International Journal for Multidisciplinary Research (IJFMR)
E-ISSN: 2582-2160 ● Website: www.ijfmr.com ● Email: editor@ijfmr.com

The Relationship Between Service Quality and Customer Satisfaction in Selected Health Care Apps

Tanvi Mundra[1], Dr. Namrata Maheshwari[2]

[1]Student, Department of commerce JDBI
[2]Assistant Professor, Department of commerce JDBI

Abstract:
The Indian healthcare landscape is rapidly transitioning from traditional offline models to digital platforms, driven by increased internet penetration and a growing demand for convenient healthcare solutions. This shift has led to the proliferation of online healthcare applications like Apollo 24|7, Tata 1MG, and PharmEasy. However, with increased competition, understanding the key drivers of customer satisfaction in this nascent online healthcare ecosystem becomes crucial. While offline healthcare relies heavily on established trust and personal interactions, online platforms must leverage service quality to build and maintain customer loyalty. Therefore, this research investigates the relationship between service quality and customer satisfaction in these leading Indian health-care applications (Apollo 24|7, Tata 1MG, and PharmEasy). Using survey data from 151 respondents and statistical analysis (correlation, regression, ANOVA), the study demonstrates a significant positive relationship: improvements in service quality directly correlate with increased customer satisfaction. The findings underscore the importance of prioritizing service quality to enhance user engagement, loyalty, and the overall success of healthcare apps in the Indian context. This can be furthered explored in depth.

Keywords: Healthcare Apps, Service Quality, Customer Satisfaction, mHealth, User Experience.

INTRODUCTION

Mobile applications (apps) have revolutionized numerous sectors, and healthcare is no exception. In recent years, healthcare apps have emerged as a powerful tool, transforming how individuals manage their health and interact with the healthcare system. From simple tracking and reminders to complex diagnostic and telemedicine solutions, these apps are changing the landscape of healthcare delivery, particularly in rapidly developing economies like India.

The Indian healthcare sector is undergoing rapid transformation, marked by increased spending, expanding coverage, and a growing reliance on digital solutions. Healthcare applications have emerged as crucial tools for improving accessibility and delivering personalized healthcare. However, ensuring high service quality in these apps is paramount for user satisfaction and effective healthcare delivery. This study aims to investigate the relationship between perceived service quality and customer satisfaction within three prominent Indian healthcare apps: Apollo 24|7, Tata 1MG, and PharmEasy. By understanding this relationship, developers and providers can create more user-centric experiences, fostering patient trust and improving health outcomes.

The future of healthcare mobile apps is poised for dynamic growth, fueled by key trends and technological advancements that promise to reshape patient care. Expect to see stricter data privacy regulations (increased scrutiny from regulatory bodies expected due to rising data security concerns) as concerns mount regarding the security of sensitive patient information. Artificial intelligence (AI) will play a transformative role, powering personalized medicine through features like AI chatbots offering tailored health recommendations and predictive analytics enabling early disease detection (expect AI chatbots and predictive analytics to offer tailored health recommendations and early disease detection). Telehealth integration will further expand the reach of these apps, facilitating remote patient monitoring and virtual consultations, thereby democratizing access to care (remote patient monitoring and virtual consultations become key features, expanding access to care particularly for remote communities). Interoperability will become paramount, demanding seamless integration with Electronic Health Records (EHRs) and existing healthcare systems to ensure a holistic and coordinated approach to patient data management (seamless integration with EHRs and healthcare systems vital for holistic patient data management and reduced medical errors). Finally, a surge in adoption of mental health apps is anticipated, providing accessible tools for stress management, meditation, and other well-being practices, reflecting a growing awareness of the importance of mental health support (tools for stress management and meditation become increasingly popular, addressing growing mental health awareness amidst increasing stress levels).

Literature Review

The rise of mHealth apps presents both opportunities and challenges. Existing literature highlights several key themes:

Adoption and Awareness: Chakraborty (2020) emphasizes the need for increased awareness and education to drive adoption in India.

Service Quality Dimensions: Malathi and Jasim (2022) demonstrate the importance of reliability, empathy, and assurance in medical apps. Oppong et al. highlight the impact of interaction quality on satisfaction and continued usage.

Evaluation Frameworks: Boudreaux et al. advocate for rigorous evaluation of health apps by healthcare providers. Paglialonga, Lugo, and Santoro (2018) call for standardized methodologies for app quality assessment.

Ethical Considerations: Grundy (2022) points to the ethical implications of data collection practices in the mHealth ecosystem.

Technological Integration: Cornet and Holden (2018) discuss the potential of smartphone-based passive sensing, while also noting the need to address integration and privacy challenges. Zaim et al. (2014) finds a direct link between SERVQUAL metrics and customer satisfaction in Turkish hospitals.

Aims and Objectives

Building on the identified research gaps, this study aims to:

- Analyze usage patterns in healthcare apps.
- Investigate the relationship between service quality and customer satisfaction.
- Examine demographic factors influencing satisfaction.

To achieve these aims, the following objectives are set:

- To analyze the pattern of usage in healthcare apps.

- To explore the relationship between service quality and customer satisfaction in healthcare apps.
- To analyze the demographic factors related to customer satisfaction.

Methodology

This study employs a quantitative, cross-sectional design to investigate the relationships between service quality, customer satisfaction, demographic factors, and repeat purchase behavior in healthcare apps.

Hypotheses

H01: There is no significant relationship between service quality and customer satisfaction in healthcare apps.

H11: There is a significant relationship between service quality and customer satisfaction in healthcare apps.

H02: There is no significant impact of demographic factors on consumers' decision-making towards healthcare apps.

H22: There is a significant impact of demographic factors on consumers' decision-making towards healthcare apps.

H03: There is no significant relationship between customer satisfaction and repeat purchase in healthcare apps.

H33: There is a significant relationship between customer satisfaction and repeat purchase in healthcare apps.

Data Collection and Sampling:

Primary data was collected in April 2024 using a structured online survey (Google Forms) distributed via email and WhatsApp. The questionnaire used Likert-scale items to measure perceptions of service quality and customer satisfaction, along with questions on demographics (age, gender, income, education) and app usage habits. A sample of 151 respondents from various Indian cities was recruited using a judgmental and purposive sampling technique. The sample included individuals aged 18 and above.

Instrument Validity and Reliability:

A pilot study was conducted with 15 participants to assess the reliability and validity of the questionnaire. Cronbach's alpha was calculated to evaluate internal consistency. The resulting Cronbach's alpha of 0.907 (Table 1) indicates high internal consistency and reliability.

Cronbach's Alpha

Statistic	Value
Cronbach's Alpha	0.907
N of Items	10

Data Analysis:

Data analysis was performed using SPSS version 20. Descriptive statistics summarized respondent characteristics. The following statistical tests were employed:

Correlation Analysis: Pearson correlation coefficients were calculated to assess the relationship between service quality and customer satisfaction.

Regression Analysis: Multiple linear regression was used to examine the impact of demographic factors (age, gender, income, education) on customer satisfaction and app usage.

ANOVA: Analysis of variance (ANOVA) was conducted to compare customer satisfaction levels across different groups based on service quality perceptions

Results

Descriptive statistics of the data is provided in table 1.

Table 1- Descriptive Statistics

	N
Age	151
Annual income	151
years of schooling	151
Avg monthly expenditure on medicine / health care services	151
Valid N (listwise)	151

This survey included a diverse age range (18-70, mean 32) with annual incomes ranging from 1 to 10 lakhs (mean 3 lakhs). Education levels varied, with a minimum of 10 years of schooling (10th pass) and a maximum of 17 years (post-graduation), the average being 15 years (graduation). Monthly healthcare expenditure ranged from ₹226 to ₹19,974, with an average of ₹4,852. The sample was almost equally split between male (46.4%) and female (53.6%) respondents.

Hypothesis Testing:

Hypothesis 1: Service Quality and Customer Satisfaction

Table 2: correlation

Correlations			
		normalized customer service score	**normalized customer loyalty score**
normalized customer service score	**Pearson Correlation**	1	.709**
	Sig. (2-tailed)		.000
	N	151	151
normalized customer loyalty score	**Pearson Correlation**	.709**	1
	Sig. (2-tailed)	.000	
	N	151	151
****. Correlation is significant at the 0.01 level (2-tailed).**			

A Pearson correlation analysis revealed a strong, positive, and statistically significant relationship between normalized customer service and customer loyalty scores ($r = 0.709$, $p < 0.001$). Therefore, the null hypothesis (H01) is rejected.

Hypothesis 2: Demographic Factors and App Usage

Table 3: Regression Statistics

Regression Statistics	
Multiple R	0.951652
R Square	0.905641
Adjusted R Square	0.901709
Standard Error	0.175168
Observations	151

	Coefficients	**Standard Error**	**t Stat**	**P-value**
Intercept	2.611782	0.284754	9.172049	4.44E-16
age	0.027242	0.032304	0.843327	0.400444
gender	0.108535	0.051037	2.1262	0.036238
no of senior citizen	-0.02119	0.009465	-2.23842	0.026728
no of children	0.006709	0.042877	0.156475	0.875878
regular medication	0.013367	0.006611	2.022023	0.045026
log annual income	1.055528	0.033866	31.16791	6.88E-66

The multiple linear regression model demonstrates a strong fit ($R^2 = 0.906$, Adjusted $R^2 = 0.902$). Log annual income ($p < 0.001$), gender ($p = 0.036$), regular medication ($p = 0.045$) and Number of Senior Citizens ($p=0.027$) all showed statistically significant effects. Therefore, the null hypothesis (H02) is rejected.

Hypothesis 3: Customer Satisfaction and Repeat Purchase

Table 4: ANOVA

ANOVA						
Source of Variation	**SS**	**df**	**MS**	**F**	**P-value**	**F crit**
Between Groups	279.9282	4	69.98205	54.80561	5.27719E-28	2.433633
Within Groups	186.4294	146	1.276914			
Total	466.3576	150				

The ANOVA results indicate a statistically significant difference in the means between groups ($F(4, 146) = 54.81$, $p < 0.001$). This supports the alternate hypothesis. Therefore, the null hypothesis (H03) is rejected.

Conclusion

The findings of this study provide strong evidence for the critical role of service quality in driving

customer satisfaction within the Indian healthcare app market. The significant positive correlation between service quality and customer loyalty underscores the importance of providing reliable, user-friendly, and secure applications. The regression analysis further reveals that demographic factors, particularly income, gender, number of Senior Citizens and regular medication intake, significantly impact app usage, suggesting the need for tailored marketing and service strategies. Finally, the ANOVA results emphasize that customer satisfaction leads to higher intentions of repeat purchase behavior for healthcare apps.

This research confirms a strong, positive relationship between service quality and customer satisfaction in Indian healthcare applications. The results of the data suggest that high customer satisfaction can result in positive intention of repeat purchase behavior for healthcare applications. The study emphasizes the importance of investing in service quality to enhance user engagement, foster loyalty, and improve the market position of healthcare apps in India. Future research should focus on the specific dimensions of service quality that have the most significant impact on satisfaction and examine the long-term effects of app usage on health outcomes. Moreover, qualitative research can provide deeper insights into the user experience and identify unmet needs in the digital healthcare space.

Future Research Directions:

This study highlights avenues for future research on Indian healthcare apps' service quality. Key areas include: developing healthcare-specific service quality measures; understanding the role of patient engagement; examining the balance between technical and functional quality (usability vs. trustworthiness); conducting longitudinal studies to track long-term impact; and investigating the impact of AI on service quality and patient well-being, including ethical considerations and effectiveness. These efforts can improve app design, implementation, and evaluation, leading to better patient outcomes.

REFERENCES

1. Apollo 24|7. (n.d.). Apollo 24|7 - Online Doctor Consultation & Book Lab Tests at Home. Retrieved September 11, 2024, from https://www.apollo247.com
2. Boudreaux, E. D., Waring, M. E., Hayes, R. B., Sadasivam, R. S., Mullen, S., & Pagoto, S. (2014). Evaluating and selecting mobile health apps: strategies for health care providers and health care organizations. Translational behavioral medicine, 4(4), 363-371.
3. Burns, A. C., & Bush, R. F. (2020). Marketing research (8th ed.). Pearson.
4. Chakraborty, D. (2020). Elements impacting the utilization expectation of various health-care apps in India: A study conducted on smartphone users. foresight, 22(3), 385-400.
5. Cornet, V. P., & Holden, R. J. (2018). Systematic review of smartphone-based passive sensing for health and wellbeing. Journal of biomedical informatics, 77, 120-132.
6. Grundy, Q. (2022). A review of the quality and impact of mobile health apps. Annual review of public health, 43, 117-134.
7. Hair, J. F., Celsi, M. W., Ortinau, D. J., & Bush, R. P. (2017). Essentials of marketing research (4th ed.). McGraw-Hill Education.
8. Malathi, A., & Jasim, K. M. (2022). Validating the relationship between service quality, patient sensitivity and experience towards medical applications using SERVQUAL. International Journal of Medical Informatics, 168, 104883.
9. Malhotra, N. K. (2019). Marketing research: An applied orientation (7th ed.). Pearson.

10. Oppong, E., Hinson, R. E., Adeola, O., Muritala, O., & Kosiba, J. P. (2021). The effect of mobile health service quality on user satisfaction and continual usage. Total Quality Management & Business Excellence, 32(1-2), 177-198.
11. Paglialonga, A., Lugo, A., & Santoro, E. (2018). An overview on the emerging area of identification, characterization, and assessment of health apps. Journal of biomedical informatics, 83, 97-102.
12. PharmEasy. (n.d.). PharmEasy: Online Pharmacy & Medical Store in India. Retrieved September 11, 2024, from https://pharmeasy.in
13. Tata 1mg. (n.d.). Tata 1mg: India's Leading Online Pharmacy & Healthcare Platform. Retrieved September 11, 2024, from https://www.1mg.com
14. Zaim, S., Tarim, M., & Zaim, H. (2014). An Evaluation of SERVQUAL and Customer Satisfaction in Health Care Industry. In Proceedings of Global Conference on Health care Systems Engineering2014.