What Drives Continued Use of Telemedicine in Saudi Arabia? A Model of Confirmation, Usefulness, Social Influence, and Risk

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Abstract
Telemedicine has emerged as a vital component of healthcare delivery, particularly in Saudi Arabia, where its adoption was significantly accelerated by the COVID-19 pandemic. Despite widespread adoption, understanding the factors driving continued use of telemedicine applications remains critical to ensuring their long-term sustainability. This study examines the effects of confirmation (CF), perceived risk (PR), perceived usefulness (PU), and social influence (SINF) on users' intention to continue using the Sehhaty telemedicine application in Saudi Arabia. A quantitative research design was employed, utilizing stratified random sampling to ensure representativeness across population subgroups. Data were collected from 397 telemedicine users and analyzed using SPSS for descriptive analysis and SmartPLS for Partial Least Squares Structural Equation Modelling (PLS-SEM). The findings indicate that confirmation and social influence have significant positive effects on continuance intention, with social influence emerging as the strongest predictor. Perceived usefulness also exhibits a positive, albeit weaker, significant effect on intention, whereas perceived risk does not significantly influence continued use. The model explains a substantial proportion of variance in continuance intention, highlighting the robustness of the proposed framework. These results underscore the importance of social and contextual factors in sustaining telemedicine use within government-led digital health ecosystems and offer practical implications for healthcare policymakers and platform developers seeking to enhance long-term user engagement with national telemedicine services.
Keywords: Telemedicine, Continuous Use Intention, Perceived Usefulness, Social Influence, Confirmation, Perceived Risk, Saudi Arabia

Introduction

Telemedicine, broadly defined as the delivery of healthcare services via telecommunications and digital technologies, has become an increasingly important approach for modern health systems because it can expand access, improve continuity of care, and enhance service efficiency (Al-Haimi et al., 2024). Its importance is especially clear in settings where geographic distance, limited specialist availability, time constraints, and mobility issues limit timely access to medical services. By enabling remote consultation, triage, follow-up, and monitoring, telemedicine can help reduce unnecessary visits, streamline clinical workflows, and support patient-centered care pathways, thereby leading to better health outcomes and more resilient service delivery (Anawade et al., 2024).

The global salience of telemedicine intensified markedly during the COVID-19 pandemic, accelerating adoption and normalizing remote care as a mainstream complement to conventional service delivery (Zahidah & Al-haimi, 2024). In Saudi Arabia, telemedicine expansion has been closely linked to the broader national trajectory toward digital health transformation, supported by policy direction and public-sector investments aimed at modernizing healthcare delivery and enhancing service accessibility. The Ministry of Health (MOH) has been instrumental in this transition through national initiatives and platform-based solutions, including strengthening telemedicine infrastructure and efforts to integrate digital health services into the healthcare ecosystem (Al-Samarraie et al., 2020; Bashir et al., 2023; AlFawaz & Alrasheed, 2023). Consequently, telemedicine has been operationalized across multiple domains, including teleconsultation, tele-emergency support, and tele-pharmacy, while applications such as Seha, Sehhaty, and Mawid have facilitated scalable, user-facing service delivery (Al-Samarraie et al., 2020; Mohiuddin et al., 2021).

Despite rapid diffusion, the strategic value and clinical utility of telemedicine depend not merely on initial uptake but on sustained engagement over time. High levels of early adoption can be offset by discontinuance if users' experiences do not meet expectations, if perceived value weakens, or if concerns regarding privacy and reliability remain unresolved. From a system-level perspective, discontinuance undermines the return on digital health investments, complicates capacity planning, and limits health authorities' ability to institutionalize digital care pathways. For this reason, continuance intention has emerged as a critical lens for evaluating telemedicine effectiveness, particularly in national contexts that are scaling platform-based digital healthcare at the population level.

Against this background, the present study investigates the continuance intention to use Sehhaty, a prominent digital health and telemedicine application in Saudi Arabia, by examining the roles of confirmation, perceived usefulness (PU), social influence (SI), and perceived risk (PR). This focus is theoretically and practically warranted. The Technology Acceptance Model and related technology adoption perspectives emphasize perceived usefulness as a central determinant of acceptance and continued use, given that users are more likely to persist with systems they believe enhance performance and yield meaningful benefits. Empirical evidence further suggests that user confidence and social support can strengthen perceived usefulness and facilitate sustained engagement (Porat-Packer et al., 2025). At the same time, perceived risk, encompassing concerns about privacy, data security, service reliability, and potential financial exposure, remains a salient barrier in digital health, where trust is closely tied to users' expectations of confidentiality and safe information

handling (Binyamin & Hoque, 2020; Alamir, 2024). Social influence may also shape continuance decisions in health technology contexts, as norms, peer expectations, and recommendations can validate use, reinforce perceived value, and encourage repeated engagement with telehealth services (Mirabootalebi et al., 2024). Finally, confirmation reflects the extent to which users' experiences align with prior expectations; when confirmation is high, users are more likely to report favorable evaluations and sustained usage intentions, whereas expectation–experience gaps can prompt dissatisfaction and attrition (Binyamin & Hoque, 2020; Mirabootalebi et al., 2024).

The significance of this study lies in its potential contributions to strengthening the long-term performance of telemedicine within Saudi Arabia's evolving digital health ecosystem. By identifying the determinants of continuance intention for a widely used national platform, the findings can inform MOH strategies aimed at improving retention and optimizing digital service delivery, guide healthcare providers seeking to integrate telemedicine more effectively into routine care pathways, and support platform designers in prioritizing features that enhance value perception and mitigate risk-related concerns. More broadly, clarifying the mechanisms that sustain telemedicine engagement contributes to the evidence base required to translate digital health adoption into durable health system gains, including improved accessibility, service efficiency, and patient experience.

Accordingly, this study addresses the following research questions: (1) How does confirmation of user expectations influence the intention to continue using the Sehhaty telemedicine platform in Saudi Arabia? (2) Does perceived usefulness positively influence users' intention to continue using the Sehhaty telemedicine application in Saudi Arabia? (3) How does social influence impact users' intention to continue using the Sehhaty telemedicine application in Saudi Arabia? and (4) Does perceived risk negatively affect the continuous use of the Sehhaty telemedicine application in Saudi Arabia?

Literature Review and Hypotheses Development
The following subsections develop the hypotheses for all the variables in the framework shown in Figure 2.1. The variables used are confirmation, perceived usefulness, Socio-Cultural Influence, and perceived risk.

Confirmation
Confirmation refers to the extent to which users perceive that their expectations of a technology or service have been met after actual use (Gupta et al., 2020). Rooted in Expectation-Confirmation Theory (ECT), it plays a critical role in understanding post-adoption behaviors. In the context of telemedicine, confirmation occurs when users feel that the service aligns with their initial expectations regarding accessibility, convenience, quality of care, or security (Alsadhan et al., 2022). For example, if users expect telemedicine to save time and reduce travel, their perception of confirmation depends on whether these benefits are realized during their experience with the service. In telemedicine, confirmation is vital for building trust and encouraging user engagement, especially in Saudi Arabia, where expectations regarding service quality and accessibility influence healthcare choices. Studies highlight that confirmation significantly impacts user satisfaction and perceived usefulness, paving the way for ongoing engagement. These findings lead to the following hypothesis:

H1: Confirmation positively influences patients' willingness to continue using *Sehhaty* telemedicine application.

Perceived Usefulness
Perceived usefulness, a core concept in the Technology Acceptance Model (TAM), indicates how effectively a system enhances user performance or fulfills specific needs (Li et al., 2019). In healthcare, telemedicine's ability to improve access, reduce consultation times, and enhance outcomes makes perceived usefulness crucial for satisfaction and continued use. Research by Kissi et al. (2020) shows that users who view telemedicine as beneficial are more likely to be satisfied and continue using it. Mao et al. (2023) highlight that in Saudi Arabia, perceived usefulness is strongly linked to long-term engagement, driven by trust and reliability. Thus, we propose the following hypothesis:
H2: Perceived usefulness positively impacts patients' continuance intention to use *Sehhaty* telemedicine application.

Social Influence
Social influence plays a critical role in shaping patients' continuance intention to use telemedicine in Saudi Arabia. Family influence, community trust, and prevailing cultural norms strongly affect how users perceive and engage with telehealth services. Prior studies indicate that socio-cultural preferences, particularly the traditional reliance on face-to-face interactions, can either facilitate or hinder sustained telemedicine use (Baradwan & Al-Hanawi, 2023).

Empirical evidence consistently confirms the significance of social influence in telemedicine adoption and continuance. Normative beliefs, peer recommendations, and family endorsement have been shown to positively influence users' intention to continue using telehealth services (Harst et al., 2019). Similarly, perceived autonomy support as a form of social influence has a direct effect on continuance intention, highlighting the importance of supportive social environments in sustaining telemedicine usage (Hsieh et al., 2022). This effect is particularly pronounced among older users, where subjective norms play a decisive role in behavioral intention (Gallardo et al., 2024).

Accordingly, this study hypothesizes that social influence positively affects patients' continuance intention to use the Sehhaty telemedicine application.
H3: Social influence has a positive effect on patients' continuance intention to use the Sehhaty telemedicine application.

Perceived Risk
Perceived risks, including concerns over privacy, data security, and service reliability, often undermine trust in telemedicine platforms (Wu & Ho, 2023). Bakshi and Tandon (2022)found that perceived risks negatively affect trust, creating barriers to telemedicine adoption (Bakshi & Tandon, 2022). Addressing these risks is crucial for fostering a reliable and secure environment, as emphasized by Alsadhan et al. (2022). This leads to the following hypothesis:
H4: Perceived risk has a negative effect on patients' continuance intention to use *Sehhaty* telemedicine application.
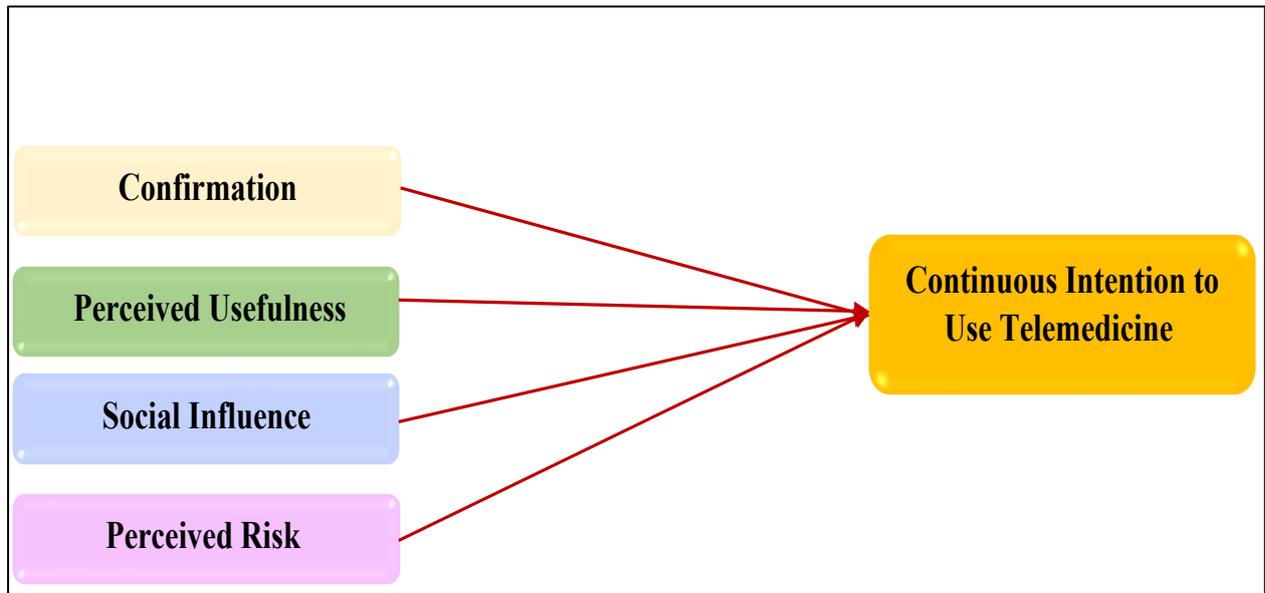
Figure 1.1: Research Framework

Methodology and Measurements

This study employs a quantitative research methodology to systematically analyze the factors influencing the intention to continue using telemedicine in Saudi Arabia. This approach aligns with prior studies that have successfully applied quantitative methods to assess telemedicine adoption in diverse healthcare settings, offering a scalable way to evaluate user engagement and satisfaction (Mackwood et al., 2022). The unit of analysis in this study is the individual telemedicine user. This research uses stratified random sampling to enhance the representativeness and reliability of the findings. Stratified sampling is particularly effective in healthcare studies as it ensures that distinct population subgroups are proportionally represented, thereby reducing sampling bias and improving the precision of estimations.

In total, 397 valid responses were obtained, exceeding the minimum sample size requirements for structural equation modeling (SEM). According to Roscoe (1975), an appropriate sample size should range from 30 to 500 cases, while Hair et al. (2006) further recommend a minimum of 5 observations per estimated parameter. Given that the proposed research model comprises 17 measurement items, the minimum required sample size would be 85 respondents. Therefore, the final sample of 397 respondents not only satisfies but substantially exceeds these thresholds, thereby enhancing the robustness, statistical power, and generalizability of the study's findings. The measurements of these study variables have been adopted from reliable sources (See Appendix A). Continues Intention adopted from (Wijaya & Sihombing, 2023), Confirmation has been adopted from (Chandra et al., 2025), perceived usefulness from (Liu & Tao, 2022), social influence from (Baptista & Oliveira, 2015), and perceived risks from (Kamal et al., 2020).

Data Analysis and Results
Data were first cleaned and prepared for statistical analysis. Descriptive statistics were conducted to profile the respondents. To assess the measurement model, reliability and validity tests were conducted, including Cronbach's alpha, Composite Reliability (CR), and

Average Variance Extracted (AVE), as well as discriminant validity checks using the Fornell–Larcker criterion.

For hypothesis testing, correlation and regression analyses were employed to examine direct effects.

Results

Demographic Profile of Respondents

Table 4.1 presents the demographic characteristics of the respondents involved in this study (n = 397). The profile provides an overview of the sample composition by gender, age, educational attainment, and place of residence, thereby providing context for interpreting the subsequent empirical findings. Regarding gender distribution, the majority of respondents were male (63.2%, n = 251), while females accounted for 36.8% (n = 146). This indicates a male-dominated sample, which may reflect the actual user composition of the studied context.

Regarding age, respondents were predominantly within the economically active age groups. The largest proportion fell within the 36–45 age category (38.8%, n = 154), followed by those aged 26–35 (29.2%, n = 116). Respondents aged 45 and above accounted for 21.9% (n = 87), while the youngest group (18–25 years) accounted for 10.1% (n = 40). This distribution suggests that the sample is largely composed of mature and working-age individuals with sufficient exposure and experience relevant to the study context.

With respect to educational background, the respondents were generally well educated. More than half of the participants held a master's degree (52.9%, n = 210), followed by those with a PhD degree (15.1%, n = 60) and a bachelor's degree (14.1%, n = 56). Diploma holders accounted for 11.1% (n = 44), while only 1.3% (n = 5) had a high school qualification. The remaining respondents reported other forms of educational attainment (5.5%, n = 22). This high level of education suggests that respondents are likely to possess adequate knowledge and cognitive ability to evaluate and respond meaningfully to the survey items.

In terms of place of residence, 39.0% of respondents (n = 155) resided in rural areas, 34.3% (n = 136) lived in urban areas, and 26.7% (n = 106) were from suburban locations. This relatively balanced distribution enhances the sample's representativeness across different residential contexts. Overall, the demographic profile indicates that the sample is diverse and adequately representative across age, education, and residential background, thereby supporting the robustness and generalizability of the study's findings.

Table 4.1
Demographic Profile of Respondents (n= 397)

Variable	Frequencies (N = 397)	Percentage (100%)
Gender		
Male	251	63.2
Female	146	36.8
Age		
18-25	40	10.1
26-35	116	29.2
36-45	154	38.8
>45	87	21.9
Education		
High School	5	1.3
Diploma	44	11.1
Bachelor's degree	56	14.1
Master's degree	210	52.9
PHD Degree	60	15.1
Others	22	5.5
Place of Residence		
Rural	155	39.0
Suburban	106	26.7
Urban	136	34.3

Measurement Model Assessment
The measurement model was assessed prior to evaluating the structural relationships to ensure the reliability and validity of all latent constructs. Following established guidelines for Partial Least Squares Structural Equation Modelling (PLS-SEM), the assessment focused on indicator reliability, internal consistency reliability, convergent validity, and discriminant validity (Hair et al., 2021). The results of the measurement model are summarized in Figure 4.1 and Tables 4.2 and 4.3.

Indicator Reliability and Internal Consistency
Indicator reliability was assessed using the standardized factor loadings for each measurement item. As shown in Table 4.2, all indicator loadings exceeded the recommended minimum threshold of 0.70, indicating satisfactory item reliability. Specifically, factor loadings ranged from 0.764 to 0.949 across all constructs, suggesting that each indicator meaningfully contributes to its respective latent variable.

Internal consistency reliability was assessed using Composite Reliability (CR). The CR values for all constructs were well above the recommended threshold of 0.70, confirming strong internal consistency. The CR values ranged from 0.893 to 0.956, indicating that the measurement items consistently represent their underlying constructs. Overall, these results demonstrate that the measurement model is highly reliable.

Convergent Validity
Convergent validity was evaluated using the Average Variance Extracted (AVE). As presented in Table 4.2, all constructs achieved AVE values exceeding the recommended minimum threshold of 0.50. The AVE values ranged from 0.738 to 0.878, indicating that each construct

explains more than 50% of the variance in its associated indicators. This confirms adequate convergence among items measuring the same construct and supports the measurement model's convergent validity.

Discriminant Validity
Discriminant validity was assessed using the Fornell–Larcker criterion. As shown in Table X, the square root of the AVE for each construct (diagonal values) was greater than the corresponding inter-construct correlations. This finding confirms that each construct is empirically distinct and captures phenomena not represented by other constructs in the model.

In addition, the correlation values among constructs were within acceptable limits, indicating no concerns related to multicollinearity. The results collectively demonstrate that the constructs exhibit adequate discriminant validity and measure conceptually distinct dimensions. Therefore, the measurement model satisfies all recommended criteria for reliability and validity, allowing for confident evaluation of the structural model.
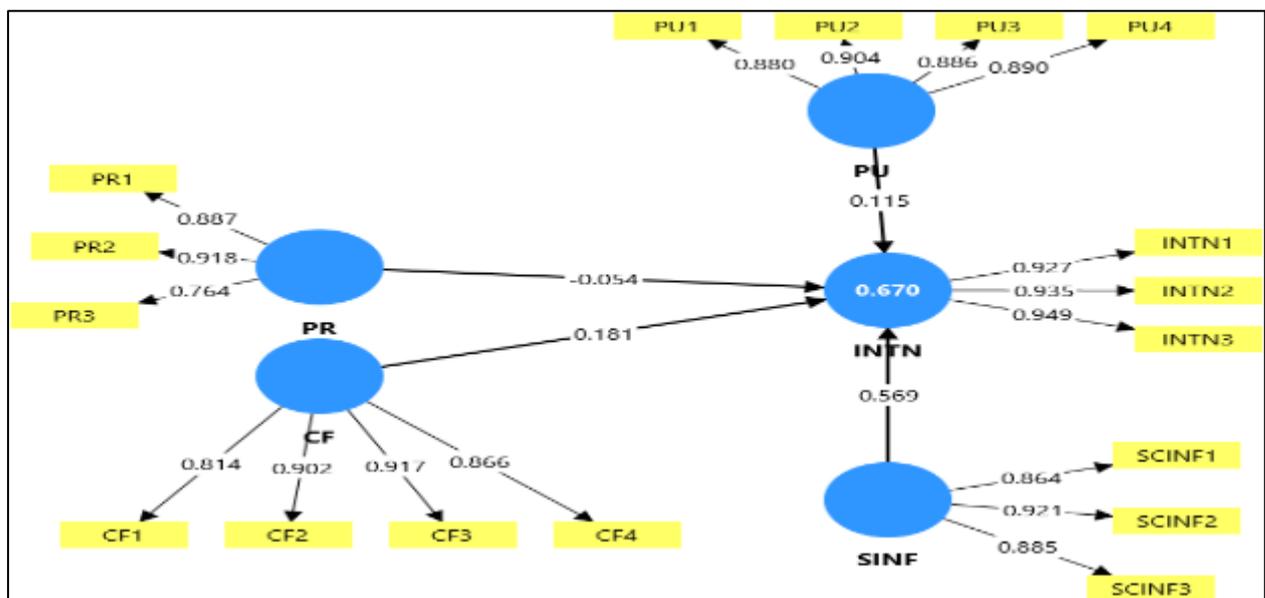

Figure 4.1: Reflective Model Framework, Outer Loadings and AVE

Table 4.2
Measurements Model Results

Items	LOADING	CR	AVE
CF1	0.814		
CF2	0.902	0.929	0.767
CF3	0.917		
CF4	0.875		
INTN1	0.927		
INTN2	0.935	0.956	0.878
INTN3	0.949		
PR1	0.887	0.893	0.738

PR2	0.918		
PR3	0.764		
PU1	0.880		
PU2	0.904		
PU3	0.886	0.938	0.792
PU4	0.890		
SINF1	0.864		
SINF2	0.921	0.920	0.793
SINF3	0.885		

Table 4.3
Discriminant validity

	CF	INTN	PR	PU	SINF
CF					
INTN	0.770				
PR	0.308	0.292			
PU	0.801	0.703	0.205		
SINF	0.846	0.885	0.278	0.772	

Structural Model Assessment
After establishing the measurement model's reliability and validity, the structural model was evaluated to test the proposed hypotheses and examine the relationships among the latent constructs. Consistent with PLS-SEM guidelines, the assessment focused on path coefficients, their statistical significance, and the model's explanatory power (Hair et al., 2021). Bootstrapping with a sufficient number of resamples was employed to obtain standard errors, t-values, and p-values.

Path Coefficients and Hypothesis Testing
Table 4.4 presents the results of the hypothesis testing. The findings indicate that three out of the four hypothesized relationships were statistically supported.

The relationship between CF and INTN was positive and statistically significant ($\beta = 0.181$, $t = 2.766$, $p = 0.003$), supporting the proposed hypothesis. This result suggests that CF plays a meaningful role in enhancing users' intention to continue using the system.

In contrast, the path from PR to INTN was negative and statistically insignificant ($\beta = -0.054$, $t = 1.637$, $p = 0.051$). As the p-value marginally exceeded the conventional 0.05 threshold, this hypothesis was not supported. The result indicates that perceived risk does not exert a significant influence on users' intention in the context of this study.

The effect of PU on INTN was positive and statistically significant ($\beta = 0.115$, $t = 2.037$, $p = 0.021$), thereby supporting the corresponding hypothesis. This finding confirms that perceived usefulness contributes to shaping users' behavioral intentions, although the magnitude of the effect is relatively modest compared to other predictors.

Finally, SINF demonstrated a strong and highly significant effect on INTN ($\beta = 0.569$, t = 8.854, $p < 0.001$), making it the most influential predictor in the model. This result highlights the critical role of social influence in shaping intention and underscores its dominance over the other explanatory variables.

Explanatory Power of the Model
The coefficient of determination (R^2) for INTN was 0.670, indicating that CF, PR, PU, and SINF collectively explain 67.0% of the variance in intention. According to established benchmarks, this represents substantial explanatory power, suggesting that the proposed model has strong predictive capability.

Overall, the structural model results provide robust empirical support for the proposed framework. While CF, PU, and SINF significantly influence intention, perceived risk does not appear to be a decisive factor in this context. The dominance of social influence suggests that external social cues and normative pressures play a pivotal role in shaping users' intentions, offering important theoretical and practical implications for stakeholders.
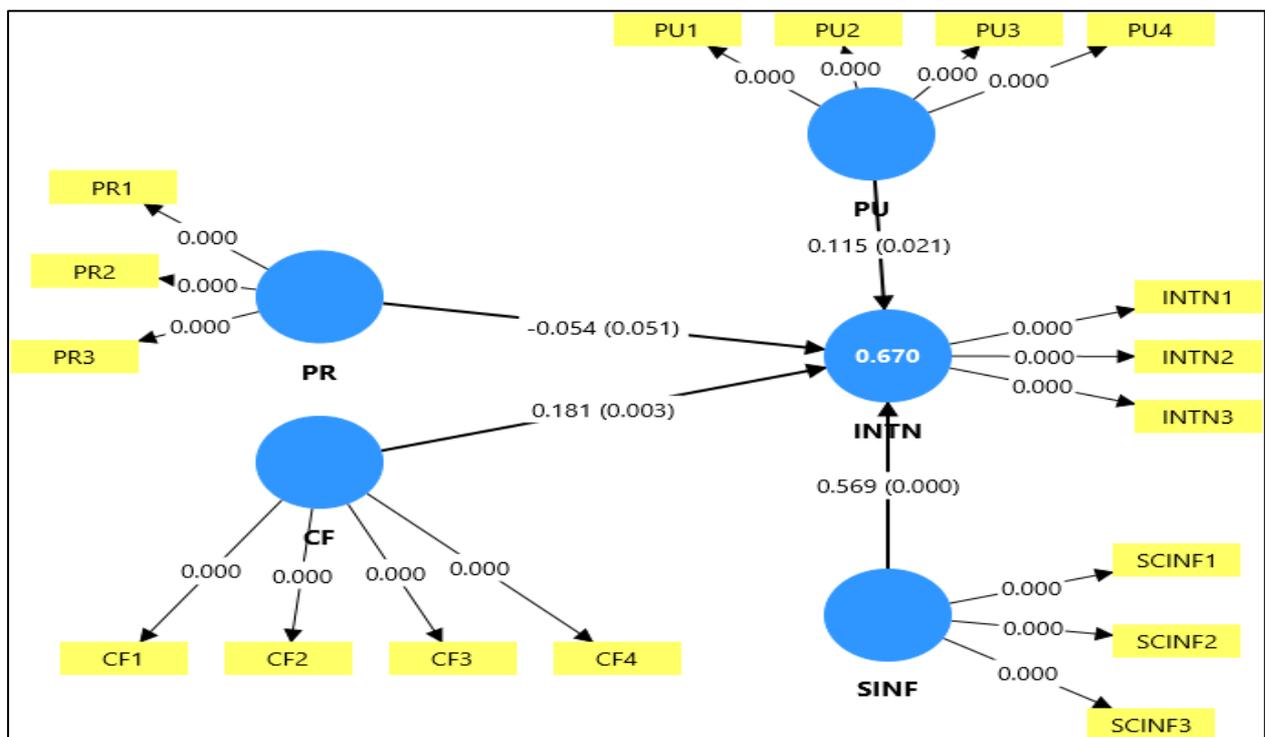

Figure 4.2 Structure Model Assessment

Table 4.4
Hypotheses Testing

Hypotheses	Structure Path	Std.Beta	St.Dev	T value	P values	Results
H1	CF -> INTN	0.181	0.066	2.766	0.003	Supported
H4	PR -> INTN	-0.054	0.033	1.637	0.051	Not Supported
H2	PU -> INTN	0.115	0.057	2.037	0.021	Supported
H3	SINF -> INTN	0.569	0.064	8.854	0.000	Supported

Discussion

This study examined the determinants of users' intention to continue using telemedicine services in Saudi Arabia by testing the effects of CF, PR, PU, and SINF on intention (INTN). The findings provide several important theoretical and practical insights into telemedicine adoption within a government-led digital health ecosystem.

Overall, the structural model demonstrates strong explanatory power, with the proposed predictors accounting for 67.0% of the variance in intention. This indicates that the model captures the key factors shaping continued telemedicine use and is well-suited to explaining user behavior in the Saudi healthcare context.

Effect of CF on Intention to Continue Use
The results reveal that CF has a positive and significant effect on intention ($\beta = 0.181$, $p = 0.003$), supporting H1. This finding suggests that when telemedicine services align well with users' needs, routines, and healthcare expectations, users are more likely to continue using them.

From a theoretical perspective, this result is consistent with innovation diffusion and technology adoption literature, which emphasizes compatibility as a critical driver of sustained technology use. In Saudi Arabia, where telemedicine platforms such as Sehhaty are integrated into daily healthcare access, aligning with users' lifestyles, cultural norms, and healthcare-seeking behaviors becomes particularly important. The positive influence of CF indicates that the platform has succeeded mainly in fitting into users' healthcare routines, reinforcing continued engagement.

Effect of Perceived Risk on Continuous Intention
Despite the well-documented role of perceived risk as a barrier to telemedicine adoption, this study finds that perceived risk does not significantly affect users' continuance intention ($\beta = -0.054$, $p = 0.051$), thereby rejecting H4. Prior research conceptualizes perceived risk as a multidimensional construct encompassing technological, security, social, and psychological risks, which can deter telemedicine adoption, particularly during periods of heightened uncertainty such as the COVID-19 pandemic (Bakshi & Tandon, 2021; Wu & Ho, 2023). However, the marginal and insignificant effect observed in this study suggests that perceived risk is not a decisive factor in shaping continued telemedicine use in the Saudi context.

This outcome can be explained through the lens of institutional trust and strong government-backed digital healthcare infrastructure. In Saudi Arabia, telemedicine services are centrally regulated, endorsed, and delivered through official national platforms, which may alleviate users' concerns regarding data privacy, security, and service reliability. As users gain experience and confidence in these trusted systems, perceived risks, while conceptually present, become less salient in influencing continuance intention. This finding is consistent with prior studies indicating that, in highly regulated healthcare environments, the influence of perceived risk diminishes over time and exerts a weaker impact on continued use than during the initial adoption stage.

Effect of Perceived Usefulness on Continuous Intention
The findings indicate that PU has a positive and significant effect on intention (β = 0.115, p = 0.021), supporting H2. This result confirms that users are more likely to continue using telemedicine services when they perceive them as helpful in managing appointments, accessing medical consultations, and improving healthcare efficiency.

Consistent with the Technology Acceptance Model (TAM), perceived usefulness remains a core determinant of behavioral intention. However, the relatively smaller effect size compared to other predictors suggests that usefulness alone may no longer be the dominant driver of continued usage. In a mature digital health environment such as Saudi Arabia's, the usefulness of telemedicine may be increasingly taken for granted, functioning as a baseline expectation rather than a differentiating factor.

Dominant Role of Social Influence
Among all predictors, SINF emerged as the strongest determinant of intention (β = 0.569, p < 0.001), providing strong support for H3. This finding underscores the pivotal role of social influence in shaping users' continued engagement with telemedicine services.
This result highlights the importance of social norms, peer recommendations, family influence, and institutional endorsement in healthcare technology adoption. In collectivist cultures such as Saudi Arabia, social approval and shared experiences play a central role in decision-making, particularly in health-related behaviors. Endorsements from healthcare professionals, family members, and government campaigns likely reinforce trust and normalize telemedicine usage, thereby strengthening intention.

The dominance of social influence suggests a shift from individual cognitive evaluation toward socially reinforced usage behavior, especially in public digital health platforms.

Theoretical and Contextual Implications
Taken together, the findings suggest that continued telemedicine use in Saudi Arabia is driven more by social and contextual factors than by individual risk perceptions. While compatibility and usefulness remain important, social influence acts as the primary mechanism shaping intention. This highlights the need to extend traditional technology adoption models by placing greater emphasis on social and institutional dimensions, particularly in government-led digital health ecosystems.

Practical Implications for the Ministry of Health (MOH) and Sehhaty
The findings provide several practical implications for the Saudi Ministry of Health and the Sehhaty platform. Given the strong influence of social media, MOH should continue to leverage trusted social agents, such as healthcare professionals, community leaders, and official public campaigns, to normalize and strengthen the use of telemedicine. Endorsements from doctors and the integration of telemedicine into regular clinical workflows can further boost users' intention to keep using the platform.

Additionally, improving compatibility remains crucial. Sehhaty should continuously update its features to match users' healthcare routines, cultural expectations, and daily practices, especially for managing chronic conditions and follow-up visits. While perceived usefulness has already been established, minor enhancements to service efficiency, personalization, and

system responsiveness can help sustain long-term engagement. Since perceived risk was not a significant concern, resources may be better spent on improving user experience and social engagement strategies rather than on excessive risk-mitigation messages.

Conclusion and Future Research

This study offers empirical evidence on the main factors influencing the intention to continue using telemedicine in Saudi Arabia. The findings show that social influence is the most significant factor driving ongoing use, followed by compatibility and perceived usefulness, whereas perceived risk does not notably impact intention. These results emphasize the role of social and institutional elements in maintaining digital health adoption within a government-led healthcare system.

Future research could expand this study by analyzing actual usage behavior rather than just intention, using longitudinal methods to observe changes over time, or including additional variables such as trust, service quality, or digital health literacy. Comparative studies between public and private telemedicine platforms, or across various cultural and national contexts, would also deepen understanding of long-term telemedicine adoption. Additionally, this study focused only on direct relationships. Future research should broaden the model to examine mediating and moderating effects, thereby offering more detailed insights into the processes and factors that influence telemedicine adoption and ongoing use.

References

Anawade, P. A., Sharma, D., & Gahane, S. (2024). A comprehensive review on exploring the impact of telemedicine on healthcare accessibility. *Cureus*, *16*(3), e55996.

Alamir, I. A. (2025). Extended Technology Acceptance Model (TAM) for Evaluating Digital Banking Adoption in Saudi Arabia. Scientific Journal of King Faisal University, Humanities & Management Sciences, 26(1).

AlFawaz, I., & Alrasheed, A. (2023). Experiences with telemedicine among family medicine residents at King Saud University Medical City during the COVID-19 pandemic: A cross-sectional study. BMC Medical Education, 23. https://doi.org/10.1186/s12909-023-04295-0

Al-Haimi, B., Ali, F., & Hujainah, F. (2024). Digital transformation in healthcare: Impact on organizations' strategies, future landscape, and required skills. In Navigating the Intersection of Business, Sustainability and Technology (pp. 61–74). Singapore: Springer Nature.

Al-Samarraie, H., Ghazal, S., Alzahrani, A. I., & Moody, L. (2020). Telemedicine in Middle Eastern countries: Progress, barriers, and policy recommendations. International Journal of Medical Informatics, 141, 104232.

Alsadhan, I., Alyusuf, E. Y., Shaltoot, O., Alruwashid, S., Alhamad, M., Ekhzaimy, A. A., Fouda, M. A., & Sulimani, R. A. (2022). Adoption of telemedicine care for osteoporotic patients during the COVID-19 pandemic: Experience from a tertiary care center in Saudi Arabia. Archives of Osteoporosis, 18.

Bakshi, S., & Tandon, U. (2021). Understanding barriers of telemedicine adoption: A study in North India. Systems Research and Behavioral Science, 39(1), 128–142. https://doi.org/10.1002/sres.2774

Baradwan, S., & Al-Hanawi, M. (2023). Perceived knowledge, attitudes, and barriers toward the adoption of telemedicine services in the Kingdom of Saudi Arabia: Cross-sectional study. JMIR Formative Research, 7(1), e46446.

Baptista, G., & Oliveira, T. (2015). Understanding mobile banking: The unified theory of acceptance and use of technology combined with cultural moderators. Computers in Human Behavior, 50, 418–430.

Bashir, M. S., Lalithabai, D. S., AlOtaiby, S., & Abu-Shaheen, A. (2023). Health care professionals' knowledge and attitudes toward telemedicine. Frontiers in Public Health, 11. https://doi.org/10.3389/fpubh.2023.957681.

Binyamin, S. S., & Hoque, M. R. (2020). Understanding the drivers of wearable health monitoring technology: An extension of the unified theory of acceptance and use of technology. Sustainability, 12(22), 9605.

Chandra Chanda, R., Vafaei-Zadeh, A., Hanifah, H., Nikbin, D., & Chang, R. (2025). Modeling telemedicine continuance usage: Findings from PLS-SEM and fsQCA. Journal of Health Organization and Management.

Gallardo, M. O., Dela Torre, J., & Ebardo, R. (2024). The role of initial trust in the behavioral intention to use telemedicine among Filipino older adults. Gerontology and Geriatric Medicine, 10, 23337214231222110.

Gupta, A., Yousaf, A., & Mishra, A. (2020). How pre-adoption expectancies shape post-adoption continuance intentions: An extended expectation-confirmation model. International Journal of Information Management, 52, 102094.https://doi.org/10.1016/j.ijinfomgt.2020.102094.

Harst, L., Lantzsch, H., & Scheibe, M. (2019). Theories predicting end-user acceptance of telemedicine use: Systematic review. Journal of Medical Internet Research, 21(5), e13117. https://doi.org/10.2196/13117.

Hsieh, H. L., Lai, J. M., Chuang, B. K., & Tsai, C. H. (2022). Determinants of telehealth continuance intention: A multi-perspective framework. Healthcare, 10(10), 2038.

Kamal, S. A., Shafiq, M., & Kakria, P. (2020). Investigating acceptance of telemedicine services through an extended technology acceptance model (TAM). Technology in Society, 60, 101212.

Kissi, J., Dai, B., Ou, W.-H., Agbi, F. A., & Obeng, E. K. (2020). An empirical study of intrinsic determinants influencing telemedicine services adoption by healthcare professionals. International Journal of Scientific Research in Science and Technology, 90–103.

Li, J., Ma, Q., Chan, A. H. S., & Man, S. S. (2019). Health monitoring through wearable technologies for older adults: Smart wearables acceptance model. Applied Ergonomics, 75, 162–169. https://doi.org/10.1016/j.apergo.2018.10.006

Liu, K., & Tao, D. (2022). The roles of trust, personalization, loss of privacy, and anthropomorphism in public acceptance of smart healthcare services. Computers in Human Behavior, 127, 107026.

Mackwood, M., Butcher, R., Vaclavik, D., Alford-Teaster, J. A., Curtis, K. M., Lowry, M., & Tosteson, A. N. (2022). Adoption of telemedicine in a rural US cancer center amid the COVID-19 pandemic: Qualitative study. JMIR Cancer, 8(3), e33768.

Mao, L., Mohan, G., & Normand, C. (2023). Use of information communication technologies by older people and telemedicine adoption during COVID-19: A longitudinal study. Journal of the American Medical Informatics Association, 30, 2012–2020.

Mirabootalebi, N., Meidani, Z., Akbari, H., Rangraz Jeddi, F., Tagharrobi, Z., Swoboda, W., & Holl, F. (2024). Design and psychometric evaluation of nurses' mobile health device acceptance scale (NMHDA-scale): Application of the expectation-confirmation theory. JMIR Human Factors, 11, e55324.

Mohiuddin, S., Thorakkattil, S., Abushoumi, F., Nemr, H., Jabbour, R., & Al-Ghamdi, F. (2021). Implementation of pharmacist-led tele medication management clinic in ambulatory care settings: A patient-centered care model in COVID-19 era. Exploratory Research in Clinical and Social Pharmacy, 4. https://doi.org/10.1016/j.rcsop.2021.100083

Porat-Packer, T., Green, G., Sharon, C., & Tesler, R. (2025). Factors influencing telemedicine adoption among healthcare professionals in geriatric medical centers: A Technology Acceptance Model approach. Behavioral Sciences, 15(10), 1367. https://doi.org/10.3390/bs15101367

Van, H., Pham, L., Williamson, S., Huong, V., Hoa, P., & Trang, P. (2020). Impact of perceived risk on mobile banking usage intentions: Trust as a mediator and a moderator. International Journal of Business and Emerging Markets, 12(1), 94. https://doi.org/10.1504/IJBEM.2020.106202

Wijaya, L., Ng, K. C., & Sihombing, P. R. (2023). Assessing determinants of the telemedicine applications continuance usage intention with TTF theory. In Proceedings of the 8th International Conference on Business and Industrial Research (ICBIR) (pp. 256–261). IEEE.

Wu, T., & Ho, C. (2023). Barriers to telemedicine adoption during the COVID-19 pandemic in Taiwan: Comparison of perceived risks by socioeconomic status correlates. International Journal of Environmental Research and Public Health, 20(4), 3504. https://doi.org/10.3390/ijerph20043504

Zahidah, S., & Al-haimi, B. (2024). Telemedicine: Transforming healthcare accessibility and quality with sustainable technological advancement. Navigating the Intersection of Business, Sustainability and Technology, 137–149.