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Factors leading to telemedicine access in a post-pandemic era in developing countries: The case of Peru

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Abstract

Telemedicine has emerged as a promising solution to address healthcare accessibility challenges in Peru, particularly in the post-COVID-19 context. However, despite the rapid adoption of telemedicine during the pandemic, once in-person consultations became more accessible again, its usage significantly declined. This highlights the need to understand the factors influencing its adoption in order that its potential can be fully realized. This study examines the role of convenience, perceived savings, privacy risks, readiness, urgency, trust in doctors, IT skills, IT connection, and symptom detection skills in shaping individuals' intention to use telemedicine. Using structural equation modeling (SEM) to analyze data from 195 participants, the study found that convenience, perceived savings, and IT skills positively influence telemedicine usage intention. Additionally, trust in the doctor enhances convenience and perceived savings, while readiness influences perceived benefits (convenience and perceived savings) and risks. This research contributes to the literature on telemedicine adoption by focusing on a post-pandemic context in developing countries, offering valuable insights for policymakers and healthcare providers to improve telemedicine as an alternative to access healthcare services in these countries.

Keywords: telemedicine, readiness, urgency, developing countries, post-pandemic era

Introduction

In recent years, the healthcare landscape in Peru has been marked by significant challenges, particularly concerning access to quality medical services. With a population exceeding 34 million people (Instituto Nacional de Estadística e Informática, 2024), Peru faces substantial disparities in healthcare access, especially between urban and rural areas. According to the World Health Organization (WHO), Peru has only 16.5 physicians per 10,000 inhabitants, notably lower than the average of 24.5 for the region of the Americas (World Health Organization, 2024). This shortage is particularly severe in the rural areas, where healthcare facilities are often understaffed and under-resourced. In regions such as Cajamarca, Huanuco, and Puno, the number of medical physicians per 10,000 inhabitants is as low as 6.5, 6.6, and 7.2, respectively (Sociedad de Comercio Exterior del Perú, 2020). As a result, many Peruvians, especially in these remote areas, struggle to receive the medical attention they need, which exacerbates existing health inequalities. One indicator of this inequality is that those in remote areas face a travel time of between 85 and 568 minutes to access a healthcare facility, compared to between 16 and 235 minutes in urban areas (Carrasco-Escobar et al., 2020).

In this challenging environment, digital health solutions have emerged as a promising approach to bridging the healthcare accessibility gap. Digital health encompasses a range of technologies, including electronic

health records, mobile health apps, and telemedicine (World Health Organization, 2020). Telemedicine, which involves delivering healthcare services via telecommunications technology, holds particular promise for expanding access to medical care in areas where traditional healthcare infrastructure is lacking (Wootton, 1997; Kamsu-Foguem and Foguem, 2014; Su et al., 2024). The potential for telemedicine to revolutionize healthcare delivery in Peru is especially significant in the light of the past COVID-19 pandemic, which highlighted the urgent need for alternative healthcare models (Gianella, Gideon, and Romero, 2021; Curioso, Coronel-Chucos, and Henríquez-Suarez, 2023).

In addition, Peru's technological infrastructure is increasingly conducive to the growth of telemedicine. At the home level, there is an Internet penetration of 90.4% (OSIPTEL, 2023b), and at least 84.1% of families have a smart device to connect to the Internet (OSIPTEL, 2023a). This level of connectivity presents a unique opportunity to leverage digital technologies for healthcare delivery. However, the success of telemedicine in Peru will depend on addressing key barriers, such as trust in digital platforms and the cultural preference for face-to-face consultations. Hence, the objective of this research is to determine the factors influencing individuals' decision to access telemedicine in Peru, provide insights that can inform policymakers and practitioners in the healthcare sector, and make recommendations to improve the usage of telemedicine. This improved usage would in turn contribute to bridging the gap between urban and rural access to healthcare services.

Literature Review

A literature review of prior studies focused on telemedicine was conducted. This section is divided into three research streams: a) studies before the COVID-19 pandemic, b) studies during the COVID-19 pandemic, and c) studies after the COVID-19 pandemic. For the first group, Saliba et al. (2012) conducted a systematic review determining there are four main factors surrounding telemedicine: legal factors, sustainability factors, cultural factors, and contextual factors, but the authors have not explored in detail specific issues within each of these categories. For their part, Rogove et al. (2012) determined the main barriers for telemedicine adoption from a physician's perspective: regulatory barriers for physician privileges, financial barriers, and cultural barriers. In addition, the systematic review by Kruse et al. (2016) identified additional barriers related to technological knowledge, infrastructure, awareness, and demographic characteristics. Finally, other studies (Menachemi, Burke, and Ayers, 2004; Rho, Choi, and Lee, 2014) assessed users' decision to adopt telemedicine, focusing mainly on trust and acceptability, increased access for remote patients, convenience, and travel costs.

In the second stream, the context for telemedicine use was completely different because forced quarantines limited in-person access to doctors in most countries. Thus, telemedicine stood as the only feasible channel to access medical services. Several factors were identified that influenced the decision to access telemedicine. Most of them, contrary to those of the first research stream (i.e, studies before COVID-19), were demographic factors, such as age (Chagpar, 2022; Mousavi Baigi, Mousavi Baigi, and Mazaheri Habibi, 2022; Nguyen et al., 2022; Molina et al., 2023), race (Chagpar, 2022; Nguyen et al., 2022; Molina et al., 2023), and household income, insurance, and gender (Chagpar, 2022; Molina et al., 2023). Another important factor was fear of getting sick due to COVID-19 contagion (Rahi, Khan, and Alghizzawi, 2021; Barrón Huamaní & Sifuentes Martínez, 2022). Finally, factors such as technological knowledge (Orrange et al., 2021; Rahi, Khan, and Alghizzawi, 2021; Mousavi Baigi, Mousavi Baigi, and Mazaheri Habibi, 2022) and infrastructure (Zachrison et al., 2020), relative advantage and ease of use (Mishra, 2020; Rahi, Khan, and Alghizzawi, 2021), preference for in-person attention (Zachrison et al., 2020; Rahi, Khan, and Alghizzawi, 2021), and trust and acceptability (Zachrison et al., 2020; Orrange et al., 2021) were found in the revised literature.

In the third group of studies, findings show that the context for post-COVID-19 medicine differs from that before and during this outbreak surge. Reingold et al. (2021) project that the use of telemedicine after the pandemic will be reduced by around 50% but will still stand higher than pre-pandemic levels. Exposure to telemedicine during the pandemic can affect users' perception of it, and public concerns about health have decreased, evidenced by the recession of public investment in this category (Luna et al., 2021, 2022, 2023, 2024). Among the main factors driving telemedicine adoption in this post-pandemic era, there is trust and acceptability (Singh, Albertson, and Sillerud, 2022; O'Sullivan, Krautwald, and Schneider, 2024), technological skills (Aldekhyyel et al., 2024; Chandrasekaran, 2024), data security and confidentiality (Singh, Albertson, and Sillerud, 2022; Chandrasekaran, 2024), and demographical factors such as age (Aldekhyyel et al., 2024; Chandrasekaran, 2024), education level and family income (Singh, Albertson, and Sillerud, 2022), and gender (Aldekhyyel et al., 2024).

Accordingly, this literature review reveals a gap in research on the factors influencing telemedicine usage decisions in a post-COVID context, particularly in countries like Peru, where healthcare accessibility challenges are pronounced. Most existing studies focus on telemedicine adoption before or during the COVID-19 pandemic, often emphasizing demographic factors, convenience, or technological infrastructure. However, few studies have examined telemedicine in a post-pandemic setting where in-person consultations are once again accessible. Additionally, contexts like the Peruvian one, with disparities in IT access that may affect individuals' perceptions of the country's readiness for this technology, have not yet been sufficiently studied.

Theoretical Framework

According to Ajzen, "people can hold many beliefs about any given behavior, but they can attend to only a relatively small number at any given moment." These beliefs are the prevailing determinants of a person's course of action and intentions (Ajzen, 1991). As a preliminary step, an open-ended questionnaire was conducted to identify Peruvians' salient beliefs about the use of telemedicine. This step was used only to identify potential variables (i.e., salient beliefs), which were later validated using a quantitative approach.

This questionnaire was applied to a first sample of 26 people to gather insights about their experiences with telemedicine and receive responses related to both the advantages and limitations of telemedicine in Peru. Participants identified several benefits, including convenience and savings. However, they also noted challenges such as a lack of technological infrastructure, the limited digital literacy among patients and healthcare providers, and risks associated with data privacy. These factors had been previously found in the reviewed literature, confirming their relevance.

In addition to the abovementioned factors, four new factors were noted in various responses: urgency of the consultation, readiness perception of the telemedicine in Peru, trust in the doctor, and the ability of patients to detect symptoms. The first one (urgency) may stand as an important issue in a post-pandemic era since accessing telemedicine is now completely optional, in contrast to the pandemic era when telemedicine was the sole option in most cases. The second and third factors (readiness and trust) may be important in developing countries where infrastructure is limited. Finally, the ability to detect symptoms may be important in various contexts but may be of special interest in developing countries with limited access to health services. These four factors had not been studied in previous studies, so they would be a new addition to the model, which is also a contribution to the present study. The definition of all the variables is shown in Table 1. Additionally, four control variables were used for the study: Age, Gender, Education, and Past Experience with telemedicine.

Stimulus-Organism-Response Framework

To develop a research model incorporating the aforementioned salient beliefs, this study adopts the stimulus-organism-response (SOR) framework (Mehrabian and Russell, 1974) to explore the relationships between the variables. This framework has been utilized to examine how environmental characteristics influence decision-making. The SOR model suggests that external stimuli—environmental factors—impact individuals' cognitive and emotional processes (organism), which subsequently lead to specific behaviors (response). Technological research extensively applied this framework to analyze consumer behavior.

Table 1: Definition of variables (salient beliefs) in the context of telemedicine in Peru

Concept	Definition
Convenience	Refers to individuals' perceptions of how easy it is to attend telemedicine consultations without traveling.
Perceived savings	Refers to the individuals' perceptions of the overall financial savings of telemedicine, including consultation and travel expenses.
IT connection	Refers to individuals' perceptions of the availability of the digital infrastructure they need to connect in a telemedicine session.
IT abilities	Refers to individuals' perceptions of digital literacy when using telemedicine platforms effectively.
Privacy risks	Refers to individuals' perceptions of potential risks associated with the confidentiality and security of personal medical data.
Urgency	Refers to the urgency of the patient's condition who wants to access a consultation.
Readiness	Refers to individuals' perceptions of how ready telemedicine is to replace in-person consultations.
Trust in the doctor	Refers to individuals' perception of the trustworthiness of the doctor they consult.
Symptom detection skills	Refers to individuals' ability to detect symptoms and to communicate them accurately and honestly in a telemedicine consultation.

The first component, stimuli, consists of factors external to individuals that shape their assessment of the outcomes related to the behavior. Accordingly, readiness, urgency, and trust in the doctor can be considered stimuli within the SOR framework, influencing cognitive and emotional responses, ultimately guiding behavior. They are considered external stimuli because they are part of the context in which the telemedicine consultation would be given. As the second component of the SOR framework, the Organism represents the intermediate state between stimulus and response, managing how behavior responds to external factors. It refers to an individual's internal state, including cognitive and emotional aspects. In this case, it will include the perceived benefits (convenience and perceived savings) and risks (privacy risks) of the patient. Finally, the response captures individuals' intention to use telemedicine.

Resources

This study introduces resources as a key factor that directly influences the Response in the SOR framework. Resources include abilities; thus, IT abilities, IT connection, and symptom detection skills lie in this category. Indeed, the availability and accessibility of resources are essential for individuals' decisions and directly impact behavior (Ajzen, 1985). In telemedicine, technological resources play a pivotal role, as patients with strong IT abilities and stable IT connections are more likely to feel confident in navigating telemedicine platforms (Scheel, Vladova, and Ullrich, 2022). For example, elderly people who tend to be less tech-savvy will most likely opt for choices that involve less interaction with technology (Bowling, Farquhar, and Browne, 1991; Neves, Amaro, and Fonseca, 2013). Similarly, individuals with better symptom detection skills are more empowered to seek medical advice remotely. Therefore, these resources

may directly affect the final Response, as they either enable or hinder patients' decision to adopt telemedicine.

Research Model and Hypotheses

Figure 1 shows a graphical representation of the research model supported by the abovementioned theoretical background and applied to the context of this study.

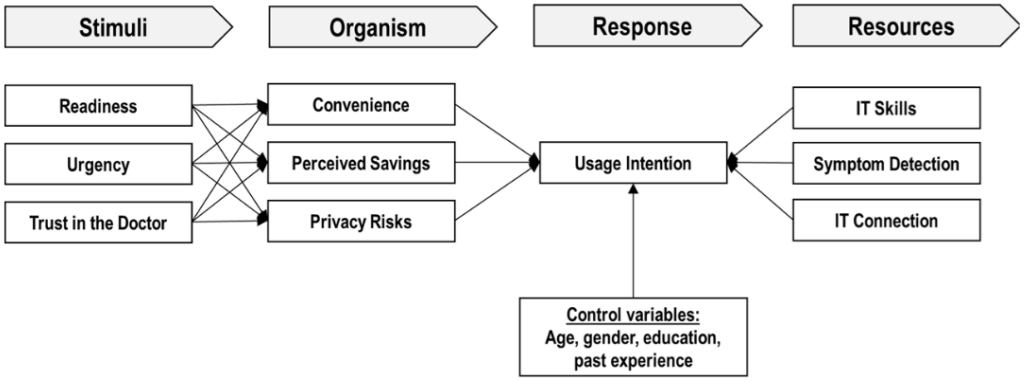


Figure 1. Research model

Hypotheses Associated with Readiness as a Stimulus

Benefits and costs associated with telemedicine may be affected by the readiness of its ecosystem. For instance, if the legal framework and infrastructure are optimal, benefits could be larger than in an ecosystem with poor infrastructure development or legal barriers to implementing telemedicine correctly. Based on this rationale, this study hypothesized:

H1: Readiness positively influences convenience
H2: Readiness positively influences perceived savings
H3: Readiness negatively influences privacy risks

Hypotheses Associated with Urgency as a Stimulus

The level of urgency of a medical condition may influence perceptions of telemedicine in varying ways. When a situation is less urgent, individuals might find telemedicine more convenient as they are less concerned about the potential for diagnostic errors or the need for immediate in-person care. This situation can lead to an increased appreciation for telemedicine's convenience and financial savings. Lower urgency also reduces stress related to privacy risks, as the need for immediate treatment does not overshadow concerns about data security. Hence, this study postulates:

H4: Urgency positively influences convenience
H5: Urgency positively influences perceived savings
H6: Urgency negatively influences concerns about privacy risks

Hypotheses Associated with Trust in the Doctor as a Stimulus

Trust in the doctor can play a critical role in shaping users' perceptions. When a doctor is categorized as trustworthy by a patient, they may feel more comfortable with remote consultations, perceiving them as convenient and effective alternatives to in-person visits. This trust can also enhance perceived financial savings, as patients are more likely to value telemedicine as a reliable and cost-effective solution.

Furthermore, higher trust in the doctor may reduce concerns about risks, as patients are more likely to feel confident that their personal information will be handled securely. Hence:

H7: Trust in the doctor positively influences convenience
H8: Trust in the doctor positively influences perceived savings
H9: Trust in the doctor negatively influences concerns about privacy risks

Hypotheses Associated with Organism Variables

According to the expectancy theory, individuals are motivated to maximize positive outcomes and minimize negative ones. Convenience and perceived savings capture individuals' assessment of positive outcomes, while privacy risks refer to individuals' perceptions of negative results. Hence:

H10: Convenience positively influences usage intention
H11: Perceived savings positively influence usage intention
H12: Privacy risks negatively influence usage intention

Hypotheses Associated with Resources

If resources are unavailable, individuals may limit their intention to use telemedicine. For example, an older adult may prefer to avoid using this platform due to limited digital skills. Similarly, individuals with poor symptom detection skills might struggle to communicate their health concerns effectively during a telemedicine consultation, reducing their confidence in the platform. Additionally, inadequate IT connection can hinder the overall experience, causing frustration and diminishing the perceived reliability of telemedicine. Based on this rationale:

H13: IT skills positively influence usage intention
H14: Symptom detection skills positively influence usage intention
H15: IT connection positively influences usage intention

Research Methodology

All variables were measured following prior studies, and the items were contextualized to fit this specific study. Except for urgency and trust in the doctor, all variables were assessed using a 5-point Likert scale, ranging from "Completely Disagree" to "Completely Agree." See the Appendix for the complete list of items. In the case of Urgency (URG) and Trust in the Doctor (TRU), these variables were measured as dichotomic variables, as they were used to create 4 scenarios (see Figure 2). In the case of Urgency, a situation representing an urgent case with severe symptoms was proposed. Likewise, a non-urgent scenario was also developed based on less severe symptoms. In the case of Trust in the Doctor, participants were presented with a case in which the doctor they should connect with is their regular doctor (high trust), and others were directed to cases where they should connect with a new doctor (low trust). In addition, before the scenario, the participants were provided with a definition of telemedicine to standardize the specific service to be assessed, which in this study was centered on access to virtual consultations.

	Low Trust	High Trust
High Urgency	I	II
Low Urgency	IV	III

Figure 2. Scenarios about Urgency and Trust in the Doctor

Data Collection and Analysis

This study targeted individuals living in Peru who were 18 or over and had access to a smart device. The data were collected through a survey administered via Google Forms, allowing participants to complete it independently. The survey was distributed in Spanish, and participants were recruited through social media, employing a snowball sampling technique to reach users with access to smart devices and who fit the age criterion to answer the survey.

In terms of data analysis, this study used structural equation modeling (SEM) to analyze the relationships between latent variables in the research model, given the correlational nature of the hypotheses, where a cause-and-effect relationship may exist based on the theoretical foundations. The analysis was conducted using SmartPLS software.

Sample

The Sample comprised 103 (52.8%) female and 92 (47.2%) male participants. In addition, around 73% of the sample were above 45 years old. Regarding previous experience with telemedicine, 18.9% of the participants have never used telemedicine, 11.8% have been using telemedicine very frequently, and the rest (about 70%) have at least some experience with telemedicine.

Results

The validity of the measurement model was established using construct reliability, convergent validity, and discriminant validity. To assess the first two, item reliability, internal consistency, and average variance extracted (AVE) were used by this study. Item reliability was assessed by examining each item's loading. Items that did not pass the 0.7 threshold were dropped, following the suggestions of Barclay et al. (1995). These items were ITS3, PRI3, REA4, USI3, and USI4 for the variables of IT skills, Privacy risks, Readiness, and Usage intention, respectively, and they were not considered for further analysis. All other items had loadings larger than 0.7 (see Appendix). The internal consistency (reliability) was assessed by examining the composite reliability and Cronbach's alpha values, which ranged from 0.891 to 0.959 and 0.774 to 0.933, respectively (see Table 2). All the values were larger than Nunnally (1978)'s recommended 0.7. This study also found that all AVE values were greater than the criterion of 0.50 suggested by Hu et al. (2004) (see Table 2). These results indicate that our measurement model is reliable and internally consistent. Finally, the heterotrait-monotrait ratio (HTMT) values were analyzed to establish discriminant validity. Table 3 shows the resulting values for this ratio, which were lower than the recommended value of 0.85 for supporting discriminant validity according to current literature (Kline, 2011).

Table 2. Reliability and Convergent Validity

Variable	α	CR	AVE
Convenience	0.873	0.922	0.798
IT connection	0.915	0.959	0.922
IT skills	0.774	0.898	0.815
Privacy risks	0.801	0.892	0.806
Perceived savings	0.933	0.957	0.882
Readiness	0.817	0.891	0.732
Symptom detection skills	0.888	0.93	0.816
Usage intention	0.885	0.946	0.897

Table 3. Heterotrait-Monotrait Ratios (HTMT)

Variable	CON	ITC	ITS	PRI	PSA	REA	SDS	TRU	URG	USI
CON										
ITC	0.394									
ITS	0.402	0.738								
PRI	0.154	0.081	0.043							
PSA	0.599	0.136	0.1	0.31						
REA	0.61	0.408	0.331	0.198	0.525					
SDS	0.4	0.515	0.268	0.063	0.385	0.597				
TRU	0.203	0.029	0.062	0.018	0.131	0.073	0.064			
URG	0.167	0.126	0.222	0.049	0.025	0.056	0.072	0.239		
USI	0.875	0.317	0.245	0.267	0.74	0.648	0.387	0.128	0.164	

CON = Convenience, ITC = IT connection, ITS = IT skills, PRI = Privacy risks, PSA = Perceived savings, REA = Readiness, SDS = Symptom detection skills, TRU = Trust in the doctor, URG = Urgency, USI = Usage intention

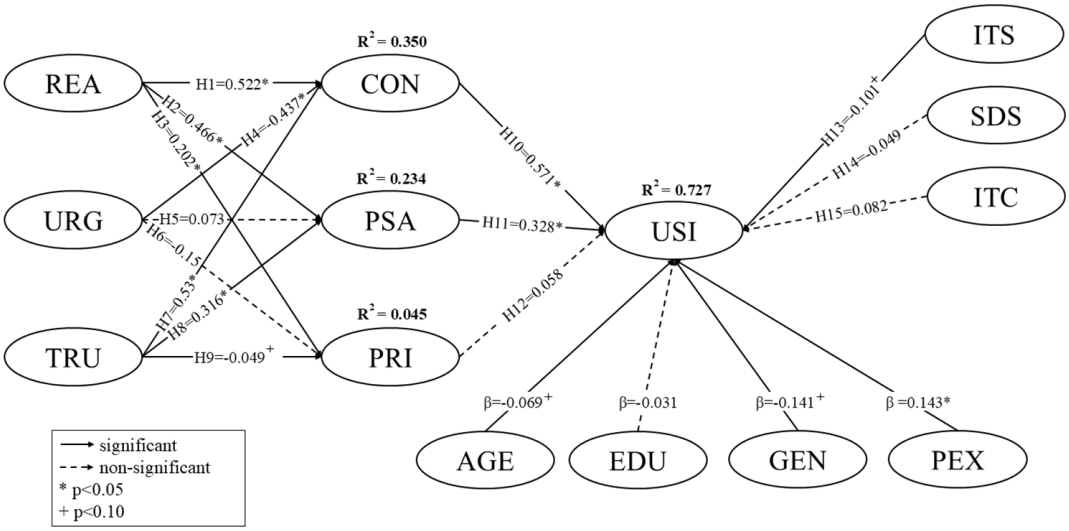
Structural Model

To assess the explanatory power of the structural model, the R^2 values of the dependent variables and the paths between them were analyzed (see Figure 3). The proposed model accounts for 34.0%, 3.0%, 22.2%, and 71.2% of the variances (R^2 values) in Convenience, Privacy risks, Perceived savings, and Usage intention, respectively.

The results of the path analysis indicate that Readiness significantly influences Convenience (H1, $p<0.001$), Privacy Risks (H2, $p<0.01$), and Perceived Savings (H3, $p<0.001$). Support was also found for the direct effect of Urgency on Convenience (H4, $p<0.001$), and for the effect of Trust in the Doctor on Convenience (H7, $p<0.001$) and on Perceived Savings (H9, $p<0.05$).

Additionally, the results show that the response of Intention is predicted by Convenience (H10, $p<0.001$) and Perceived Savings (H11, $p<0.001$). At a 90% significance level, this study also found that IT Skills (H13, $p<0.1$) influence Intention. The effects of Urgency on Privacy Risks and Perceived Savings, Trust in the Doctor on Privacy Risks, and Privacy Risks, Symptom Detection Skills, and IT Connection on Intention were found to be non-significant (H5, H6, H8, H12, H14, and H15 were not supported).

Finally, regarding the control variables, Education was found to be non-significant, but Gender ($p<0.1$) and Age ($p<0.1$) were found to influence Intention at a 90% significance level. Past Experience with telemedicine was also significant on the dependent variable ($p<0.001$).



Note: CON = Convenience, ITC = IT connection, ITS = IT skills, PRI = Privacy risks, PSA = Perceived savings, REA = Readiness, SDS = Symptom detection skills, TRU = Trust in doctor, URG = Urgency, USI = Usage intention

Figure 3. Structural Equation Model Assessment

Discussion

The adoption of telemedicine in developing countries in general, and Peru in particular, shows significant promise for addressing healthcare accessibility challenges, particularly in rural areas with limited healthcare facilities and long travel times to medical centers. Findings indicate that convenience, perceived savings, and IT skills affect Peruvians' intention to use telemedicine. Convenience and perceived savings were positively associated with usage intention, suggesting that individuals are more inclined to use telemedicine when it offers clear benefits over in-person consultations. Additionally, trust in the doctor positively influences convenience and perceived savings, highlighting the fact that familiarity with the doctor can increase patient comfort in virtual consultations. In contrast, urgency negatively influences convenience, which suggests that respondents feel telemedicine consultations are more convenient for less urgent cases. Finally, readiness positively influences convenience, privacy risks, and perceived savings.

However, some variables, such as privacy risks, symptom detection skills, and IT connection, were found to have a non-significant impact on usage intention. This result might reflect that individuals' primary concerns are more aligned with accessibility and quality of services than technical readiness or connection reliability. In the case of IT connection, the full sample had access to a smart device, so none of them had limitations in accessing telemedicine, which may explain the lack of impact of IT connection.

Theoretical Implications

Previously, the study identified gaps in the literature regarding the factors influencing telemedicine usage decisions in a post-COVID context, particularly in places like Peru. While prior research has extensively explored telemedicine adoption during the pandemic and in other global contexts, limited attention has been given to understanding how users' decisions are shaped when telemedicine is no longer the only option for accessing healthcare. Moreover, the unique challenges and socioeconomic disparities prevalent in

developing countries, such as uneven IT infrastructure and healthcare resource allocation, have not been adequately addressed in existing studies.

To cover this gap effectively, this study incorporates variables that reflect the socioeconomic and healthcare disparities in access to healthcare services in developing countries in a post-pandemic era. For example, urgency may be a significant issue now since accessing telemedicine is completely optional, in contrast to the pandemic era when telemedicine was the sole option. Second, readiness, trust, and ability to detect symptoms may be important in developing countries where infrastructure and access to healthcare services are limited. Additionally, the research leverages the Stimulus-Organism-Response (SOR) framework, providing a structured approach to understanding how external stimuli and individual perceptions influence telemedicine adoption.

Practical Implications

Given these findings, this study proposes practical recommendations for policymakers and healthcare providers. Policymakers play a critical role in fostering the adoption of telemedicine in Peru by addressing systemic barriers and building a supportive ecosystem. One key area to enhance is readiness, achieved through legislative measures and government training initiatives. New laws can be enacted to establish precise requirements for telemedicine practices, standardizing procedures for both public and private healthcare providers. Additionally, integrating telemedicine into the medical school curriculum can ensure that future generations of doctors are equipped with the skills needed to conduct remote consultations effectively. This approach addresses concerns about readiness and builds trust among patients.

Public hospitals can contribute by implementing policies prioritizing telemedicine for non-urgent cases, such as routine check-ups or follow-up consultations. This strategy optimizes healthcare resources by reducing the burden on physical services while maintaining accessibility for patients requiring in-person care. Remote facilities could be established in more remote areas, where essential diagnostic equipment like X-rays or MRIs is unavailable. These facilities would be staffed by technicians trained to operate the necessary machinery, while the medical expertise would be provided remotely by highly qualified doctors based in urban centers. Such a hybrid model would ensure that patients in underserved regions can access diagnostic services and expert advice without extensive travel. Another critical component is improving digital skills among the population. Policymakers could integrate digital literacy training into school curricula to prepare future generations for a technologically advanced healthcare landscape. For the current population, free courses and hospital help centers could offer practical guidance on navigating telemedicine platforms. These initiatives would empower users to feel confident and ready to access telemedicine.

To complement these efforts, policymakers could launch national campaigns to raise awareness about the benefits of telemedicine. These campaigns would emphasize how telemedicine can improve healthcare access, convenience, and efficiency, targeting rural areas where unfamiliarity with technology may pose additional challenges. By increasing awareness and providing training, telemedicine can be presented as a practical and reliable solution for healthcare needs. Policymakers can also play a role in expanding the IT infrastructure to ensure telemedicine’s feasibility. Collaborations with telecommunications companies could help improve connectivity in underserved areas. Incentives for expanding networks into rural regions would further reduce barriers to telemedicine and ensure more equitable access to healthcare across Peru.

Additionally, to expand telemedicine's reach across Peru, physicians can support rural outreach initiatives conducted through telemedicine. By participating in remote programs to provide healthcare to underserved populations, they can extend their expertise to areas with limited medical resources. These outreach efforts

can bridge healthcare availability gaps and demonstrate telemedicine's practical benefits to wider communities. By focusing on trust-building, education, and outreach, physicians can drive the growth of telemedicine while ensuring that it is perceived as a trustworthy and effective healthcare solution.

Limitations and Future Studies

This study has some limitations. First, non-probabilistic sampling techniques usually lead to non-representative samples, which means that results cannot be directly generalized in other contexts. In addition, although scenario-based studies might provide useful insights, they still have some limitations, which may be further improved using real contexts. Accordingly, future studies might include samples with different features and using real cases (instead of scenarios) to improve the external validity of these results. Finally, it is also important to highlight that symptom-detection abilities may unintentionally encourage individuals to self-diagnose, or to overestimate their ability to manage care without clinical guidance. Therefore, telemedicine should be used with caution, especially in contexts with low health literacy.

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Appendix: Survey Items

Item	Question	Loading
Readiness (REA)		
REA1	I see accessing telemedicine as similar to attending an in-person consultation.	0.864
REA2	Telemedicine gives people more control over their daily lives.	0.837
REA3	I am confident that a telemedicine appointment will meet the purpose for which I attended it.	0.865
REA4	Any results from the telemedicine appointment that I get should be confirmed later with an in-person appointment.	*
Convenience (CON)		
CON1	In this scenario, I think that using telemedicine would be convenient so that I do not have to attend the in-person appointment.	0.896
CON2	In this scenario, I think it is convenient that I would only need an electronic device to access telemedicine.	0.854
CON3	In this scenario, I think that telemedicine would be a very convenient tool for accessing medical services.	0.927
Perceived Savings (PSA)		
PSA1	In this scenario, I think that the price reduction that telemedicine services offer compared to in-person consultations would mean a great saving.	0.953
PSA2	In this scenario, I think that people would save a large amount of money on medical services by accessing telemedicine.	0.925
PSA3	In this scenario, I feel that the amount of money I would save by accessing telemedicine compared to face-to-face medical consultations would be significant.	0.940
Privacy Risks (PRI)		
PRI1	In this scenario, I feel that as a result of using telemedicine, others would know more about me than I would be comfortable with.	0.979
PRI2	In this scenario, I feel that as a result of using telemedicine, information about me that I consider private would be more available to others than I would like.	0.806
PRI3	I feel that as a result of my using telemedicine, information about me is out there that, if used, will invade my privacy.	*
IT Connection (ITC)		
ITC1	My internet connection is good enough to allow me to access telemedicine consultations comfortably.	0.961
ITC2	I have the required IT devices to access telemedicine.	0.959
IT Skills (ITS)		
ITS1	For me, accessing services online is easy.	0.923
ITS2	I would rate my internet skills as...	0.882

ITS3	How often have you accessed online services (shopping, medicine, etc.) in the past month?	*
Symptom Detection Skills (SDS)		
SDS1	I am confident in my ability to detect my symptoms.	0.889
SDS2	I am confident that I can report my symptoms to a doctor through a telemedicine appointment.	0.899
SDS3	I am confident in my understanding of my symptoms.	0.920
Usage Intention (USI)		
USI1	In this scenario, I would intend to access telemedicine.	0.947
USI2	In this scenario, I would expect to access telemedicine.	0.898
USI3	In this scenario, I would likely access telemedicine.	*
USI4	Even in this scenario, I would not access telemedicine.	*

(*) The item was dropped because its loading was lower than 0.7.