



ISSN Print: 2664-8792
ISSN Online: 2664-8806
Impact Factor: RJIF 8.54
IJRM 2025; 7(2): 310-312
www.managementpaper.net
Received: 06-06-2025
Accepted: 08-07-2025

Dr. Tam Hameed Kan
Professor, Measi Institute of
Management, Chennai,
Tamil Nadu, India

Dr. AK Sheik Manzoor
Professor, Department of
Management Studies, Anna
University, Chennai,
Tamil Nadu, India

A study on the factors influencing the adoption of telemedicine health services in metropolitan city hospitals

Tam Hameed Kan and AK Sheik Manzoor

DOI: <https://www.doi.org/10.33545/26648792.2025.v7.i2d.465>

Abstract

Background: The integration of telemedicine into healthcare systems presents a transformative opportunity to enhance service delivery, particularly in high-density metropolitan areas. However, its adoption faces significant barriers. This study investigates the factors influencing the adoption intention of telemedicine services among healthcare stakeholders in a major metropolitan city.

Methods: A mixed-methods approach was employed, combining a quantitative survey based on the Unified Theory of Acceptance and Use of Technology (UTAUT) with qualitative insights from in-depth interviews. Data were collected from 107 respondents, including healthcare professionals and administrators, using a structured questionnaire and convenience sampling.

Results: Regression analysis revealed that Effort Expectancy ($\beta=0.419$, $p<0.001$) and attitude towards Using ($\beta=0.242$, $P=0.020$) were significant predictors of Behavioral Intention to adopt telemedicine. The model explained 57.7% of the variance in intention. ANOVA results indicated a significant difference in adoption intention based on geographic location ($F=3.962$, $P=0.022$), with urban respondents showing higher intention. Chi-square tests confirmed significant associations between location and perceived time savings ($\chi^2=10.231$, $P=0.037$), and between prior telemedicine experience and perceived time savings ($\chi^2=33.531$, $p<0.001$).

Conclusion: The findings underscore that the perceived ease of use and positive attitudes are critical drivers of telemedicine adoption. Disparities based on location and experience highlight the need for targeted interventions. Strategies focusing on user-friendly design, training programs, and awareness campaigns are essential to promote widespread adoption and leverage telemedicine for improved healthcare outcomes in metropolitan settings.

Keywords: Telemedicine, healthcare technology, UTAUT, technology adoption, metropolitan health, behavioral intention, India.

1. Introduction

The global healthcare landscape is undergoing a profound transformation driven by digital innovation. Telemedicine, defined as the remote delivery of healthcare services using electronic communication and information technologies, has emerged as a pivotal tool to improve access, quality, and efficiency of care (Gajrawala & Pelkowski, 2021) [2]. The COVID-19 pandemic acted as a significant catalyst, accelerating the adoption of telehealth services to meet unprecedented demand and overcome physical barriers to care (Wang *et al.*, 2023) [9].

In India, this trend is particularly evident. The nation's telemedicine market, valued at \$1.10 billion in 2022, is projected to grow at a compound annual growth rate (CAGR) of 21.2% to reach \$5.15 billion by 2030. This growth is fueled by a large, tech-savvy population, increasing smartphone penetration, and supportive government initiatives aimed at digitalizing healthcare.

Despite this potential and growth, the adoption of telemedicine within metropolitan city hospitals often seen as hubs of medical innovation faces significant challenges. Barriers such as inadequate technological infrastructure, data security concerns, resistance to change from traditional care models, and varying levels of digital literacy among providers and patients persist (Kapoor *et al.*, 2014; Hermens *et al.*, 2016) [4, 3]. While existing research has extensively explored telemedicine adoption in rural and remote contexts

Corresponding Author:
Dr. TAM Hameed Kan
Professor, Measi Institute of
Management, Chennai,
Tamil Nadu, India

(Sharma & Kaur, 2018) ^[5], a distinct gap exists in understanding the specific drivers and barriers within complex metropolitan healthcare ecosystems.

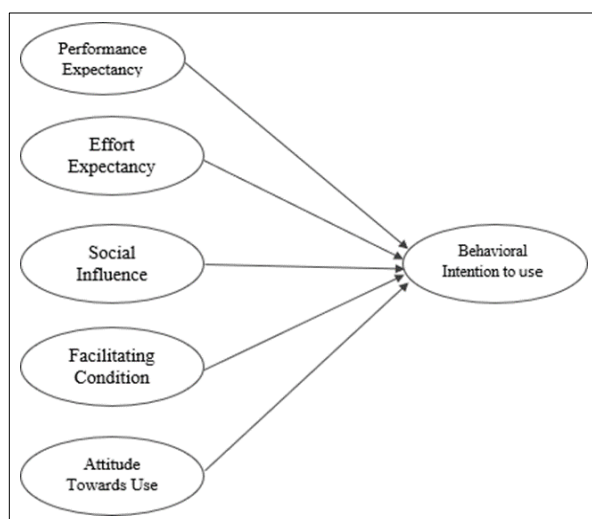
This study aims to address this gap by investigating the factors that influence the intention to adopt telemedicine services in metropolitan city hospitals, with a specific focus on Chennai, India. Grounded in the UTAUT framework, this research provides empirical evidence to guide policymakers, hospital administrators, and healthcare professionals in designing effective strategies to foster telemedicine integration and realize its full potential for enhancing urban healthcare delivery.

2. Literature review and hypotheses development

The Unified Theory of Acceptance and Use of Technology (UTAUT) provides a robust theoretical framework for understanding technology adoption (Venkatesh *et al.*, 2003) ^[8]. It posits that Performance Expectancy, Effort Expectancy, Social Influence, and Facilitating Conditions are primary determinants of behavioral intention and use behavior.

Prior research has applied this model to telehealth. Davis (1989) ^[1] established that perceived usefulness and ease of use are fundamental to technology acceptance. Studies in the Indian context have highlighted the importance of non-technological factors, such as awareness, cost-effectiveness, and the mindset of both providers and consumers (Udita *et al.*, 2014; Sharma & Kaur, 2018) ^[7, 5]. Subhagata *et al.* (2015) ^[6] emphasized the critical role of ICT support and organizational measures for the successful implementation of telemedicine services.

However, a research gap remains concerning the weighted importance of these factors specifically within the structured environment of metropolitan hospitals, where infrastructure is presumably better but systemic and cultural resistances might be different. Based on the UTAUT model and the identified gap, we propose the following conceptual model and hypotheses:



- **H₁:** Performance Expectancy has a significant positive influence on Behavioral Intention to adopt telemedicine.
- **H₂:** Effort Expectancy has a significant positive influence on Behavioral Intention to adopt telemedicine.

- **H₃:** Social Influence has a significant positive influence on Behavioral Intention to adopt telemedicine.
- **H₄:** Facilitating Conditions have a significant positive influence on Behavioral Intention to adopt telemedicine.
- **H₅:** Attitude Towards Using has a significant positive influence on Behavioral Intention to adopt telemedicine.
- **H₆:** There is a significant difference in Behavioral Intention to adopt telemedicine across different locations (Urban, Suburban, and Rural).
- **H₇:** Location and the perception that telemedicine saves time for professionals are dependent.
- **H₈:** Prior experience with telemedicine and the perception that it saves time for professionals are dependent.

3. Research Methodology

3.1 Research design and data collection

This study employed a descriptive research design with a mixed-methods approach. A quantitative survey was supplemented with qualitative insights from in-depth interviews to provide a comprehensive understanding. Data were collected from 107 respondents, including doctors, nurses, and hospital administrators in Chennai, using a convenience sampling technique. The questionnaire was distributed both online (via Google Forms) and through direct contact.

3.2 Measurement Instrument

The structured questionnaire was divided into three sections: (1) Demographic details of respondents, (2) Awareness and experience with telemedicine, and (3) Constructs adapted from the UTAUT model (Performance expectancy, effort expectancy, social influence, facilitating conditions, attitude towards using, and behavioral intention). Items were measured on a five-point likert scale.

3.3 Data Analysis

The collected data were analyzed using SPSS software (version 26). Multiple regression analysis was used to test hypotheses H₁-H₅. One-way ANOVA was employed to test H₆, and Chi-square tests of independence were conducted to test H₇ and H₈.

4. Results and Analysis

4.1 Sample Profile

The sample consisted of 107 respondents. The majority (88.79%) were between 20-40 years old. The gender distribution was nearly equal (Male: 46.73%, Female: 50.47%). Geographically, 45.79% were from urban areas, 25.23% from suburban, and 28.97% from rural areas. The sample was almost evenly split between those with healthcare experience (48.6%) and those without (51.4%).

4.2 Regression Analysis

A multiple regression was performed to predict Behavioral Intention based on the five independent variables. The model was statistically significant ($F(5, 101)=27.563$, $p<.001$) and explained 57.7% of the variance ($R^2=.577$). As shown in Table 1, only Effort Expectancy ($\beta=0.400$, $p<.001$) and attitude towards using ($\beta=0.231$, $P=0.020$) were significant positive predictors. Thus, H₂ and H₅ are supported, while H₁, H₃, and H₄ are not supported.

Table 1: Multiple regression results for predictors of behavioral intention

| Predictor | Unstandardized B | Standard Error | Standardized β | T-Value | P-Value |
|-------------------------|------------------|----------------|----------------------|---------|---------|
| (Constant) | 4.238 | 0.653 | | 6.492 | <.001 |
| Performance Expectancy | -0.014 | 0.066 | -0.015 | -0.217 | 0.829 |
| Effort Expectancy | 0.419 | 0.116 | 0.400 | 3.628 | <.001 |
| Social Influence | -0.182 | 0.130 | -0.159 | -1.397 | 0.165 |
| Facilitating Conditions | -0.084 | 0.087 | -0.072 | -0.975 | 0.332 |
| Attitude Towards Using | 0.242 | 0.102 | 0.231 | 2.360 | 0.020 |

4.3 Analysis of Variance (ANOVA)

A one-way ANOVA was conducted to compare the effect of location on Behavioral Intention. There was a significant effect of location on intention at the $p < .05$ level [$F(2, 104) = 3.962$, $P = 0.022$]. Post-hoc tests (Turkey) revealed that the mean score for Urban respondents ($M = 2.55$, $SD = 0.675$) was significantly higher than for Rural respondents ($M = 2.04$, $SD = 0.841$). H_6 is supported.

4.4 Chi-Square Tests

A Chi-Square Test of Independence showed a significant association between Location and the perception of time savings for professionals, $\chi^2(4, N = 107) = 10.231$, $P = 0.037$. H_7 is supported.

Similarly, a significant association was found between prior Experience with telemedicine and the perception of time savings, $\chi^2(4, N = 107) = 33.531$, $p < 0.001$. H_8 is supported.

5. Discussion and Implications

5.1 Key Findings

This study identifies effort expectancy (ease of use) and attitude towards using as the most significant direct predictors of the intention to adopt telemedicine in metropolitan hospitals. This suggests that healthcare professionals are more likely to adopt these technologies if they are user-friendly and if they hold a positive overall attitude toward them.

The non-significance of Performance Expectancy, Social Influence, and Facilitating Conditions is intriguing. It implies that while users believe telemedicine is useful (high mean score of 3.50), this belief does not directly translate into adoption intention in the presence of other factors. Similarly, the influence of peers (Social Influence) and the availability of resources (Facilitating Conditions) may be secondary to the fundamental issues of usability and personal attitude in this context.

The significant variation in intention based on location underscores a digital divide even within a metropolitan catchment area, with urban users showing greater readiness. The strong association between prior experience and perceived time savings highlights that hands-on exposure is crucial for recognizing the practical benefits of telemedicine.

5.2 Theoretical and Practical Implications

Theoretically, this study validates and refines the UTAUT model in the specific context of metropolitan telemedicine, highlighting the paramount importance of ease of use and attitude.

Practically, the findings offer clear directives for stakeholders:

- **For Developers & Administrators:** Invest in intuitive, user-friendly telemedicine platform design. Complexity is a major barrier.

- **For hospital management:** Implement targeted training and awareness programs to build positive attitudes and demonstrate value, especially among skeptical staff.
- **For policymakers:** Develop strategies that address the adoption gap between urban and suburban/rural practitioners within metropolitan systems, potentially through incentives or infrastructure support.

6. Conclusion, Limitations and Future Research

This study confirms that the path to telemedicine adoption in metropolitan hospitals is primarily paved by ensuring the technology is easy to use and by fostering a positive attitude toward it. Addressing these core issues is more immediately impactful than focusing solely on demonstrating usefulness or improving resources.

The study's limitations include the use of convenience sampling and a sample size restricted to one city, which may affect generalizability. The cross-sectional design also captures intention rather than actual use behavior.

Future research should longitudinal studies to track intention into actual use. It should also explore the reasons behind the non-significance of key UTAUT constructs in this setting and investigate adoption barriers from the patient's perspective to provide a holistic view of the telemedicine ecosystem.

7. References

1. Davis FD. Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*. 1989;13(3):319-340.
2. Gajarawala SN, Pelkowski JN. Telehealth benefits and barriers. *The Journal for Nurse Practitioners*. 2021;17(2):218-221.
3. Hermens H, *et al.* Telemedicine systems: A literature survey. *International Journal of Medical Informatics*. 2016;91:1-10.
4. Kapoor A, *et al.* Challenges in implementing telemedicine technologies. *Journal of Telemedicine and Telecare*. 2014;20(5):276-281.
5. Sharma D, Kaur G. A review of the research literature on telemedicine services. *International Journal of Recent Scientific Research*. 2018;9(2):23417-23421.
6. Subhagata C, *et al.* A framework for telemedicine services in Manipal, India. *Journal of Medical Systems*. 2015;39(11):1-10.
7. Uditia, *et al.* Critical success factors for eHealth services in India. *Health Policy and Technology*. 2014;3(2):119-129.
8. Venkatesh V, *et al.* User acceptance of information technology: toward a unified view. *MIS Quarterly*. 2003;27(3):425-478.
9. Wang X, *et al.* The determinants of users' intention to adopt telehealth: Health belief, perceived value and self-determination perspectives. *Journal of Medical Systems*. 2023;47(1):1-12.