a crucial result for hospitals. It has been proposed that hospital financial results and patient health outcomes are positively correlated with patient loyalty. According to research on marketing, loyalty boosts profits (Prentice, 2013) and retention (Yi & Jeon, 2003). In any relationship, loyalty is a crucial element. According to Dick and Basu (1994), loyalty in the business world is the degree to which a customer's attitude and repeat business are related. A deeply held commitment to rebuy or repatriate a preferred product or service consistently in the future, despite situational influences and marketing efforts having the potential to call switching behavior" is a more precise definition of customer loyalty (Oliver, 1997). The marketing literature frequently discusses the importance of comprehending long-term relationships and customer retention Grant & Schlesinger, (1995) Payne & Rickard,( 1997) Reichheld & Scheffer, 2000). Thus, it is crucial for researchers and practitioners to comprehend the concept of loyalty. According to Bayin and Onder (2015), the notion of patient loyalty is an extension of "customer loyalty," which is discussed in the context of general business administration, into the healthcare industry.

According to research, loyalty leads to two different kinds of behavioral intentions: social and economic. Price, cost, and volume are the three ways that economic behavioral intentions affect the company. Word-of-mouth recommendations (i.e., positive) and complaints (i.e., negative) are the two ways that social behavioral intentions affect the company Smith, Bolton, & Wagner (1999). Consequently, purchase behavior is influenced by loyalty Solvang, (2007). Since keeping current customers is typically less expensive than acquiring new ones, it should come as no surprise that businesses value customer loyalty Reichheld & Sasser,( 1990).

The impression that a product or service makes shapes loyalty. Numerous studies have shown that consumer loyalty to a product or service is influenced by factors such as value, satisfaction, and quality Cronin, Brady, & Hult, (2000); Mattila, (2004); McDougall & Levesque, 2000). From the first impression of dependability and assurance, customer loyalty seems to develop in a stepwise manner (Griffith & White, 1999).

Researches indicates that for customers who have been with a company for a longer period of time, repurchase intent rises with satisfaction levels (Rust & Williams, 1994), and the degree to which customer satisfaction and loyalty are correlated is highly influenced by the individual characteristics of the customer (Homburg & Giering, 2001). It has been demonstrated that a number of mediating factors in the sequential development of loyalty alter the association between behavioral intentions and loyalty (Homburg & Giering, 2001). The degree of loyalty in competitive markets differs greatly between customers who are fully satisfied and those who are not (Jones & Sasser, 1995).

As early as the 1970s, customer loyalty was already on the rise. Repeated purchases have been linked to loyalty; later, this feature was added, and a broader definition was adopted. Kvedaraitė, Kvedaras, and Glinkskienė (2010) Gudynaitė contends that the marketing notion of loyalty has long been interpreted as a buyer's repeated use of a certain brand, good, or service, which was defined as a continuous, repetitive action. Since the concept of loyalty has changed in recent years, there has been a rising discussion concerning the significance of attachment in highlighting the importance of loyalty, as well as the psychological justification for the act (Glinskienė, Kvedaraitė, Kvedaras, 2010). Customers can show their loyalty to a company in a variety of ways, but the company must consistently preserve and grow its client base.

Maintaining a positive relationship with consumers is one of the company's initiatives to increase customer loyalty since it helps the business better understand their requirements, wants, and expectations. Customers should always be given priority and attention in all business operations, even if the company needs it. Otherwise, they may feel ignored. Kotler and Keller (2007) state consumer loyalty is the dedication of a consumer to continue buying or subscribing to a particular product or service in the future, despite the influence of external factors and marketing campaigns that may lead to behavioral shifts. Because of the fierce rivalry from other businesses, it's possible that customers will decide to use the goods and services of other companies instead. However, this is contested by the views of Mowen and Minor (1998), who state that loyalty is a state in which a customer has a favorable attitude toward a brand, is committed to the brand, and plans to make additional purchases in the future; in other words, a loyal customer is one who subscribes or makes repeat purchases. This view is supported by Utami (2006), who discovered that devoted customers will purchase products regardless of the demands and actions of rivals vying for clients. According to Kotler et al. (2006), keeping all current subscribers will often be more advantageous than losing new ones because luring new clients can be five times more expensive than keeping current ones. Customer loyalty is the devotion of the client following their experience or perception of the company's services. The client will then contrast their expectations with their perception of reality.

### **Hypotheses development**

#### **Service Quality and Patient Satisfaction:**

According to a study by Aliman and Mohamad (2013), patient satisfaction is impacted by tangible assurances of the quality of health services, which might subsequently reaffirm the patient's intention to return to the hospital. Additionally, Kitapci, Akdogan, and Dortyol (2014) found a favorable correlation between patient satisfaction and assurance and empathy. In their 2011 study, Ahmad et al. employed a questionnaire with a 5-point Likert scale to gauge patient satisfaction. The 40 items on the survey are divided into six categories: overall satisfaction, personnel satisfaction, treatment satisfaction, environment satisfaction, management satisfaction, and patient awareness. All of the patients admitted to the teaching hospital made up the study population. Then, using systematic random sampling, a sample size of 176 was determined. According to this study, management satisfaction, staff satisfaction, and patient awareness all predict patient happiness.

Alrubaiee and Alkaa'ida (2011) conducted an empirical analysis with data gathered from two private and two public hospitals. The patient was given a SERVQUAL-style questionnaire, and 88% of them responded. Patient satisfaction was significantly correlated with each of SERVQUAL's five dimensions. Research conducted in private hospitals has demonstrated a favorable correlation between patient satisfaction and the quality of healthcare services (Rad et al., 2010). The respondents were chosen to complete the questionnaire using the random sample technique. Sohail's work provided the questionnaire employed in the analysis (Sadiq Sohail, 2003). The poll was completed by 200 patients from the private hospital.

Wherefore this study hypothesized the following:

- H1:Service quality has a positive effect on patient satisfaction in Jordanian governmental hospital.

### **Services Quality and patient loyalty**

Previous studies on the quality of health services and the loyalty of health organizations reflect the strong relationship between these two principles (Hardeep 2008, Sungjin 2005, Michele 2006, Gray 2004, Blizzard, 2002). Loyal customers are also very important for the success of organizations because of their positive word of mouth and their patronage (Hamid, Ebrahimpour, Roghanian & Gheysari, 2013). Whereas Reichheld and Detrick (2003) argued that corporations and their loyal customers share values. Kamar and Shah (2006), distinguished loyalty in two respects: behavioral and attitudinal, while Lam, Shankar, Erramilli, & Murthy (2004) suggested repurchase expectations and references as loyalty dimensions. Loyalty of Behavior. It refers to the purchase characteristics of the purchaser. Buyers consistently buy from a specific company because of the lack of access to other alternatives (Jacoby and Chestnut, 1978). In the same way, Curtis, 2009 assessed behavioural loyalty, as the buyer's patronage behaviour. Attitudinal loyalty on the other hand was seen as a pure form of loyalty. Attitudinal loyalty is a positive feeling towards the brand (Curtis 2009; Dekimpe, Steenkamp, Mellens & Vanden, 1997). Study by (Amor, Talbi and Almubrad, 2018) argues that the quality of medical services has a positive impact on patient satisfaction, particularly in terms of service tangibility viewed as the most important for patients. For the purposes of this research, approximately 293 patients of King Khalid University Hospital underwent empiric investigations between 01-03-2016 and 30-04-2016.

Asnawi et, al (2019) showed that, the Service Quality provided by the hospital had a direct influence on the patients' satisfaction and loyalty, this result comes by using a methodology by involved the administration staff with questionnaire on the population of Hospital Sultan Nur Zahira patients at emergency unit. (Kulsum and Syah 2017) argue that Patient satisfaction had an important role on several aspects of health care organizations. Service quality was considered as an important factor for developing patient loyalty, they aimed in the study to determine the effect of service quality on loyalty with mediation of patient satisfaction, the finding conducted service quality has an influence on patient satisfaction, patient satisfaction has an influence on loyalty and service quality has an influence on loyalty. The Finding of (Afridi and Haider 2018) research discovered that healthcare quality has a substantial influence on Patients' loyalty. The mediating effect of Patients' commitment was also tested between the association of service quality and Patients' loyalty. Findings disclosed that customer's commitment completely intervenes the link of healthcare quality and Patients' loyalty.

Wherefore this study hypothesized the following:

- H2:Service quality has a positive effect on patient loyalty in Jordanian governmental hospital.
- **Patient satisfaction and patient loyalty**

Based on Coyne (1986), there are two critical thresholds affecting the link between customer satisfaction and customer loyalty. On the high side, when satisfaction reaches a certain level, loyalty increases dramatically, at the same time satisfaction declined to a certain point, loyalty dropped equally dramatically (Oliva, Oliver & MacMillan 1992.) The customer is link to a business success. Customer satisfaction and loyalty should be incorporated into the long-term goal of a business. Customer satisfaction is a key element for every organization wishing to increase customer loyalty and create a better business achievement. The role of satisfaction in loyalty largely indicates that the former is a key determinant of the latter (Dick & Basu 1994.).Customer satisfaction and loyalty represent a top priority of the company's success and profit. Satisfaction does not automatically lead to loyalty it needs a step by step process. Steps are described as customers going through different phases such as awareness, exploration, expansion, commitment, and dissolution. (Arantola 2000.) Customer loyalty can be considered to be a byproduct of customer satisfaction. The satisfaction of business customer leads to

customer loyalty (Fornell 1992.) Customer loyalty will increase significantly when satisfaction accomplishes at a certain level and at the same time customer loyalty will decline automatically if the satisfaction level drops to a certain point. Moreover, highly satisfied customers are tending to be more loyal than the customers who are merely satisfied. Overall, it is clear that there is a significant positive relationship between customer satisfaction and customer loyalty. Customer loyalty leads to an increase in both sales and profitability (Chi 2005.)

Study by Rostami et al. (2018) showed that patient satisfaction with service quality affects their hospital choices and increases patient loyalty, this study were tacked place in 2017 in Kerman, Iran. The participants of the study were all patients admitted to different hospital wards (except emergency) in three academic hospitals affiliated to Kerman University of Medical Sciences (Shafa, Afzalipour, and Shahid Bahonar). The sample size of this study was 260 patients, and the Stratified Random Sampling method was used to select the samples. Data were analyzed by SPSS version 20. In order to simplify the interpretation of the data, Likert's scale of satisfaction with the service quality dimensions is coded to values from 0 to 100 (100 = completely agree, 75 = agree, 50 = not sure, 25 = disagree, and 0 = completely disagree). The finding indicated that in order to increase patient loyalty to academic hospitals, must improving the services quality along with delivering cost-effective cares, improving hospital environment, and providing useful information to patients are recommended. Wong, Tong, and Wong (2014) conducted a quantitative study on the healthcare insurance industry in Hong Kong using a questionnaire survey of over 500 participants. Customer satisfaction has a positive effect on customer loyalty and provides insights into how hospital branding influences the public's perceptions of hospitals and patient satisfaction Wong et al., (2014). Salanova, Llorens, Cifre, and Martinez (2012), conducted a study to validate the Healthy and Resilient Organization (HERO) model. The study involved 14 CEOs, 710 employees, 84 managers, and 860 customers. Healthy employees fully mediate the positive relationship between healthy organizational resources and practices, and healthy organizational outcomes, and employees' excellent performance positively predicts customer loyalty and satisfaction with the company (Salanova et al., 2012).

McDougall and Levesque (2000) found that consumer satisfaction was strongly related to the establishment of loyalty (an average  $R^2 = 0.833$  for the four units of service). Fornell et al. (1996) created a model based on the American Customer Satisfaction Index (ACSI) and found that the ACSI was positively related to customer loyalty. Gronhold et al, (2000) subsequently developed a model of the European Customer Satisfaction Index (ECSI) and conducted a pilot test in 12 countries, including Denmark. Customer satisfaction had a strongly positive effect on the establishment of loyalty ( $R^2 = 0.691$ , on average). Olsen (2002) conducted a split-sample survey of households in Norway to examine evaluations of different seafood products. The authors defined and measured relative attitudes and compared the results to evaluations of dissimilar or individual products. Their model included satisfaction as a mediator between quality and repurchasing loyalty. The relationship between satisfaction and loyalty was significant and positive across products in both the comparative and non-comparative approaches.

Wherefore this study hypothesized the following:

- H2: patient satisfaction has a positive effect on patient loyalty in Jordanian governmental hospital.

### **3.0 Methodology**

According to the framework that given in Figure 3.1 the influenced the work of this research is the to measurement the relationship of services quality and patient satisfaction that impact on patient' loyalty. Several researches have supported the relationships between the variables of, service quality, and patient' loyalty by medating of patient satisfaction as found in previous studies (Parasurman et al. 1988; Amin, 2019; Kesuma et al, 2013; Pathak, 2017; Baba, 2017; Lestariningsih, Hadiyati and Astuti, 2018; AL-Mhasnah et al, 2018). By using Qualitative analysis, the p-value for the H1 and H2.



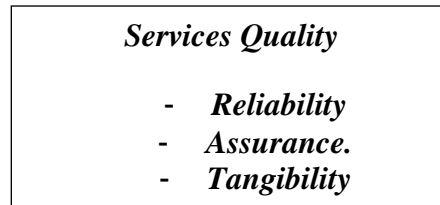


Figure 3.1: Theoretical framework

#### 4.0 Research methodology:

##### 4.1 Population

One method to define the population is as "the entire group of people, activities, or interesting stuff that scientists want to explore and conclude" (Sekaran and Bougie 2014). Sekaran and Bougie (2013) define an accessible population as any person or group that may have significant ramifications but is remote and difficult to contact. They also point out that additional criteria might be used as a guide to determine the available population. These consist of the sampling approach (including sample type, sample size, geographic location, and other descriptive data), the sampling framework, the completion rate, and a thorough demographic explanation of how the researchers hope to extrapolate the findings. The population, according to Sekaran and Bougie (2013), is the entire membership of a certain group that the researcher is studying or gathering information for in order to make data-driven decisions. A population could be defined as a whole set of individuals or organizations that have the capacity to collect data. Patients in Jordanian public hospitals in the Hashemite Kingdom make up the study's target population.

##### 4.2 Sample size and selection

The non-probability sampling strategy is the one that the researcher will employ. In order to choose sample items, the non-probability sampling technique depends more on the researcher's judgment than on chance (Malhotra et al, 2012). Better estimates of the population characteristics might be obtained using the non-probability samples technique. In order to choose respondents for this study, the researcher will employ judgmental sampling in conjunction with non-probability sampling. Judgmental sampling is a sampling technique in which the researcher uses their judgment to choose the population's components. Because the sample chosen can be representative of the population of interest, this technique was chosen (Malhotra, 2009).

Table 4.1: Population in North and Middle Province Government Hospitals in Jordan

North Province Hospitals			
City	Population	No of MOH Hospitals	No of Beds
Irbid	1911600	10	847
Mafrq	59300	4	291
Jarash	256000	1	159
Ajloun	190200	1	90
Total	2417100	16	1387
Middle Province Hospitals			



**Table 4.1** shows the population in the northern region of the Kingdom, the number of hospitals present, and the number of beds that provide health services to the population. It shows that some cities sometimes need a greater number of hospitals

### 4.3 Results

**Table 4.2** Composite Reliability and Average Variance Extracted (AVE)

	<b>CR</b>	<b>AVE</b>
<b>Health Service</b>	0.943	0.847
<b>Patient Satisfaction</b>	0.901	0.819
<b>Patient Loyalty</b>	0.912	0.838
<b>Main</b>	0.855	0.597
<b>Reliability</b>	0.842	0.572
<b>Tangibility</b>	0.863	0.611
<b>Assurance</b>	0.845	0.577
<b>Attitude</b>	0.862	0.609
<b>Behavior</b>	0.867	0.620

Table 4.2 above presents the Composite Reliability and Average Variance Extracted for all constructs applied in the model. The CR is believed satisfied when the construct reliability having the value more than 0.70. Given on this result, all constructs were reliable. In addition to that, the construct validity is to be tested by the AVE method. The validity is suggested established when the validity values more than 0.50. In this case, all constructs were valid.

**Table 4.3** Discriminant Validity

CONSTRUCT	HEALTH SERVICE	PATIENT SATISFACTION	PATIENT LOYALTY
<b>HEALTH SERVICE</b>	<b>0.920</b>		
<b>PATIENT SATISFACTION</b>	0.59	<b>0.905</b>	
<b>PATIENT LOYALTY</b>	0.59	0.66	<b>0.915</b>

The Table 4.3 presents the discriminant validity result. The discriminant validity is established when the value of diagonal (bold) is higher than all construct correlations (Hair et al., 2017). In this case, the results meet with the Hair suggestions. In additions to that, the construct correlation also lower than 0.85.

**Table 4.4 : Health Service on Patient Satisfaction**

		<b>Estimate</b>	<b>S.E.</b>	<b>C.R.</b>	<b>P</b>	<b>Result</b>
Patient Satisfaction	<--- Health Service	.240	.064	3.766	***	Significant

Table 4.4 presents the effect of Health Services on Patient Satisfaction. The likelihood of obtaining a crucial ratio with an absolute value of 3.766 is less than 0.001. In other words, at the 0.001 level (two-



tailed), the regression weight for Health Service in the prediction of Patient Satisfaction is statistically different from zero. Thus, the research hypothesis for this path is supported.

Table 4.5: Patient Satisfaction on Patient Loyalty

		Estimate	S.E.	C.R.	P	Result
Patient Loyalty	<--- Patient Satisfaction	.377	.075	5.023	***	Significant

Table 4.5 presents the effect of Patient Satisfaction on Patient Loyalty. The likelihood of obtaining a crucial ratio with an absolute value of 5.023 is less than 0.001. In other words, at the 0.001 level (two-tailed), the regression weight for Patient Satisfaction in the prediction of Patient Loyalty is statistically different from zero. Thus, the research hypothesis for this path is supported.

Table 4.6: Health Services on Patient Loyalty

		Estimate	S.E.	C.R.	P	Result
Patient Loyalty	<--- Health Service	.165	.067	2.471	.013	Significant

Table 4.6 presents the effect of Health Services on Patient Loyalty. The likelihood of obtaining a crucial ratio with an absolute value of 2.471 is less than 0.001. In other words, at the 0.001 level (two-tailed), the regression weight for Staff Performance in the prediction of Patient Loyalty is statistically different from zero. Thus, the research hypothesis for this path is supported.

#### 4.4 Mediation Testing

The researcher can use the Bootstrapping re-sampling approach to confirm the results of a traditional mediation test. The number of bootstrap samples may range from 500 to 5000. The technique would determine the mean and standard error for each sample using the IBM-SPSS-AMOS software. The algorithm will generate estimates based on the re-sampling procedure.

The total effect, direct effect, and indirect effect in the relationship between constructs are calculated using the sampling distribution. Finally, the total, direct, and indirect effect 95% confidence intervals are given. The algorithm computes the effects' lower and upper bounds, as well as their two-tailed significance. The outcomes of the bootstrap procedure will be compared to conventional approaches. Both outcomes are typically constant. However, if any of the results were conflicting, the bootstrapping results would be acceptable.

Table 4.7: Standardized Indirect Effect (p-value)

	Health Service
Patient Loyalty	.001

In Table 4.7 the standardized indirect effect of **Health Service Quality** on **Patient Loyalty** through **Patient Satisfaction** was statistically significant,  $p=.001$

Table 4.8: Standardized direct Effect (p-value)

	Health Service	Patient Satisfaction
Patient	.002	...

	<b>Health Service</b>	<b>Patient Satisfaction</b>
<b>Satisfaction</b>		
<b>Patient Loyalty</b>	.018	.002

Table 4.8 reveals statistically significant direct effects among the studied variables. Patient Satisfaction exerts a strong influence on Health Service ( $p = 0.002$ ), while Patient Loyalty significantly affects both Health Service ( $p = 0.018$ ) and Patient Satisfaction ( $p = 0.002$ ). These findings emphasize the interconnected roles of satisfaction and loyalty in shaping healthcare service perceptions

Table 4.9: Standardized direct Effect

	<b>Health Service</b>	<b>Patient Satisfaction</b>
<b>Patient Satisfaction</b>	.252	.000
<b>Patient Loyalty</b>	.159	.347

Table 4.9 reveals that Health Service quality directly increases Patient Satisfaction ( $\beta = 0.252$ ) and, indirectly via satisfaction, strongly drives Loyalty ( $\beta = 0.347$ ). Service improvements are critical for patient retention

Table 4.10: Standardized indirect Effect

	<b>Health Service</b>
<b>Patient Loyalty</b>	.087

**Table 4.11:** Summary of the significance level

(Health Service  $\rightarrow$  Patient Satisfaction  $\rightarrow$  Patient Loyalty)

	<b>Indirect Effect (axb)</b>	<b>Direct Effect (c)</b>
Bootstrapping Results	0.087	0.159
Bootstrapping P-Value	0.001	0.018
Result	Significant	Significant
Type of Mediation	<b>Partial Mediation</b> since direct effect is <b>also</b> significant	

Based on the result presented in Table 4.11, the Patient Satisfaction construct has mediated the effect; and health services quality on Patient Loyalty. Thus, one can have concluded that all research hypotheses are statistically significant.

## 5.0 Discussion

Current study examines the research question, i.e. the effect of health services factors influences the patient's satisfaction that aides in constructing loyalty intentions in hospitals of Jordan. The purpose of the study was to assess patients' perspectives on various aspects of health services, including reliability, assurance and tangibility Mehrotra, & Bhartiya, (2020), and to examine how these perceptions influence patient satisfaction and loyalty. The study is descriptive, aiming to explore key research questions. Data was collected from public hospitals to evaluate patients' perceptions and determine whether they are satisfied and loyal.

The results indicate that in government hospitals, health services quality plays a significant role in impacting patient loyalty and is a strong predictor of patient satisfaction Liu et.al (2021). It highlights that the physical facilities, infrastructure, hospital operations, medical equipment, staff appearance, and



other aspects are well-maintained. Additionally, the hospital management places a strong emphasis on, all of which are essential for patients' healthcare experiences.

### 6.0 Conclusion and Future Study

According to the model the researcher developed, this will provide a substantial addition to an existing body of knowledge regarding the connection between patient satisfaction and the quality of health services, which in turn affects patient loyalty. This model also highlights the significance of patient satisfaction in the relationship between patient loyalty and the quality of health services, which aids Jordanian public hospitals in better meeting the demands of its patients. On the other side, this model will help planners and health administrators build the health system. Future research still needs to expand this model by adding more variables that affect patient loyalty and satisfaction. Jordan's Ministry of Health and relevant regulatory bodies must prioritize enhancing the quality of healthcare services in hospitals located outside major urban centers. Furthermore, hospitals should be mandated to comply with internationally recognized service quality standards as a prerequisite for continued operation. Based on reliability assessments, healthcare planners and policymakers should allocate additional funding to ensure patients receive the expected level of care. Increased financial investment would improve service delivery and patient satisfaction. To address rising patient volumes particularly in government hospitals' internal medicine departments medical staff must undergo regular, efficient, and adaptable training programs.

### References :

- Awang, Z., Wan Afthanorhan, W. M. A., Lim, S. H., & Zainudin, N. F. S. (2023). SEM Made Simple 2.0: A Gentle Approach of Structural Equation Modelling. Penerbit UniSZA
- Afthanorhan, A., Awang, Z., Aimran, N., & Arifin, J. (2021). An Extensive Comparison Between CBSEM and Consistent PLS-SEM On Producing the Estimates of Construct Correlation in Applied Research. In *Journal of Physics: Conference Series* (Vol. 1874, No. 1, p. 012083). IOP Publishing.
- Hair Jr, J. F., Sarstedt, M., Ringle, C. M., & Gudergan, S. P. (2017). *Advanced issues in partial least squares structural equation modeling*. SAGE publications.
- Hair, J. F., Hult, G. T. M., Ringle, C. M., & Sarstedt, M. (2017). *A primer on partial least squares structural equation modeling (PLS-SEM)* (2nd ed.). SAGE Publications, Inc
- Zeithaml, V. A., Bitner, M. J. & Gremler, D. D. (2009). *Services marketing: integrating customer focus across the firm*. (5th Edition). New York: McGraw-Hill.
- Zineldin M. (2006). The quality of health care and patient satisfaction: an exploratory investigation of the 5Qs model at some Egyptian and Jordanian medical clinics. *International Journal for Quality in Health Care*; vol. 19, pp. 60–99.
- Oliva, T., Oliver, R. and McMillan, I. (1992), "A catastrophe model for developing service satisfaction strategies", *Journal of Marketing*, Vol. 56 No. 3, pp. 83-95
- Oliver, R. (1997), *Satisfaction: A Behavioural Perspective on the Consumer*, McGraw Hill, New York, NY
- Kumar, V., Shah, D., & Venkatesan, R. (2006). Managing retailer profitability—one customer at a time!. *Journal of Retailing*, 82(4), 277-294.
- Hair, J.F., Black, W.C., Babin, B.J. & Anderson, R.E. 2014, *Multivariate Data Analysis, A Global Perspective*. 7th Edition, Prentice Hall, Upper Saddle River.

- Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1985). A conceptual model of service quality and its implication, *Journal of Marketing*, 49, 41-50
- Parasuraman, A. Zeithaml, VA. and Berry, LL., 1988. "SERVQUAL: A Multiple Item Scale for Measuring Consumer Perceptions of Service Quality". *Journal of Retailing*, 64(1): 12-40.
- El Saghier, N. M. (2015). Managing Service Quality: Dimensions of service quality: a study in Egypt. *Managing Service Quality*, 9, 56-63.
- Datta, K. S., & Vardhan, J. (2017). A SERVQUAL based framework for assessing quality of international branch campuses in UAE: A management students' perspective. [journals.sagepub.com/home/sgo](http://journals.sagepub.com/home/sgo), 1-9.
- Naik, C., Gantasala, S., and Prabhakar, G. (2010). Service Quality (SERVQUAL) and Its Effect on Customer Satisfaction in Retailing, *European Journal of Social Sciences*, Vol. 16, No. 2, pp. 239-251.
- Asogwa, B. E., Asadu, B. U., Ezema, J. U., Ugwu, C. I., & Ugwuanyi, F. C. (2014). Use of Servqual in the evaluation of service quality of academic libraries in developing countries. *Library Philosophy and Practice*, 2014(1).
- Aliman, N. K., & Mohamad, W. N. (2013). Perceptions of Service Quality and Behavioral Intentions: A Mediation Effect of Patient Satisfaction in the Private Health Care in Malaysia. *International Journal of Marketing Studies*, 5(4), 15–29.
- Alrubaiee L, Alkaa'ida F. The mediating effect of patient satisfaction in the patients' perceptions of healthcare quality-patient trust relationship. *Int J Mktg Stud*. 2011;3(1):103.
- Alrubaiee, L., & Alkaa'ida, F. (2011). 9278-36366-1-PB.pdf. *International Journal of Marketing Studies*, 3(1), 103–127. <https://doi.org/10.1.1.663.5764>
- Butt MM, de Run EC. Private healthcare quality: applying a SERVQUAL model. *International Journal Health Care Qual Assur*. 2010;23(7):658–73.
- Hill, N., Roche, G. & Allen, R. 2007. *Customer Satisfaction: The customer experience through the customer's eyes*. London: Cogent Publishing Ltd.
- Banker, R. D., Konstans, C. & Mashruwala, R. (2000) A contextual study of links between employee satisfaction, employee turnover, customer satisfaction and financial performance. Unpublished manuscript, University of Texas at Dallas.
- Johnson, J. W. (1996) Linking employee perceptions of service climate to customer satisfaction. *Personnel Psychology*, Vol.49, pp.831-851.
- Fathi, B., & Al, T. (2008). Faculty of Graduate Studies Patient ' s Satisfaction With Hospital Services At Nablus District , West Bank , Palestine.
- Hertz, H. S., 2006, Criteria for performance excellence. s.l.:s.n.
- Bendapudi, N. M., Berry, L. L., Frey, K. A., Parish, J. T., & Rayburn, W. L. (2006). Patients' perspectives on ideal physician behaviors. Paper presented at the Mayo Clinic Proceedings.
- Prentice, C. (2013). Service quality perceptions and customer loyalty in casinos. *International Journal of Contemporary Hospitality Management*, 25(1), 49-64.
- [Yi, Y., and Jeon, H. \(2003\). "Effects of loyalty programs on value perception, program loyalty, and brand loyalty", \*Journal of the Academy of Marketing Science\* Vol. 31, No.3, 229-240.](#)
- Dick, A. S., & Basu, K. (1994). Customer loyalty: toward an integrated conceptual framework. *Journal of the academy of marketing science*, 22(2), 99-113.
- Oliver, R. (1997), *Satisfaction: A Behavioural Perspective on the Consumer*, McGraw Hill, New York, NY
- Grant, A. W., & Schlesinger, L. A. (1995). Realize your customers' full profit potential. *Harvard Business Review*, 73(5), 59-72.
- Payne, A., & Rickard, J. (1997). Relationship Marketing, customer retention and firm profitability. Working Paper Cranfield School of Management.
- Reichheld, B. F. E., & Detrick, C. (2003). Want to know how to keep expenses low? Think loyalty. *American Banker*, 168(181), 6
- Reichheld, F. F., & Scheffer, P. (2000). E-loyalty. *Harvard Business Review*, 78(4), 105- 113



- Bayin, G., & Onder, O. R. (2015). Determination of the Effect of Corporate Image of Health Institutions on Patient Loyalty. *EGE Academic Review*, 15(4), 577–586.
- Leggat, P., Watt, K., Franklin, R. C., Smith, E. C., Ryan, B. J., Burkle, F. M., & Aitken, P. (2016). Defining, Describing, and Categorizing Public Health Infrastructure Priorities for Tropical Cyclone, Flood, Storm, Tornado, and Tsunami-Related Disasters. *Disaster Medicine and Public Health Preparedness*, 10(04), 598–610.
- Cronin, J. J., Brady, M. K., & Hult, G. T. M. (2000). Assessing the effects of quality, value, and customer satisfaction on consumer behavioral intentions in service environments. *Journal of retailing*, 76(2), 193-218.
- Mehrotra, D., & Bhartiya, S. (2020). Results of mapping patients expectation using SERVQUAL. *Journal of Healthcare Quality Research*, 35(6), 381-390.
- Liu, S., Li, G., Liu, N., & Hongwei, W. (2021). The impact of patient satisfaction on patient loyalty with the mediating effect of patient trust. *INQUIRY: The Journal of Health Care Organization, Provision, and Financing*, 58, 00469580211007221.