

Determinants of Patient Satisfaction: An Analysis of Hospital Service Quality in Tertiary Hospitals, Henan Province

Wang Yusen¹ and Nor Azima Binti Ahmad^{2*}

¹Graduate School of Management, and Science University, University Drive, Off Persiaran Olahraga, Section 13, 40100, Selangor, Malaysia

²Post Graduate Centre, Management and Science University, University Drive, Off Persiaran Olahraga, Section 13, 40100, Selangor, Malaysia

Received: 30/09/2025

Revised: 17/10/2025

Accepted: 18/11/2025

Published: 25/11/2025

ABSTRACT

Purpose: Occupational stigma is a significant yet under-researched factor affecting employee retention in the healthcare sector. This study aims to investigate the psychological mechanisms linking occupational stigma to turnover intention among frontline healthcare workers. It specifically examines the mediating roles of professional commitment, career commitment, and emotional exhaustion, and the buffering effect of occupational self-esteem on this relationship. **Design/methodology/approach:** A quantitative, cross-sectional survey design was employed. Data were collected from 300 frontline healthcare workers (nurses, healthcare assistants, and support staff) in Zhengzhou, China, using a convenience sampling method. The hypothesized relationships were tested using Partial Least Squares Structural Equation Modeling (SEM-PLS), an approach well-suited for analyzing complex latent variable models. **Findings:** The results confirm that occupational stigma is a significant driver of turnover intention. This relationship is significantly mediated by diminished professional and career commitment and heightened emotional exhaustion. Furthermore, occupational self-esteem was found to significantly moderate the relationship, with the negative effects of stigma being weaker for employees with higher self-esteem. **Practical implications:** The findings provide actionable insights for healthcare administrators. To mitigate turnover, management should implement targeted interventions to bolster occupational self-esteem, foster professional and career commitment through clear advancement paths, and provide resources to combat emotional exhaustion. **Originality/value:** This study advances turnover literature by integrating occupational stigma within the robust theoretical frameworks of Conservation of Resources (COR) Theory and Social Identity Theory. It provides a comprehensive model that elucidates the relationship between professional commitment, career commitment, emotional exhaustion, and occupational self-esteem, and how these factors influence the turnover intentions of vital frontline healthcare employees.

Keywords: Occupational stigma, turnover intention, professional commitment, career commitment, emotional exhaustion, occupational self-esteem, healthcare industry, Conservation of Resources (COR) Theory

INTRODUCTION:

The increase in patient satisfaction from 76.8% in 2018 to 78.9% in 2022 (Henan Bureau of Statistics, 2023) reflects policy efforts such as digital healthcare integration and enhanced primary care networks (Liu et al., 2023). However, challenges remain, including overcrowding in top-tier hospitals and inconsistent service quality in rural clinics (Zhou et al., 2022). A 2023 study found that waiting times and doctor-patient communication were the two most cited factors affecting satisfaction, with 65% of surveyed patients in tertiary hospitals reporting dissatisfaction with consultation durations (Xu et al., 2023). Additionally, while healthcare expenditure has grown (reaching ¥340 billion in 2022), out-of-pocket costs remain a burden for low-income households (National Healthcare Security Administration, 2023). Future reforms must address these gaps through tiered medical systems and value-based payment models to ensure sustainable

improvements in patient satisfaction (Yang & Wei, 2023).

However, China's hospital service quality evaluation system still faces numerous challenges. The impact of the COVID-19 pandemic has exposed deep-seated issues in hospital management. A 2023 survey report from the Chinese Hospital Association shows that only 38.7% of hospitals have established a comprehensive service quality evaluation system (Chinese Hospital Association, 2023). More critically, the urban-rural disparity remains prominent. Data from the National Bureau of Statistics in 2023 indicates that the average service quality evaluation score of county-level hospitals is 15.6 percentage points lower than that of urban tertiary hospitals (National Bureau of Statistics, 2023). These issues reflect systemic defects in the current hospital service quality evaluation system, including inconsistent standards, incomplete indicators, and unscientific

How to cite: Wang Yusen and Nor Azima Binti Ahmad. Determinants of Patient Satisfaction: an Analysis of Hospital Service Quality in Tertiary Hospitals, Henan Province. *Advances in Consumer Research*. 2025;2(5):2135–2150

methods. Particularly in the context of the rapid development of digital healthcare, traditional evaluation methods are no longer adequate. Wang and Zhang (2023) point out that existing satisfaction surveys inadequately cover new service models such as mobile healthcare and remote consultations, leading to biased evaluation results.

Patient satisfaction research has long been an important topic in the medical field, serving as a key indicator for measuring healthcare service quality and the effectiveness of patient-centered care. Over the past few decades, as healthcare institutions, policymakers, and researchers have increasingly recognized the importance of patient satisfaction, research on its influencing factors and significance has experienced explosive growth (Brian Williams, 1994). Particularly after 2020, the COVID-19 pandemic has placed unprecedented challenges on global healthcare systems, further highlighting the importance of understanding and improving patient satisfaction (Alharbi & Alzahrani, 2022). Patient satisfaction is a multidimensional concept that reflects patients' perceptions and experiences of the healthcare services they receive (Pakurár et al., 2019). It serves as a critical feedback mechanism for healthcare institutions, helping to assess service quality and implement necessary improvements. Higher patient satisfaction is closely associated with better clinical outcomes, increased treatment adherence, and stronger patient-provider relationships (Dang et al., 2020).

Key factors affecting patient satisfaction can be categorized into patient-related, provider-related, and system-related factors. Cultural beliefs and language barriers significantly impact satisfaction. A 2022 study published in *BMC Health Services Research* found that minority patients in the U.S. reported lower satisfaction due to perceived discrimination and lack of culturally sensitive care (Saha et al., 2022). Patients with limited health literacy often struggle to understand medical instructions, leading to decreased satisfaction (Batterham et al., 2021). Effective patient-provider communication remains the strongest predictor of satisfaction. A 2023 meta-analysis in *PLOS ONE* confirmed that empathetic communication reduces patient anxiety and improves satisfaction (Kim et al., 2023). Prolonged waiting times continue to be a major cause of dissatisfaction. Post-pandemic data shows that clinics using digital check-in systems reduced waiting times by 30%, thereby improving satisfaction (Accenture, 2023). A 2022 study in *The Lancet* linked poor hospital cleanliness and outdated facilities to lower satisfaction scores in low-income countries. The study found that healthcare infrastructure significantly impacted patient satisfaction. Additionally, hospitals using AI chatbots to handle patient inquiries saw a 25% increase in satisfaction (Deloitte, 2023).

Recent global surveys reveal disparities in patient satisfaction across regions. The Commonwealth Fund's 2023 annual report showed that Switzerland and the Netherlands had the highest patient satisfaction (85%), while the U.S. scored only 72%, primarily due to high

costs and barriers to access (Commonwealth Fund, 2023). In contrast, a 2023 World Health Organization study in Africa found that regions implementing community health worker programs saw a 15% increase in satisfaction. Patient satisfaction remains a vital metric for assessing healthcare quality, with its influencing factors continuously evolving alongside advancements in technology, equity, and policy. Future research needs to address disparities and leverage digital innovations to enhance patient experiences.

High patient satisfaction is not only a core indicator of healthcare service quality but also generates multidimensional positive effects. Characteristics of hospitals with high satisfaction typically include physician-patient communication durations exceeding 15 minutes, implementation of DRG payment systems (reducing patient out-of-pocket costs by 18%), provision of high-quality nursing services (achieving satisfaction scores of 92.5 points), increased patient loyalty (2.3-fold higher willingness for return visits), and reduced medical disputes (41% decrease in annual complaint rates) (Wang, Jiang, Li, & Chen, 2023). Research demonstrates that enhanced patient satisfaction significantly strengthens physician-patient trust (Zhou et al., 2023), improves treatment adherence by 28% (Liu & Zhang, 2024), elevates hospital reputation and patient loyalty, thereby reducing medical dispute rates (Henan Health Commission, 2023). Furthermore, hospitals with high satisfaction receive higher medical insurance reimbursements under DRG payment models and attract more high-quality medical professionals (Wang et al., 2024), creating a virtuous cycle.

Persistent neglect of these structural deficiencies will lead to short-term consequences including a continued 15% annual increase in medical disputes and patient outflow to other provinces (Chen et al., 2023). Long-term consequences may include heightened hospital accreditation risks (failure in tertiary hospital re-evaluation), exacerbated talent drain, ultimately weakening the competitiveness of Henan Province as a regional medical center (OECD, 2023).

Existing research predominantly focuses on analyzing satisfaction influencing factors while lacking systematic improvement frameworks for reconstructing service quality across "elements-process-outcomes" dimensions. There is also insufficient localized empirical evidence and targeted intervention studies specific to tertiary hospitals in Henan Province. This study aims to address these gaps by quantitatively analyzing the impacts of missing service elements and proposing actionable tiered improvement solutions to inform policy formulation with scientific evidence. The objective of this research is to examine the impact of hospital services on patient expectations and patient satisfaction.

INTERVIEW LITERATURE

The evolution of patient satisfaction research reflects a paradigmatic shift in healthcare from a "disease-centered" to a "patient-centered" model (Stewart et al.,

2024). Although the field has developed a relatively solid theoretical foundation—from Balint’s patient perspective theory, to Donabedian’s quality assessment framework, to the application of Oliver’s Expectation Confirmation Theory—there remains a significant gap between theory and practice. This gap is particularly evident in the context of current healthcare system digitalization and policy reforms, where traditional research frameworks struggle to fully explain the newly emerging mechanisms underlying satisfaction formation.

The theoretical contribution of this study lies in constructing an integrated “Service Quality–Patient Expectation–Satisfaction” model, which addresses the current research gap regarding variations in technology acceptance. In terms of policy impact analysis, by tracking changes in the reasonableness of hospital treatment costs and patient satisfaction, this research provides empirical evidence for policy refinement. This longitudinal study design fills the gap in dynamic monitoring during the healthcare transition period. At the methodological level, this research adopts a survey-based approach and establishes a model linking physiological stress responses with subjective satisfaction, thereby addressing the limitation of relying solely on subjective data in existing studies.

Research in the Chinese context holds unique value. Existing satisfaction theories are largely based on the development of Western healthcare systems, while China’s unique “relationship culture” and uneven distribution of medical resources have shaped a distinct pattern in the formation of patient expectations. By analyzing the differences in satisfaction drivers in tertiary hospitals, this study aims to enhance the localization of theoretical frameworks. A stratified sampling design is employed to ensure the generalizability of the research findings. By filling these research gaps, this study aspires to serve as a bridge between traditional satisfaction theories and the digital healthcare era, laying the groundwork for a more comprehensive and accurate patient experience evaluation system.

Although existing empirical studies have examined the relationship between factors such as service communication, cost fairness, clinical care quality, and environmental facilities, the specific paths and interaction mechanisms between these variables remain unclear. Most existing literature focuses on examining the impact of a single factor on satisfaction, lacking systematic modeling and validation of the path relationships among multiple factors. Additionally, few studies delve into the interactive effects between different variables and the potential mediating or moderating mechanisms. Therefore, the theoretical integration of these research results is relatively low, and the research perspectives are dispersed, making it difficult to comprehensively reveal how these factors work together to influence patient satisfaction. Based on this, this study aims to explore the path relationships among these variables by constructing a comprehensive

model, in order to enhance theoretical explanatory power and fill this research gap.

Expectation Confirmation Theory (ECT) was proposed by Richard L. Oliver in 1980 and has since become one of the most influential models in the study of consumer satisfaction. The theory is primarily used to explain how consumer satisfaction is formed after the use of a product or service. According to ECT, consumers develop certain expectations prior to purchase or use, which are shaped by factors such as past experiences, word-of-mouth, advertising, and personal needs. After consumption, consumers evaluate the actual performance of the product or service—referred to as perceived performance. They then compare this perceived performance with their initial expectations, resulting in a process called confirmation or disconfirmation. When performance matches expectations, it is called simple confirmation; when it exceeds expectations, positive disconfirmation occurs; and when it falls short of expectations, negative disconfirmation arises (Oliver, 1980) .

This confirmation or disconfirmation directly influences the consumer’s level of satisfaction. Positive disconfirmation (i.e., when performance exceeds expectations) typically leads to higher satisfaction, while negative disconfirmation results in dissatisfaction. Oliver (1980) emphasized that satisfaction is not determined by performance alone, but by the consumer’s psychological assessment of whether their expectations have been met or not. ECT has served as a foundational theory for subsequent research in areas such as service quality, customer loyalty, and continued usage intentions.

This theoretical framework was subsequently widely applied in multiple fields such as information systems, medical services and online services. In the medical context, ECT provides important theoretical support for analyzing patient satisfaction, and is particularly suitable for explaining how patient expectations affect their evaluation process of medical services (Hossain & Quaddus, 2011). The core of this theory lies in that when the actual medical experience meets or exceeds patients’ expectations, it will generate higher satisfaction; otherwise, it will lead to dissatisfaction.

This study adopts the Expectation Confirmation Theory (ECT) framework to explore the mechanisms by which various dimensions of healthcare service quality influence patient satisfaction. Before seeking medical care, patients form expectations about the quality of healthcare services based on personal experience, public information, and recommendations from others. These expectations encompass multiple aspects, including doctor–patient communication, cost fairness, treatment outcomes, and environmental facilities. During the actual medical experience, patients evaluate the service by comparing their real experiences with their prior expectations, and this evaluation directly affects their final level of satisfaction (Rahi & Abd. Ghani, 2019).

How to cite: Wang Yusen and Nor Azima Binti Ahmad. Determinants of Patient Satisfaction: an Analysis of Hospital Service Quality in Tertiary Hospitals, Henan Province. *Advances in Consumer Research*. 2025;2(5):2135–2150

There are significant differences in baseline expectations among different patient groups—for example, patients with high expectations are more likely to be dissatisfied due to minor service shortcomings, while those with lower expectations may feel satisfied with average service. This phenomenon is particularly evident in different healthcare scenarios, such as emergency care versus chronic disease management (Fu, Zhang & Chan, 2018).

Service-Dominant Logic (S-D Logic) is a novel marketing paradigm first proposed by Vargo and Lusch (2004). The core idea of S-D Logic is that “service” rather than “product” is the fundamental unit of market exchange. Under this framework, businesses are no longer seen as the sole creators of value but as partners in the co-creation of value with customers. S-D Logic emphasizes service exchange based on intangible

resources like knowledge and skills, and focuses on the interactive nature of service and customers' subjective value perceptions. In the healthcare service field, S-D Logic offers a new perspective on understanding patient satisfaction and healthcare service quality from the standpoint of “value co-creation.” Hospitals not only provide treatment “outcomes” but also co-create value with patients through “service interaction” processes such as communication, environment, procedures, and care (Nguyen, 2022). Therefore, this logic aligns closely with this study’s focus on the relationship between hospital service quality, patient expectations, and satisfaction. It supplements the static explanation of “service outcome satisfaction” provided by Expectation Confirmation Theory (ECT) and further emphasizes the importance of customer (patient) participation and the dynamic nature of the service context in the healthcare service process.

The index design of observation variables should take into account both the comprehensiveness of patient satisfaction and the independence of each index. Referring to the characteristics of public hospitals in China and the behavioral characteristics of patients, appropriate adjustments are made based on the customer satisfaction model in the United States. The researchers summarized four observed variables: Service Communication(SC), Cost Reasonableness(CR), Clinical Care Quality (CCQ), and environmental facilities (EF), and updated the related output model, as shown in Figure 3.1 below.

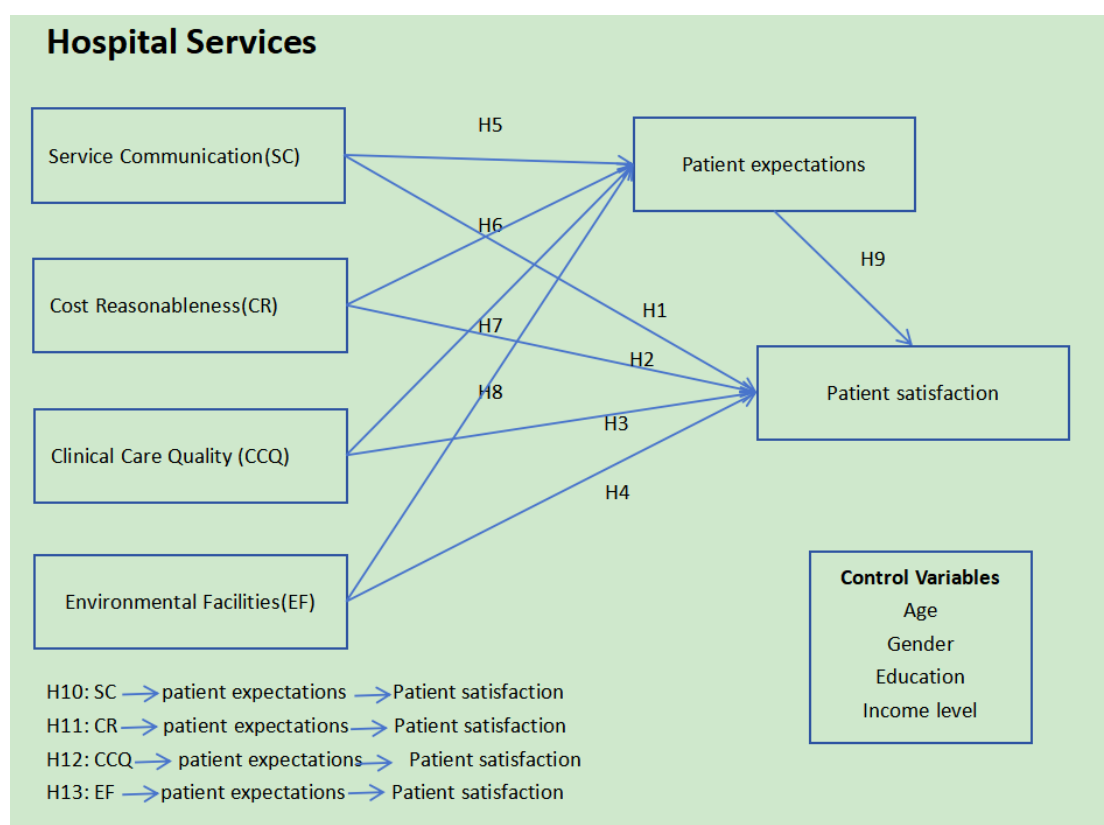


Figure 3.1 Patient satisfaction model (source by author)

From the Figure 3.1, it can see that the independent variables are Service Communication (SC)、Cost Reasonableness (CR)、Clinical Care Quality (CCQ), Environmental Facilities (EF). The mediated variable is patient expectations. The patient satisfaction is the dependent variable.

RESEARCH METHODOLOGY

This study adopts quantitative research approach (Creswell & Creswell, 2018). the research paradigm of this study is a positivist paradigm. Questionnaire survey method used to measure patient satisfaction. The object of study was strictly limited to all patients who were hospitalized or had been hospitalized in Grade III hospitals in Henan Province. The

selection of this population is primarily based on the following considerations: First, inpatients have comprehensive and profound experiences with hospital service quality (including doctor-patient communication, nursing quality, hospitalization costs, and environmental facilities). Second, patients within one-month post-discharge can still accurately recall their healthcare experiences, ensuring data quality. The study utilizes the professional survey platform "Questionnaire Star" (Wenjuanxing) for electronic questionnaire distribution. This study takes Henan Province in central China as the research background.

This study adopts individual inpatients at Grade-A tertiary hospitals in Henan Province as the unit of analysis. The study excludes aggregate-level units of analysis such as hospitals or departments, as they cannot reflect the differentiated experiences of individual patients. Stratified random sampling method was used to select samples of hospitalized patients in Henan Province's tertiary hospitals. The geographical distribution of Henan province can be divided into north Henan Province, south Henan Province, east Henan Province and west Henan Province. The largest tertiary hospitals were selected from 43 tertiary hospitals in North, south, east and west of Henan Province. Finally, 4 representative target hospitals were identified. The study population comprises inpatients from tertiary hospitals in Henan Province. According to the classic sample size table published by Krejcie and Morgan (1970), for a population of approximately 828,000 (the total annual inpatient volume across four hospitals), a minimum sample size of 384 is recommended at a 95% confidence level with a 5% margin of error. As a gold standard in the fields of social science and healthcare service research, this empirically validated sample size calculation model has been widely cited. Exploratory Factor Analysis was conducted, including Factor Analysis of each variable, reliability and validity Analysis, Analysis of Total Variance Explained and rotation factor analysis. Then, Smart-PLS is used for the structural equation Model test to assess the Outer Model and the Inter Model. Finally, Hypothesis Testing is conducted to examine the direct and mediating relationships in this study.

RESULTS AND DISCUSSION

A total of 549 questionnaires were distributed among a combined hospital population of approximately 828,000 individuals. Of these, 426 valid responses were collected, resulting in an overall response rate of 77.6%, which is considered acceptable for large-scale survey research.

4.3 Demographic Information

The following are the basic demographic characteristics of the respondents.

Table 4.2 Demographic Information

	Type	Number	Percentage
Gender	Male	228	55.1
	Female	186	44.9
Age	18-30years old	66	15.9
	31-45years old	87	21.0
	46-60years old	108	26.1
	over 60 years old	153	37.0
Education Background	Below junior high school	91	22.0
	Senior high school	99	23.9
	Bachelor's degree	133	32.1
	Master's degree or above	91	22.0
Marital Status	Unmarried	141	34.1
	Married	215	51.9
	Divorced	45	10.9
	Widowed	13	3.1
Income	below 3000	33	8.0
	between 3001-5000	66	15.9
	between 5001-8000	224	54.1
	over 8000	58	14.0
	Guarded	33	8.0
Hospital	The First Affiliated Hospital of Zhengzhou University(FAHZZU)	157	37.9
	Kaifeng Central Hospital	108	26.1
	The First Affiliated Hospital of Henan University of Science and Technology(FAHHUST)	83	20.0
	Xinyang Central Hospital	32	7.7
	Others	34	8.2

In this study, a total of 414 valid questionnaires were collected from tertiary hospitals in Henan Province. Among the respondents, 228 were male patients, accounting for 55.1%, while 186 were female patients, representing 44.9%. Overall, male patients slightly outnumbered female patients, a distribution that reflects the practical and representative characteristics of medical visits in Henan Province. The age distribution is predominantly skewed toward middle-aged and elderly individuals. Specifically, 153 participants (37.0%) were aged 60 years and above, making this the largest age group in the sample. This is followed by the 46–60 age group, comprising 108 respondents (26.1%). Respondents aged 31–45 accounted for 21.0%, while those aged 18–30 constituted the smallest proportion, at only 15.9%. The educational background of participants exhibited a diverse distribution. Patients with a bachelor's degree accounted for the largest proportion at 32.1% ($n = 133$), followed by those with a high school education at 23.9% ($n = 99$). Respondents with a junior high school education or below and those holding a master's degree or above each accounted for 22.0% ($n = 91$), respectively. Overall, the majority of the sample possessed a medium to high level of education, with 54.1% having attained at least a bachelor's degree. The majority were married, totaling 215 individuals or 51.9% of the sample. Unmarried participants accounted for 34.1% ($n = 141$), while divorced individuals comprised 10.9% ($n = 45$), and widowed participants represented the smallest proportion at 3.1% ($n = 13$). Overall, the marital status of the sample was diverse but primarily concentrated among married individuals. According to the data, the majority of patients in this study reported a monthly income between 5,001 and 8,000 RMB, accounting for 224 individuals or 54.1% of the total sample. This group represents the absolute majority. The second largest group consisted of those earning between 3,001 and 5,000 RMB per month, comprising 15.9% of respondents. Patients with monthly incomes exceeding 8,000 RMB totaled 58 individuals (14.0%), while those earning less than 3,000 RMB and those who chose not to disclose their income (guarded) each represented 8.0% of the sample ($n = 33$ for each group).

4.3.6 The Hospital for Medical Treatment

A total of 414 valid questionnaires were collected from various tertiary hospitals across Henan Province, including The First Affiliated Hospital of Zhengzhou University (FAHZZU), Kaifeng Central Hospital, The First Affiliated Hospital of Henan University of Science and Technology (FAHHUST), Xinyang Central Hospital, and several other institutions.

Among these, the largest number of respondents came from FAHZZU, with 157 participants accounting for 37.9% of the total sample. This aligns with the hospital's status as one of the largest and most resource-rich tertiary general hospitals in both the province and the country. As a national pilot unit for regional medical centers and a key institution for clinical teaching and research, FAHZZU attracts a substantial number of patients from both within and outside the province, lending broad representativeness and research value to the sample.

Kaifeng Central Hospital had the second highest number of respondents, with 108 individuals (26.1%). As a major medical center in eastern Henan, the hospital plays a vital role in delivering comprehensive regional healthcare services. Its significant presence in the sample reflects its practical influence on local medical service delivery.

The First Affiliated Hospital of Henan University of Science and Technology, located in Luoyang, contributed 83 respondents (20.0%). As a leading tertiary hospital in western Henan, it serves a wide range of patients from central and western regions. The proportion of respondents from this hospital is consistent with the actual distribution of medical visits in the area.

Xinyang Central Hospital and other hospitals contributed 32 (7.7%) and 34 (8.2%) respondents, respectively. Although these groups represent smaller proportions of the sample, they reflect the geographic diversity of this study. Including respondents from multiple locations enhances the representativeness and generalizability of the data, helping to avoid biases that might arise from focusing exclusively on the provincial capital.

The Correlation Matrix is usually examined first to determine whether the correlations among the items are suitable for factor analysis. If the correlation coefficients between variables are generally ≥ 0.3 , it indicates that there is a certain correlation between the items, and the factor analysis stage can be entered (Hair et al., 2017; Tabachnick & Fidell, 2019).

Table 4.7: Factor Analysis for SC

Correlation Matrix		SC1	SC2	SC3	SC4	SC5
Correlation	SC1	1.000	.689	.663	.570	.576
	SC2	.689	1.000	.548	.498	.573
	SC3	.663	.548	1.000	.561	.541
	SC4	.570	.498	.561	1.000	.475
	SC5	.576	.573	.541	.475	1.000

It can be seen from Table 4.7 that the correlation coefficients among the five items of the Service Communication (SC) variable are all greater than 0.3, which is at a medium to high level (0.475–0.689). Among them, the correlation between SC1 and SC2, SC3 was relatively strong ($r = 0.689, 0.663$); The correlation between SC4 and other items is relatively low

but still within an acceptable range (minimum $r = 0.475$). Overall, the correlation matrix shows that there is a significant positive correlation among the items, which conforms to the basic premise of factor analysis and indicates that the five items under the service communication dimension may be concentrated on a single latent factor.

Table 4.8: Factor Analysis for CR

Correlation Matrix		CR1	CR2	CR3	CR4	CR5	CR6
Correlation	CR1	1.000	.527	.548	.466	.518	.246
	CR2	.527	1.000	.514	.531	.544	.206
	CR3	.548	.514	1.000	.617	.570	.257
	CR4	.466	.531	.617	1.000	.568	.291
	CR5	.518	.544	.570	.568	1.000	.235
	CR6	.246	.206	.257	.291	.235	1.000

Table 4.8 presents the correlation matrix among the six items of the Cost Reasonableness (CR) variable to evaluate whether the premise of factor analysis is met. The correlation coefficients between CR1 and CR5 were concentrated between 0.466 and 0.617, showing a moderately strong positive correlation. Especially, the correlation between CR3 and CR4 was the highest ($r = 0.617$), supporting that they jointly reflect the same potential factor. However, CR6, and other item of the correlation coefficient is below 0.30, the lowest for CR2 $r = 0.206$, the highest for CR4 $r = 0.291$, far below the acceptable level, that its structure together with the other item lack. Combined with the reliability analysis in Section 4.7, it can be known that the CITC value of CR6 is 0.311.

Table 4.13: KMO and Bartlett's Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.952
Bartlett's Test of Sphericity	Approx. Chi-Square	8992.866
	df	630
	Sig.	.000

Table 4.13 shows the results of the pre-test Kaiser-Meyer-Olkin (KMO) sampling moderation and Bartlett's sphericity test for factor analysis. The Bartlett test results in this study were: $\chi^2 = 8992.866$, $df = 630$, $p = 0.000$ (significant). Therefore, the null hypothesis (where the correlation matrix is the identity matrix) is rejected, further indicating that the data is suitable for factor analysis.

4.9.1 Path Model Analysis

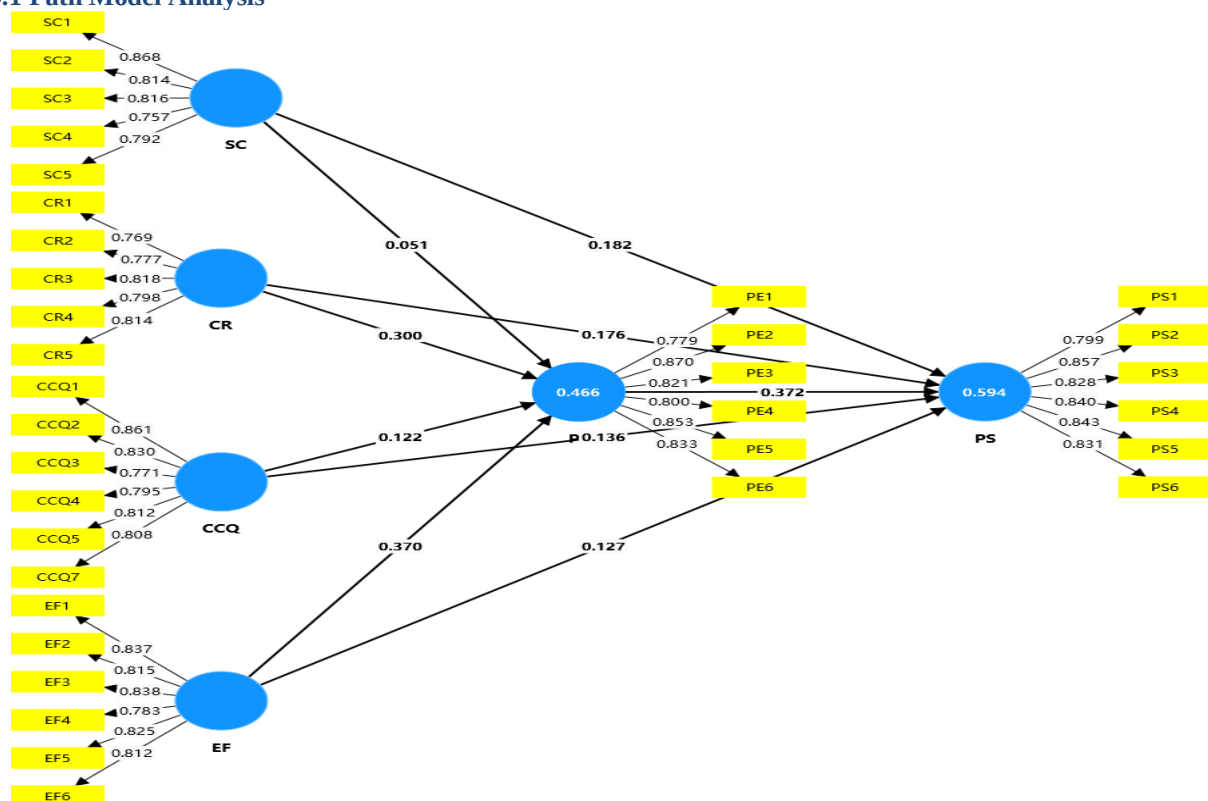


Figure 4.2 : PLS-SEM algorithm

Table 4.17: Construct reliability and validity

	Cronbach's alpha	Composite reliability (rho_a)	Composite reliability (rho_c)	Average variance extracted (AVE)
CCQ	0.897	0.898	0.921	0.661
CR	0.855	0.856	0.896	0.632
EF	0.901	0.903	0.924	0.670
PE	0.907	0.908	0.928	0.683
PS	0.912	0.913	0.932	0.694
SC	0.869	0.871	0.905	0.657

Internal consistency reflects the degree of interrelatedness among the items within a construct. Cronbach's Alpha and Composite Reliability (pc) are commonly used indicators. In this study, Cronbach's Alpha values for all constructs range from 0.855 to 0.912, well above the acceptable threshold of 0.70, indicating strong internal consistency for all constructs. Similarly, Composite Reliability (CR) values exceed 0.896 across all constructs, with the highest reaching 0.932, which also surpasses the recommended minimum of 0.70. These results suggest that the observed indicators of each construct are highly correlated and demonstrate a reliable measurement structure.

Discriminant Validity: (HTMT)

As shown in Table 4.18, the HTMT values for all pairs of latent variables are below the recommended cutoff, confirming that each construct is empirically distinct from the others. This result supports the discriminant validity of the measurement model and ensures that each construct captures a unique aspect of the conceptual framework.

Table 4.18: Discriminant Validity-HTMT Matrix

	CCQ	CR	EF	PE	PS	SC
CCQ						
CR	0.522					
EF	0.429	0.605				
PE	0.464	0.651	0.662			
PS	0.539	0.680	0.640	0.746		
SC	0.408	0.519	0.531	0.452	0.582	

All HTMT values were well below the recommended threshold of 0.90, with the lowest being 0.408 (between Clinical Care Quality [CCQ] and Service Communication [SC]) and the highest 0.746 (between Patient Expectations [PE] and Patient Satisfaction [PS]). These results indicate that the constructs in the model exhibit satisfactory discriminant validity. Specifically, patients' perceptions of dimensions such as service communication (SC), cost reasonableness (CR), clinical care quality (CCQ), and environmental facilities (EF) are clearly distinguishable.

Structural Model Path

Table 4.20: Path coefficients

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics ((O/STDEV))	P values
CCQ -> PE	0.122	0.122	0.039	3.116	0.002
CCQ -> PS	0.136	0.138	0.032	4.306	0.000
CR -> PE	0.300	0.299	0.049	6.062	0.000
CR -> PS	0.176	0.175	0.042	4.233	0.000
EF -> PE	0.370	0.368	0.054	6.856	0.000
EF -> PS	0.127	0.128	0.043	2.934	0.003
PE -> PS	0.372	0.371	0.050	7.451	0.000
SC -> PE	0.051	0.053	0.040	1.268	0.205
SC -> PS	0.182	0.183	0.032	5.606	0.000

The path coefficient from CCQ to PE is 0.122, with a T-value of 3.116 and a P-value of 0.002, indicating that Clinical Care Quality has a significant positive effect on Patient Expectations. Similarly, the path coefficient from CCQ to PS is 0.136 (T = 4.306, P < 0.001), suggesting that Clinical Care Quality also directly enhances Patient Satisfaction. Among all the examined paths, Emotional Trust (EF) to Patient Expectations (PE) and PE to Patient Satisfaction (PS) exhibit the strongest effects, with the highest path coefficients and T-values, representing the most influential mechanisms in the model. Although Self-Control (SC) does not significantly affect expectations, its direct effect on satisfaction suggests that patients with high self-control may better regulate their satisfaction levels independently of their initial expectations.

Table 4.21: R-square

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
PE	0.466	0.472	0.047	9.880	0.000
PS	0.594	0.600	0.048	12.292	0.000

Table 4.22: F-square

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)
CCQ -> PE	0.021	0.023	0.014	1.439
CCQ -> PS	0.033	0.037	0.018	1.899
CR -> PE	0.104	0.107	0.036	2.886
CR -> PS	0.043	0.046	0.023	1.872
EF -> PE	0.164	0.169	0.058	2.843
EF -> PS	0.022	0.026	0.017	1.289
PE -> PS	0.182	0.189	0.059	3.066
SC -> PE	0.003	0.006	0.006	0.549
SC -> PS	0.058	0.062	0.024	2.444

As shown in Table 4.26, the R² value for Patient Expectation (PE) is 0.466, suggesting that variables such as Cost Reasonableness (CR), Environmental Facilities (EF), Clinical Care Quality (CCQ), and Service Communication (SC) together explain approximately 46.6% of the variance in PE. The R² for Patient Satisfaction (PS) is 0.594, indicating that PE along with the other antecedent variables collectively account for about 59.4% of the variance in satisfaction. According to the guidelines by Hair et al. (2017), R² values of 0.25, 0.50, and 0.75 can be interpreted as weak, moderate, and substantial explanatory power, respectively. Therefore, the model demonstrates moderate-to-substantial explanatory power for PE and strong explanatory power for PS, particularly emphasizing its practical relevance in predicting patient satisfaction outcomes.

Regarding effect size (f²), which measures the unique contribution of each exogenous variable to the R² of an endogenous variable, Cohen (1988) proposed thresholds of 0.02 (small), 0.15 (medium), and 0.35 (large). For Patient Expectation (PE), Environmental Facilities (EF) shows the strongest effect (f² = 0.164), representing a medium-sized impact. This is followed by Cost Reasonableness (CR) with f² = 0.104, which is close to medium. Clinical Care Quality (CCQ) has a small effect size (f² = 0.021), while Service Communication (SC) contributes minimally (f² = 0.003), indicating a negligible effect. These results suggest that environmental and financial aspects are more critical in shaping patient expectations, whereas communication plays a relatively insignificant role.

Predictive relevance(Q²) & effect size (q²)

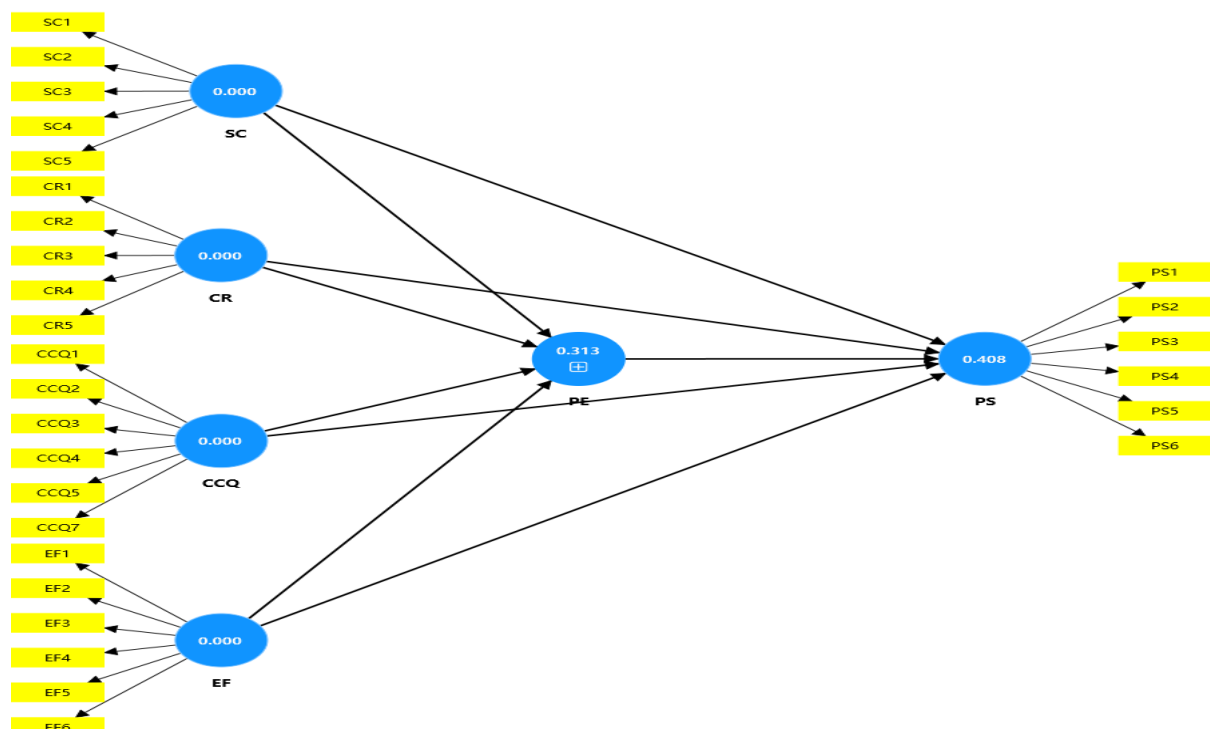


Figure 4. 3: Q-square

Table 4.23: Construct cross-validated redundancy

	SSO	SSE	Q ² (=1-SSE/SSO)
CCQ	2484.000	2484.000	0.000
CR	2070.000	2070.000	0.000
EF	2484.000	2484.000	0.000
PE	2484.000	1705.435	0.313
PS	2484.000	1471.410	0.408
SC	2070.000	2070.000	0.000

In this study, the Q² value for Patient Expectation (PE) is 0.313, suggesting moderate predictive relevance. For Patient Satisfaction (PS), the Q² value is 0.408, indicating strong predictive relevance. These results confirm that the structural model demonstrates good overall predictive performance. The q² effect size measures the extent to which each exogenous variable contributes to the predictive power of the endogenous construct.

Hypothesis Testing

Table 4.24: Path coefficient

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
CCQ -> PE	0.122	0.122	0.039	3.116	0.002
CCQ -> PS	0.136	0.138	0.032	4.306	0.000
CR -> PE	0.300	0.299	0.049	6.062	0.000
CR -> PS	0.176	0.175	0.042	4.233	0.000
EF -> PE	0.370	0.368	0.054	6.856	0.000
EF -> PS	0.127	0.128	0.043	2.934	0.003
PE -> PS	0.372	0.371	0.050	7.451	0.000
SC -> PE	0.051	0.053	0.040	1.268	0.205
SC -> PS	0.182	0.183	0.032	5.606	0.000

As shown in Table 4.24, Cost Reasonableness (CR) has a significant positive effect on both Patient Expectation (PE) (path coefficient = 0.300, $p < 0.001$) and Patient Satisfaction (PS) (path coefficient = 0.176, $p < 0.001$). This indicates that transparent and reasonable pricing mechanisms play a crucial role in shaping patients' trust and expectations. Patients tend to incorporate the perceived value of healthcare costs into their satisfaction evaluations. This finding is consistent with the perspective of Wang et al. (2022), who argued that perceived cost is a key antecedent of both patient loyalty and satisfaction.

Assessing the Mediating Effect

Table 4.25: Specific indirect effects

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
CCQ -> PE -> PS	0.045	0.046	0.016	2.770	0.006
CR -> PE -> PS	0.111	0.111	0.024	4.717	0.000
EF -> PE -> PS	0.138	0.137	0.027	5.095	0.000
SC -> PE -> PS	0.019	0.020	0.015	1.236	0.216

Table 4.25: Total indirect effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
CCQ -> PS	0.045	0.046	0.016	2.770	0.006
CR -> PS	0.111	0.111	0.024	4.717	0.000
EF -> PS	0.138	0.137	0.027	5.095	0.000
SC -> PS	0.019	0.020	0.015	1.236	0.216

Table 4.26: Total effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (O/STDEV)	P values
CCQ -> PE	0.122	0.122	0.039	3.116	0.002
CCQ -> PS	0.182	0.183	0.032	5.592	0.000
CR -> PE	0.300	0.299	0.049	6.062	0.000
CR -> PS	0.288	0.286	0.044	6.520	0.000

EF → PE	0.370	0.368	0.054	6.856	0.000
EF → PS	0.265	0.264	0.045	5.877	0.000
PE → PS	0.372	0.371	0.050	7.451	0.000
SC → PE	0.051	0.053	0.040	1.268	0.205
SC → PS	0.201	0.203	0.035	5.764	0.000

In this study, Partial Least Squares Structural Equation Modeling (PLS-SEM) was employed to examine the mediating effects, with a particular focus on the role of patient expectations (PE) in the relationships among service communication (SC), cost reasonableness (CR), clinical care quality (CCQ), environmental facilities (EF), and patient satisfaction (PS). The results indicated significant indirect effects for the paths $CCQ \rightarrow PE \rightarrow PS$ (path coefficient = 0.045, $p = 0.006$), $CR \rightarrow PE \rightarrow PS$ (path coefficient = 0.111, $p < 0.001$), and $EF \rightarrow PE \rightarrow PS$ (path coefficient = 0.138, $p < 0.001$), whereas the $SC \rightarrow PE \rightarrow PS$ path was not significant (path coefficient = 0.019, $p = 0.216$). Both the overall indirect effects and total effects confirmed these findings, suggesting that PE plays a critical mediating role in the relationships between clinical quality, cost reasonableness, and environmental facilities with satisfaction, while its mediating role in the service communication pathway lacks significance.

Several explanations can be offered for the non-significant $SC \rightarrow PE \rightarrow PS$ path. First, the primary value of communication in healthcare lies in its capacity for immediate emotional reassurance and interactive experience, rather than in the formation of expectations. Recent studies have pointed out that patient expectations tend to be relatively stable and are more influenced by prior experiences, institutional factors, and social reputation, rather than by a single communicative act (Oster et al., 2024). Therefore, even when the quality of service communication is high, its marginal impact on expectations remains limited, which explains the non-significant path observed in this study.

CONCLUSIONS

The findings show that patient expectations serve as a mediating factor in shaping satisfaction, indicating that expectations are not externally fixed but are dynamically constructed before, during, and after service encounters. Therefore, improving satisfaction depends not only on the quality of care itself but also on whether expectations are reasonable and well-informed. Hospitals should proactively enhance information transparency by offering clear communication on service procedures, expected outcomes, pricing, and facility conditions through official websites, mobile platforms, and offline consultation. By narrowing the “cognitive gap” and reducing expectation biases, patients are more likely to develop understanding and acceptance of their medical experiences, ultimately improving their satisfaction and trust in the system. Service communication has a significant direct effect on satisfaction, even if it does not significantly influence expectations. This highlights that effective communication can enhance satisfaction independently of expectation levels. Hospitals should incorporate communication training into the routine capacity building for healthcare professionals, focusing on active listening, empathy, emotional recognition, simplified language, and non-verbal communication. Moreover, optimizing consultation times and procedures can create favorable conditions for effective communication. High-quality communication not only alleviates patient anxiety but also helps reduce medical disputes. As a low-cost yet high-impact intervention, it fosters a trust-based care environment and is essential for improving overall service satisfaction. Clinical care quality, reasonable cost, and environmental facilities not only directly affect patient satisfaction but also indirectly enhance it by shaping patient expectations. This underscores the need for healthcare managers to focus on holistic improvements across foundational service dimensions. Hospital leadership should invest in environmental upgrades, process optimization, staffing

ratios, and clinical standardization to enhance perceived service quality comprehensively. For policymakers, the implementation of performance evaluation mechanisms that include patient expectation and satisfaction metrics can drive public hospitals toward a more patient-centered model. Establishing an evaluation system based on patient experience at the institutional level will help shift the healthcare system from a purely technical focus to one rooted in service quality and human-centered care.

REFERENCE

1. A'aqoulah, A., Kuyini, A. B., & Albalas, S. (2022). Exploring the gap between patients' expectations and perceptions of healthcare service quality. *Patient preference and adherence*, 1295-1305.
2. Abdellah Othman, A., Abd El Fattah, A. E. H., & Hassan ELayed Mahfouz, H. (2023). Effect of therapeutic communication educational program for nurses on their nursing care quality. *Journal of Nursing Science Benha University*, 4(1), 270-287.
3. Abu Bakar, M. Y., Baharun, H., & Hasanah, M. (2021). Build public trust through excellent service in school. *Al-Tanzim: Jurnal Manajemen Pendidikan Islam*, 5(3), 106-117.
4. Abu-Rumman, A., Al Shraah, A., Al-Madi, F., & Alfalah, T. (2022). The impact of quality framework application on patients' satisfaction. *International Journal of Human Rights in Healthcare*, 15(2), 151-165.
5. Aday, J. S., Heifets, B. D., Pratscher, S. D., Bradley, E., Rosen, R., & Woolley, J. D. (2022). Great Expectations: recommendations for improving the methodological rigor of psychedelic clinical trials. *Psychopharmacology*, 239(6), 1989-2010.

6. Ahmad, P., Ram, N., Shekhar Bellamkonda, R., & Kumar, A. (2025). Consumer Satisfaction and Reuse Intention of Food Delivery Apps: Integration of Service Quality Model and Expectation Confirmation Theory. *Journal of Quality Assurance in Hospitality & Tourism*, 1-29.
7. Ai, Y., Rahman, M. K., Newaz, M. S., Gazi, M. A. I., Rahaman, M. A., Mamun, A. A., & Chen, X. (2022). Determinants of patients' satisfaction and trust toward healthcare service environment in general practice clinics. *Frontiers in Psychology*, 13, 856750.
8. Alalwan, A. A., Algharabat, R. S., & Rana, N. P. (2022). The role of healthcare service quality in patient satisfaction and loyalty: A multi-dimensional perspective. *International Journal of Environmental Research and Public Health*, 19(6), 3452.
9. Alharbi, T., & Alzahrani, A. (2022). Impact of COVID-19 on Patient Satisfaction in Saudi Arabia. *Journal of Healthcare Quality*.
10. Al-Hilou, M., & Suifan, T. (2023). The mediating effect of patient trust on the relationship between service quality and patient satisfaction. *International journal of health care quality assurance*, 36(1/2), 1-16.
11. Alibrandi, A., Gitto, L., Limosani, M., & Mustica, P. F. (2023). Patient satisfaction and quality of hospital care. *Evaluation and Program Planning*, 97, 102251.
12. Alolayyan, M. N., Alnabelsi, A. B., Salameh, W. E. M. K. B., Al-shanableh, N., Alzyoud, M., Alhalalmeh, M. I., ... & Aldaihani, F. M. F. (2025). The mediating role of medical service geographical availability between the healthcare service quality and the medical insurance. In *Intelligence-Driven Circular Economy: Regeneration Towards Sustainability and Social Responsibility—Volume 2* (pp. 281-296). Cham: Springer Nature Switzerland.
13. Amann, J., Vayena, E., Ormond, K. E., Frey, D., Madai, V. I., & Blasimme, A. (2023). Expectations and attitudes towards medical artificial intelligence: a qualitative study in the field of stroke. *PLoS One*, 18(1), e0279088.
14. Baryakova, T. H., Pogostin, B. H., Langer, R., & McHugh, K. J. (2023). Overcoming barriers to patient adherence: the case for developing innovative drug delivery systems. *Nature Reviews Drug Discovery*, 22(5), 387-409.
15. Batalden, M., Batalden, P., & Margolis, P. (2023). Coproduction of healthcare service: Building sustainable health systems. *BMJ*, 380, e071050. <https://doi.org/10.1136/bmj-2022-071050>
16. Cao, Y., Gao, L., Fan, L., Zhang, Z., Liu, X., Jiao, M., ... & Zhang, S. E. (2023). Effects of verbal violence on job satisfaction, work engagement and the mediating role of emotional exhaustion among healthcare workers: a cross-sectional survey conducted in Chinese tertiary public hospitals. *BMJ open*, 13(3), e065918.
17. Çelik, Y., & Yildiz, Z. (2022). The impact of health care communication on patient satisfaction: A study in Turkish hospitals. *Health Expectations*, 25(2), 657–665.
18. Chen, J., Li, X., & Wang, Y. (2023). Hospital design and patient experience: Evidence from China. *BMJ Quality & Safety*, 32(3), 189-197. <https://doi.org/10.1136/bmjqs-2022-015678>
19. Chen, L., & Zhang, W. (2022). "The expectation-satisfaction paradox in urban tertiary hospitals". *China Health Policy Research*, 15(3), 45-59. DOI:10.1016/j.chpr.2022.100321
20. Chen, L., Zhang, J., Zhu, Y., Shan, J., & Zeng, L. (2023). Exploration and practice of humanistic education for medical students based on volunteerism. *Medical education online*, 28(1), 2182691.
21. Chou, H. K., Lin, I. C., Woung, L. C., & Tsai, M. T. (2012). Engagement in e-learning opportunities: An empirical study on patient education using expectation confirmation theory. *Journal of medical systems*, 36, 1697-1706.
22. Cui, C., Zuo, X., Wang, Y., Song, H., Shi, J., & Meng, K. (2020). A comparative study of patients' satisfaction with different levels of hospitals in Beijing: why do patients prefer high-level hospitals?. *BMC health services research*, 20, 1-11.
23. Department of Health and Social Care. (2021). The NHS Constitution for England. <https://www.gov.uk/government/publications/the-nhs-constitution-for-england>
24. Fehrer, J. A., & Vargo, S. L. (2022). Service-Dominant Logic and Service Management 4.0. In *The Palgrave Handbook of Service Management* (pp. 85-106). Cham: Springer International Publishing.
25. Friedel, A. L., Siegel, S., Kirstein, C. F., Gerigk, M., Bingel, U., Diehl, A., ... & Kreitschmann-Andermahr, I. (2023, March). Measuring patient experience and patient satisfaction—how are we doing it and why does it matter? A comparison of European and US American approaches. In *Healthcare* (Vol. 11, No. 6, p. 797). MDPI.
26. Ghosh, S., Ramamoorthy, L., & Pottakat, B. (2021). Impact of structured clinical handover protocol on communication and patient satisfaction. *Journal of patient experience*, 8, 2374373521997733.
27. Goswami, M., Goswami, P. J., Nautiyal, S., & Prakash, S. (2021). Challenges and actions to the environmental management of Bio-Medical Waste during COVID-19 pandemic in India. *Heliyon*, 7(3).
28. Gusset, N., Stalens, C., Stumpe, E., Klouvi, L., Mejat, A., Ouillade, M. C., & de Lemus, M. (2021). Understanding European patient expectations towards current therapeutic

- development in spinal muscular atrophy. *Neuromuscular Disorders*, 31(5), 419-430.
29. Hair Jr, J. F., Matthews, L. M., Matthews, R. L., & Sarstedt, M. (2017). PLS-SEM or CB-SEM: updated guidelines on which method to use. *International Journal of Multivariate Data Analysis*, 1(2), 107-123.
30. Haleem, A., Javaid, M., Singh, R. P., & Suman, R. (2022). Medical 4.0 technologies for healthcare: Features, capabilities, and applications. *Internet of Things and Cyber-Physical Systems*, 2, 12-30.
31. Henan Provincial Health Commission. (2023). Annual report on healthcare development in Henan Province. Zhengzhou: HPHC Press.
32. Henan Provincial Hospital Management Institute. (2023). Bed utilization rate analysis report.
33. Huang, X., Wang, C., Hua, L., Gao, Y., Zhou, S., & Wang, X. (2022). Social context, self-efficacy, and patient-centered service behavior of medical professionals: The moderating role of achievement motivation. *Frontiers in Psychiatry*, 13, 784228.
34. Huey, R. W., George, G. C., Phillips, P., White, R., Fu, S., Janku, F., ... & Hong, D. S. (2021). Patient-reported out-of-pocket costs and financial toxicity during early-phase oncology clinical trials. *The oncologist*, 26(7), 588-596.
35. Jaakkola, E., Kaartemo, V., Siltaloppi, J., & Vargo, S. L. (2024). Advancing service-dominant logic with systems thinking. *Journal of Business Research*, 114592.
36. Jabbar, M. A., Iqbal, H., & Chawla, U. (2024). Patient satisfaction: The role of artificial intelligence in healthcare. *Journal of Health Management*, 09720634241246331.
37. Johnson, A. E., Bulgarelli, L., Shen, L., Gayles, A., Shammout, A., Horng, S., ... & Mark, R. G. (2023). MIMIC-IV, a freely accessible electronic health record dataset. *Scientific data*, 10(1), 1.
38. Kang, L., Wang, M. H., & Wu, S. J. (2023). Construction of nursing-sensitive quality indicator system for cardiac rehabilitation of patients undergoing percutaneous coronary intervention based on structure-process-outcome model. *BMC nursing*, 22(1), 457.
39. Karume, A. K., Nyongesa, K., Okutoyi, L., & Kinuthia, J. (2025). Patient's expectations and perceptions on quality of care; An evaluation using SERVQUAL gap in Kenya. *PloS one*, 20(3), e0315910.
40. Kokkinou, A., & Cranage, D. A. (2013). Using self-service technology to reduce customer waiting times. *International Journal of Hospitality Management*, 33, 435-445.
41. Kraus, S., Schiavone, F., Pluzhnikova, A., & Invernizzi, A. C. (2021). Digital transformation in healthcare: Analyzing the current state-of-research. *Journal of Business Research*, 123, 557-567.
42. Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement*, 30(3), 607–610. <https://doi.org/10.1177/001316447003000308>
43. Li, H., Zhang, R., & Zhao, L. (2022). China's healthcare reforms and regional equity: A case study of Henan. *The Lancet Regional Health – Western Pacific*, 18, 100345. <https://doi.org/10.1016/j.lanwpc.2022.100345>
44. Liu, Y., Zhang, X., & Chen, L. (2023). Development of a patient-centered inpatient experience evaluation scale for tertiary hospitals in China. *Chinese Journal of Hospital Administration*, 39(2), 101–107. <https://doi.org/10.3760/cma.j.cn112237-20221228-01124>
45. Löfberg, N., & Tronvoll, B. (2025). Enhancing customer experience in digital servitization: the impact of service-dominant logic. In *Handbook of Service Experience* (pp. 119-129). Edward Elgar Publishing.
46. Meade, A. W., & Craig, S. B. (2012). Identifying careless responses in survey data. *Psychological Methods*, 17(3), 437–455. <https://doi.org/10.1037/a0028085>
47. Meng, Q., et al. (2023). "China's healthcare reform progress". *BMJ*, 380, e073456. DOI:10.1136/bmj-2022-073456
48. Nariswari, A., & Vargo, S. L. (2024). Service-Dominant Logic: Theoretical Foundations and Directions. In *Humanism in Marketing: Responsible Leadership and the Human-to-Human Approach* (pp. 153-186). Cham: Springer Nature Switzerland.
49. Nasir, K. (2024). ENHANCING PATIENT EXPERIENCE IN HEALTHCARE FACILITIES (Doctoral dissertation, NUST Business School (NBS) NUST).
50. Nguyen, L., Bellucci, E., & Nguyen, L. T. (2021). Electronic health records implementation: An evaluation of information system impact and contingency factors. *International Journal of Medical Informatics*, 148, 104414. <https://doi.org/10.1016/j.ijmedinf.2021.104414>
51. Parasuraman, A., Zeithaml, V. A., & Berry, L. L. (1988). Servqual: A multiple-item scale for measuring consumer perc. *Journal of retailing*, 64(1), 12.
52. Pietrzykowski, Ł., Kasprzak, M., Michalski, P., Kosobucka, A., Fabiszak, T., & Kubica, A. (2022). The influence of patient expectations on adherence to treatment regimen after myocardial infarction. *Patient education and counseling*, 105(2), 426-431.
53. Qi, G. H. (2004). An analysis of factors influencing outpatient satisfaction. *Chinese Hospital Management*, 24(5), 32–33.
54. Rahi, S., & Abd. Ghani, M. (2019). Integration of expectation confirmation theory and self-determination theory in internet banking

- continuanace intention. *Journal of Science and Technology Policy Management*, 10(3), 533-550.
55. Rao, X., Luo, L., Xiang, J., & Wang, X. (2025). The impact of perceived value, customer expectations, and patient experience on the satisfaction of contracted patients in hospitals. *BMC Health Services Research*, 25(1), 7.
56. Sabbatini, A. K., Tilburt, J. C., Campbell, E. G., Sheeler, R. D., Egginton, J. S., & Goold, S. D. (2014). Controlling health costs: physician responses to patient expectations for medical care. *Journal of general internal medicine*, 29, 1234-1241.
57. Sharma, R., & Patterson, P. (2020). Exploring the relationship between service quality and customer satisfaction in the healthcare sector. *International Journal of Healthcare Management*, 13(3), 105-112.
58. Shen, C., & Yahya, Y. (2021). The impact of service quality and price on passengers' loyalty towards low-cost airlines: The Southeast Asia perspective. *Journal of Air Transport Management*, 91, 101966.
59. Sinyiza, F. W., Kaseka, P. U., Chisale, M. R. O., Chimbatata, C. S., Mbakaya, B. C., Kamudumuli, P. S., ... & Kayira, A. B. (2022). Patient satisfaction with health care at a tertiary hospital in Northern Malawi: results from a triangulated cross-sectional study. *BMC Health Services Research*, 22(1), 695.
60. Spanos, C., Grace, J. A., Leemaqz, S. Y., Brownhill, A., Cundill, P., Locke, P., ... & Cheung, A. S. (2021). The informed consent model of care for accessing gender-affirming hormone therapy is associated with high patient satisfaction. *The Journal of Sexual Medicine*, 18(1), 201-208.
61. Srivastava, A., Avan, B. I., Rajbangshi, P., & Bhattacharyya, S. (2015). Determinants of women's satisfaction with maternal health care: a review of literature from developing countries. *BMC pregnancy and childbirth*, 15, 1-12.
62. Sun, X. (2024). Customer satisfaction and intention to recommend among live-streaming shopping customers: An extension of the unified theory of acceptance and use of technology 2. *Kasetsart Journal of Social Sciences*, 45(1), 313-324.
63. Tabachnick, B. G., & Fidell, L. S. (2013). *Using multivariate statistics* (6th ed.). Pearson Education.
64. Toonstra, J. L., Howell, D., English, R. A., Lattermann, C., & Mattacola, C. G. (2021). The relationship between patient expectations and functional outcomes in patients undergoing cartilage repair of the knee: a mixed methods study. *Journal of Sport Rehabilitation*, 30(7), 1038-1046.
65. Touati, R., Sailer, I., Marchand, L., Ducret, M., & Strasding, M. (2022). Communication tools and patient satisfaction: A scoping review. *Journal of Esthetic and Restorative Dentistry*, 34(1), 104-116.
66. Umberson, D., & Montez, J. K. (2010). Social relationships and health: A flashpoint for health policy. *Journal of Health and Social Behavior*, 51(1_suppl), S54–S66. <https://doi.org/10.1177/0022146510383501>
67. Vainauskienė, V., & Vaitkienė, R. (2021). Enablers of patient knowledge empowerment for self-management of chronic disease: an integrative review. *International journal of environmental research and public health*, 18(5), 2247.
68. Van Campen, C., Sixma, H. J., Kerssens, J. J., Peters, L., & Rasker, J. J. (1995). Assessing patients' priorities and perceptions of the quality of health care: The development of the QUOTE-Rheumatic-Patients instrument. *British Journal of Rheumatology*, 34(9), 866–870. <https://doi.org/10.1093/rheumatology/34.9.866>
69. Wagner, J., Roll, M., Lautenbach, A., Notz, S., Plitzko, G., Izbicki, J., ... & Weigel, A. (2025). Patients' Expectations and Perspectives on Follow-up Care after Bariatric Surgery in Germany. *Obesity Surgery*, 1-11.
70. Wang, J., Zhang, Y., & Liu, H. (2022). Measuring patient satisfaction in tertiary hospitals: Evidence from a structural equation modeling study in China. *Frontiers in Public Health*, 10, 913867. <https://doi.org/10.3389/fpubh.2022.913867>
71. Wang, L., & Zhang, G. (2023). Rural healthcare challenges in post-reform China: Lessons from Henan. *Journal of Global Health*, 13, 04045. <https://doi.org/10.7189/jogh.13.04045>
72. Wang, L., Chen, Y., & Zhao, M. (2024). Process reengineering in tertiary hospitals: Lessons from Henan Province. *Health Care Management Review*, 49(2), 112-125. <https://doi.org/10.1097/HMR.0000000000000389>
73. Wang, Y., Zhang, X., Wang, X., & Wang, Y. (2022). The role of perceived value in patient satisfaction and loyalty in mobile health services. *BMC Health Services Research*, 22(1), 1123. <https://doi.org/10.1186/s12913-022-08512-3>
74. Williams, B., Onsman, A., & Brown, T. (2010). Exploratory factor analysis: A five-step guide for novices. *Australasian Journal of Paramedicine*, 8(3). <https://doi.org/10.33151/ajp.8.3.93>
75. Wolf, J. A., et al. (2023). Measuring what matters: New frameworks for patient-centered evaluation. *NEJM Catalyst*, 4(2). <https://doi.org/10.1056/CAT.22.0294>
76. Xu, T., Yao, Y., & Zheng, X. (2023). Patient satisfaction in overcrowded hospitals: Evidence from central China. *International Journal for Quality in Health Care*, 35(1),

- mzad008.
<https://doi.org/10.1093/intqhc/mzad008>
77. Yan, M., Zhi, M., Xu, Y., Hu, L., & Liu, Y. (2022). Inpatient satisfaction with nursing care and its impact factors in Chinese tertiary hospitals: a cross-sectional study. *International journal of environmental research and public health*, 19(24), 16523.
 78. Yang, H., Liu, Y., & Wang, J. (2022). Development and validation of a patient satisfaction questionnaire for tertiary hospitals in China. *Chinese Journal of Health Statistics*, 39(6), 902–906.
<https://doi.org/10.3969/j.issn.1002-3674.2022.06.015>
 79. Zhang, X., & Liu, S. (2022). Understanding relationship commitment and continuous knowledge sharing in online health communities: a social exchange perspective. *Journal of Knowledge Management*, 26(3), 592-614.
 80. Zhao, Y., & Zhang, L. (2020). Income disparities and health service use in urban China: Evidence from a large-scale survey. *BMC Public Health*, 20, 1421.
<https://doi.org/10.1186/s12889-020-09552-6>
 81. Zhou, X., & Liang, Y. (2023). "Income gradients in healthcare satisfaction". *Social Science & Medicine*, 320, 115721.
DOI:10.1016/j.socscimed.2023.115721
 82. Zhou, Z., Zhao, Y., Shen, C., Lai, S., Nawaz, R., & Gao, J. (2021). Evaluating the effect of hierarchical medical system on health seeking behavior: a difference-in-differences analysis in China. *Social science & medicine*, 268, 113372.