

# Exploring user acceptance of medical e-appointment systems for mental healthcare: a systematic literature review

Loubna Khalil<sup>1</sup>([Orcid:0000-0002-9318-1117](https://orcid.org/0000-0002-9318-1117)), Zineb Serhier<sup>1</sup>([Orcid: 0000-0002-0856-696](https://orcid.org/0000-0002-0856-696))

<sup>1</sup>Clinical Neurosciences and Mental Health Laboratory, Faculty of Medicine and Pharmacy, Hassan II University, Casablanca, Morocco

**Abstract.** Currently, various digital platforms are available to facilitate medical appointment-making; their use supports a value proposition to optimize patient-physician transactions and reduce the workload associated with traditional medical appointment-making. Studies on online medical appointment systems focus on their effectiveness, their contribution to improving healthcare services, the causes and effects of missed appointments, and user satisfaction with these systems. Unfortunately, there is very little earlier research that addresses the user acceptance of medical e-appointment systems. Hence, this study aims to synthesize research that has assessed the acceptance and use of MEAS in a mental healthcare setting. The literature search was conducted using four databases: Web of Science, Science Direct, PubMed, and Google Scholar. Of the 805 studies collected, 11 empirical studies with a focus on applying theories and models of technology acceptance and use with publication dates ranging from 2012 to 2023 were analyzed in depth. The main results confirmed that no studies have been conducted to assess the acceptance of medical e-appointment scheduling systems for mental healthcare in a Moroccan context. There is a lack of research analyzing the acceptance mechanism from a healthcare provider's perspective. The technology acceptance model (TAM) and its extensions and the continuance intention of use model are the most common models to explain what sustains the adoption of these systems. The results allowed us to also identify 35 determinants of the adoption of these tools: the quality of the relationship quality with the healthcare service, the quality of the system, effective communication about these systems, perceived usefulness, ease of use, satisfaction, and trust were the most influential factors in the adoption of MEAS.

**Keywords**— E-appointment system, Medical E-appointment, Mental healthcare, Systematic literature review, TAM, Technology acceptance, Technology adoption.

## 1 Introduction

The use of information and communication technology (ICT) in healthcare has considerable potential for promoting access to healthcare and quality-of-service delivery. Currently, typical healthcare uses of information and communication technology (ICT) include e-appointment scheduling systems (MEAS) that enable patients to easily and securely make appointments with healthcare providers through the Internet [1]. Various digital platforms and mobile applications are now available to facilitate medical appointment-making for both healthcare providers and patients. Research studies indicate that using MEAS supports a value proposition to optimize patient-physician transactions and reduce the workload

associated with traditional medical appointment-making. Through the introduction of this new service, users may have more flexibility in choosing from the available time slots. It also helps to cut down on waiting times and appointments that get missed [2–4]. It is regarded as a key factor in improving operational excellence, effectiveness, quality of service, and patient satisfaction [5–7].

Despite the promising possibilities of MEAS, their acceptance, and use remain low, as demonstrated by studies [8]. According to the literature, there are a set of theoretical models that conceptualize users' acceptance. These models investigate how people use and accept technology by identifying which determinants help them continue to act in ways that support the use and adoption of technology [9–14]. Their common point is to consider the behavioral intention to use the technology as the main determinant of user behavior.

Studies on online medical appointment systems focus on their effectiveness, their contribution to improving healthcare services, the causes and effects of missed appointments, and user satisfaction with these systems [6,15–17]. Unfortunately, there is very few earlier research that addresses the user acceptance of medical e-appointment systems [18]. As far as we know, few studies have been conducted to explore the determinants of the use and acceptance of medical e-appointments based on technology adoption models and theories. Hence, this study aims to synthesize research that has assessed the acceptance and use of MEAS to explore the determinants of acceptance of these systems in a mental healthcare setting. We designed our study questions based on a systematic literature analysis by (AlQudah et al., 2021) on technology acceptance in healthcare. The following are the queries:

Question 1: What models and theories of technology acceptance are most frequently used in studies attempting to explain the factors influencing the acceptance of MEAS? Question 2: What are the key determinants influencing the acceptance of MEAS? Question 3: What are the main confirmed relationships between the influential determinants of the acceptance of MEAS? Question 4: What is the most prevalent participant profile in studies on the acceptance of MEAS? Question 5: Which countries have published studies on the use of MEAS? Question 6: What intended purposes do appointment systems be used for?

## **2 Article maps**

This review will discuss the popular technology adoption models and theories used to examine medical e-appointment system acceptance and use, the major determinants influencing this acceptance, and the major relationships between these determinants that are confirmed to support the successful implementation of these systems in mental healthcare settings. Additionally, we will outline the most typical participant profile in research, the main countries by frequency of publication, and the primary applications for these systems. Finally, we will suggest some orientations for future research projects.

## **3 Methods**

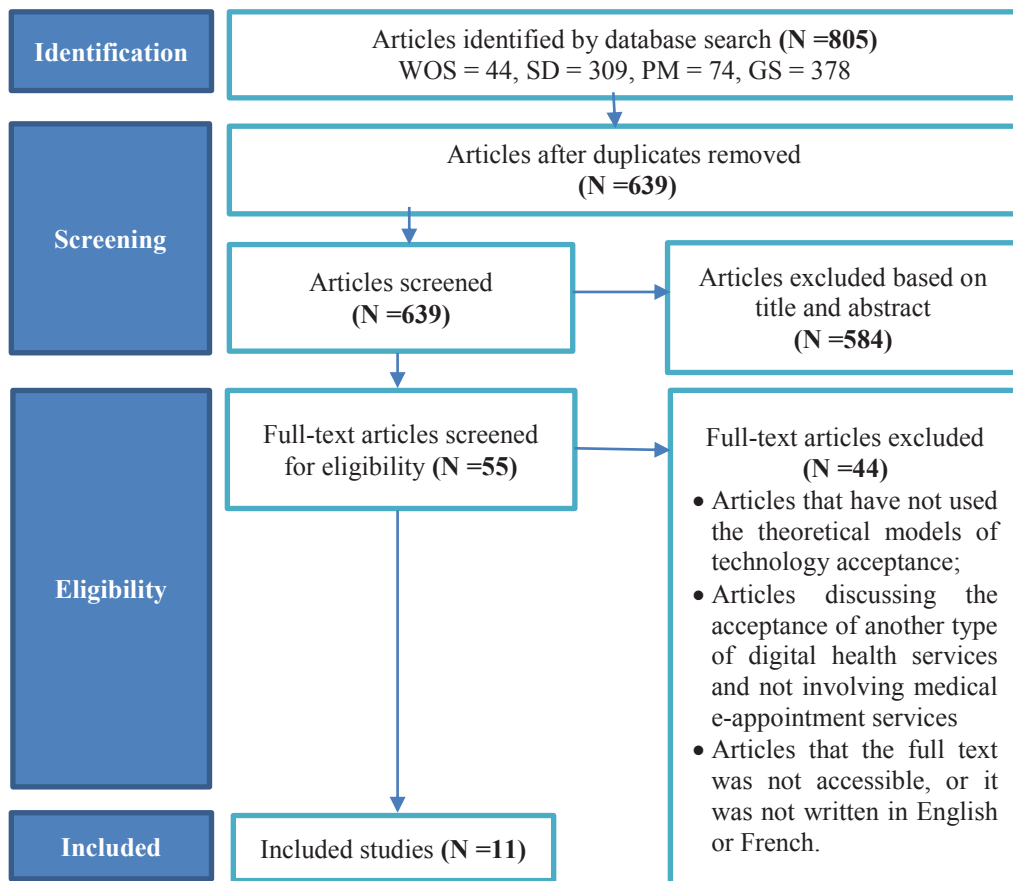
Our literature review was conducted following the PRISMA recommendations [19] to identify studies that used the theoretical models of technology adoption behavior as a framework to explain the acceptance and use behavior of MEAS. The literature review was carried out between November 2022 and April 2023. Three large databases: Web of Science, Science Direct, and PubMed were used for the reliability and relevance of their research results. Google Scholar was also used to increase the thoroughness of the research. The research query was made up of keywords that are usually inventoried from reference articles. The keywords used were as follows: (Technology Adoption OR technology

acceptance) AND (Healthcare OR Health OR Mental health OR Medical) AND (E-appointment system OR Web-based appointment system OR Mobile appointment system).

The following were included in this study: (1) papers with publication dates between 2012 and 2023; (2) studies with the purpose of exploring the determinants of acceptance and use of MEAS regarding fundamental theories of technology adoption behavior. The following were excluded from this study: (1) articles generally discussing the acceptance of another type of digital health service and not involving medical e-appointment services; (2) studies that do not use technology adoption behavior models as a framework for analyzing adoption, even if the words "acceptance" or "adoption" are appearing in the title or abstract; (3) articles in which the full text was not accessible or it was not written in English or French.

### 4 Results

The initial search using the above search criteria turned up 805 studies, as seen in Figure 1. There are 44 results from the Web of Science database search, 309 results from Science Direct, 74 results from PubMed, and 378 results from Google Scholar. After 166 duplicate articles were removed, the remaining 639 articles were evaluated based on their titles and abstracts. According to the screening results, 584 records were rejected because they weren't compliant with the inclusion criteria. Afterward, the full text of 55 studies was scanned to ensure they were relevant to the topic of acceptance and use of the MEAS. 11 studies in total was ultimately deemed qualified for analysis and inclusion in the research.

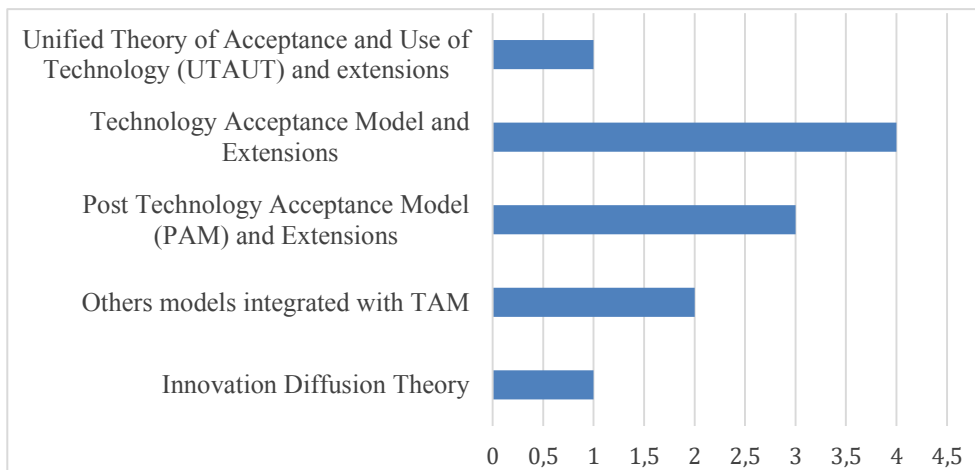


**Figure 1.** Flow diagram of studies included in the review

Table 1 in Appendix A lists the 11 articles that were included. According to the investigated acceptance model, we have categorized the studies. The six research questions are used to present the study's findings.

#### **4.1 Prevailing Technology Adoption Models and Theories used to explore MEAS acceptance and use**

The results of the study allow us to distinguish two categories of models for assessing the user's acceptance of MEAS: the Technology Acceptance Model, which aims to predict the intention of users to use technology [11], and the post-technology adoption model, which aims to measure the degree of satisfaction with technology and predict the future users' behavior to continue using this technology [20]. As illustrated in Figure 2, the Technology Acceptance Model (TAM) and its extensions are the most commonly used models to understand the acceptance of MEAS (n=4), as well as the post-technology acceptance model and its extensions with (n=3). These studies have extended the two models by incorporating service quality constructs. The integration between the technology acceptance model, trust theory, and innovation diffusion theory was discussed in (n=2) studies. The analysis also shows that the UTAUT (Unified Theory of Acceptance and Use of Technology) and its extensions were employed in the (n=1) study to explore the user's acceptance of the MEAS.



**Figure 2.** Most commonly studied technology acceptance model

#### **4.2 Key determinants influencing the acceptance of MEAS**

The study's findings enabled us to pinpoint 35 determinants of the acceptance and use of the MEAS. The identified determinants are summarized in Table 2 below. The behavioral intention of use is the determinant used by all the studies to explore the acceptance of the MEAS. Most of the studies have investigated the determinants of the TAM, perceived ease of use (n=8), and perceived usefulness (n=7) to assess the acceptance of this technology. Also, the constructs of service quality, satisfaction, user experience, relationship quality, and system quality are the most frequent factors reported by studies to assess the acceptance of the MEAS. The determinants of the other models, such as UTAUT, the Technology readiness model, and the Innovation diffusion theory, were explored at one

time to understand the acceptance of these systems. Certain determinants were particular to the study's context and were not derived from any technology acceptance theory.

**Table 2.** Key determinants of acceptance of the MEAS

<b>Determinants</b>	<b>Total Count</b>
Perceived ease of use	8
Perceived usefulness	7
User experience	5
Intention of use	6
Continuance intention of use	5
Satisfaction	5
Service quality	5
Trust	4
Relationship quality	3
System Quality	4
Communication	3
Patients characteristics	2
Website quality	2
Compliance with COVID-19 health measures	1
Self-efficacy	1
Subjective norm	1
Calculative cost/benefit	1
Computer literacy	1
Confirmation of expectations	1
Optimism	1
Innovativeness	1
Discomfort	1
Insecurity	1
Access to the internet	1
Social influence	1
Facilitating Conditions	1
Information Quality	1
Perceived mandatory usage	1
Performance expectancy	1
Effort expectancy	1
Relative advantage	1
Compatibility	1
Complexity	1
Trialability	1
User-friendliness of the system	1

Referring to the study of Almathami, the identified determinants from the reviewed articles on the acceptance and use of MEAS were therefore categorized as external and internal determinants, as seen in Table 3. Internal determinants are considered the keys to technology acceptance and use; they refer to users' beliefs, motivations, and perceptions of

the advantages and drawbacks of technology. While external determinants include both the system itself and the environment in which it is used [21], it involves organizational and technological influencers that lead to technology acceptance.

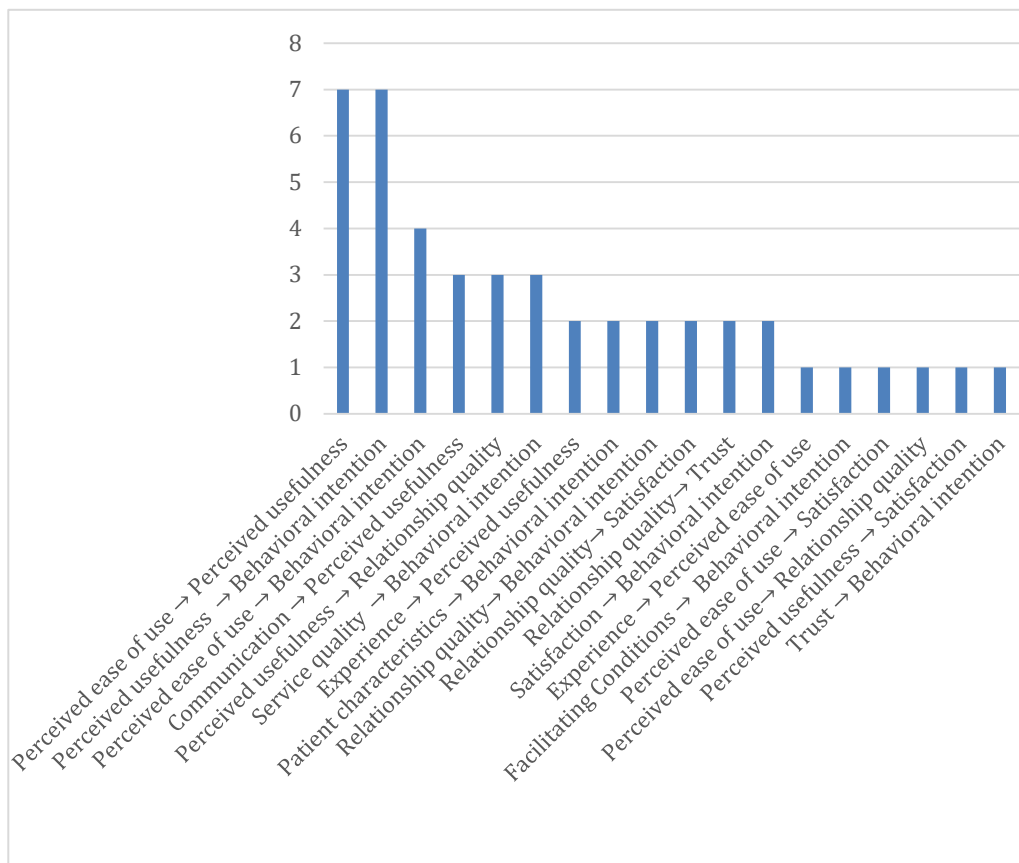
**Table 3. Internal and external determinants of acceptance and use of MEAS**

<b>Internal determinants</b>	<b>External determinants</b>
Perceived ease of use	Service quality
Perceived usefulness	Relationship quality
User experience	System Quality
Intention of use	Communication
Continuance intention of use	Website quality
Satisfaction	Access to the internet
Trust	Social influence
Patients' characteristics	Facilitating Conditions
Self-efficacy	Information Quality
Insecurity	Trialability
Computer literacy	Compatibility
Confirmation of expectations	Calculative cost/benefit
Optimism	User-friendliness of the system
Innovativeness	Perceived mandatory usage
Discomfort	Complexity
Performance expectancy	
Effort expectancy	
Relative advantage	
Subjective norm	
Compliance with COVID-19 health measures	

Table 3 presents the 35 determinants categorized as internal and external influencers on MEAS acceptance. 20 determinants were considered internal influencers, while 15 were external influencers on MEAS acceptance and use. The results indicate how important a role the internal determinants play in defining the usage behavior of these systems.

### 4.3 The main confirmed relationships between the influential determinants

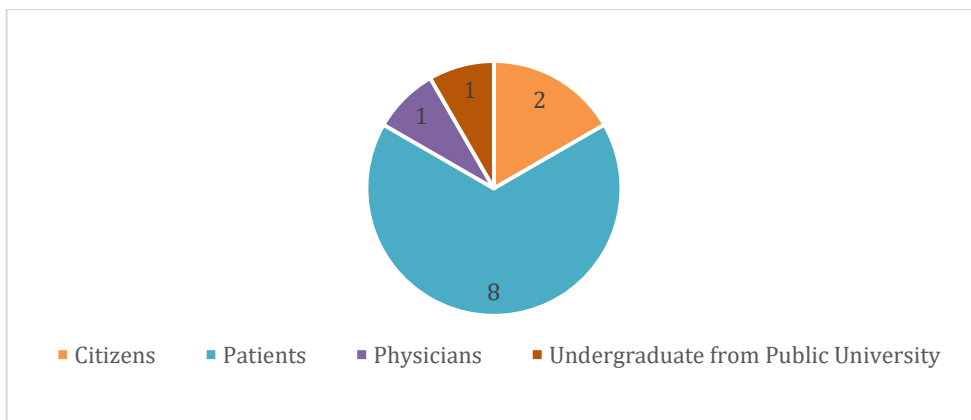
The correlation between "perceived usefulness" and "behavioral intention to use" MEAS and between "perceived ease of use" and "perceived usefulness" was the most strongly supported hypothesis by studies, as shown in Figure 3. The studies have also confirmed that the constructs of service quality and relationship quality measured through satisfaction and trust directly or indirectly influence the acceptance of the MEAS. Overall, the findings supported the major relationship proposed by technology acceptance models.



**Figure 3.** Main confirmed relationship among the determinants of acceptance of MEAS.

#### 4.4 The most prevalent participant profile in studies

Figure 4 below indicates that most studies reviewed have emphasized the acceptance of MEAS from the perspective of patients (n=8). Understanding the determinants of acceptance from the perspective of physicians (n=1) is rarely researched.



**Figure 4.** User groups profile in studies.

#### 4.5 The main countries by publication frequency

According to Table 4, most of the studies on the acceptance and use of medical e-appointment scheduling systems were conducted in countries from Asia (n=4) and pursued by Australia (n=2). Taiwan accounted for 27.27% (n =3) of all the examined research, followed by Indonesia for 9.09% (n=1). However, the remaining studies originated from Canada, Germany, Greece, and United States; one study of the entire analyzed studies was recorded in each country. No studies in Africa, especially in a Moroccan context, were explored.

**Table 4.** Countries by publication frequency

Country	Frequency	Percentage %
Australia	2	18,18
Canada	1	9,09
Germany	1	9,09
Greek	1	9,09
Indonesia	1	9,09
Taiwan	3	27,27
United States	1	9,09
Country Not specified	1	9,09

#### 4.6 Deployment of MEAS

Assessing user acceptance of MEAS for mental healthcare is lacking; no study in this regard has been carried out. Booking appointments for medical services in general dominates the deployment of these systems. One study looked at the application of MEAS in the practice of blood donation, and the other looked at nutritional issues.

### 5 Discussions

The results of this study contribute to the literature on technology acceptance in the healthcare context. The research aimed to assess the empirical research to comprehend the current state of knowledge on the acceptance and use of the MEAS to get access to healthcare services. We reviewed 11 studies using theories and models of technology acceptance and use to explain what sustains the acceptance of MEAS. The majority of the studies have discussed extensions of the initial TAM to explore user intention to use or continue using MEAS, which agrees with what [22] and [23] reported in their systematic literature review on technology acceptance in the healthcare domain. The UTAUT was used once to explore user ‘acceptance of MEAS; this finding is a suggestion for future research to study several models as performed by [24]. Also, the theories that integrate with the TAM were the diffusion of Innovation and technology readiness theories. Hence, further studies may involve other theories, such as the “theory of health beliefs”, to better understand the user acceptance of MEAS.

The main determinants that were widely discussed in the literature to explain the adoption and use of MEAS were also investigated in this study. We have identified 35 determinants that positively or negatively influence the MEAS's acceptance. These determinants were therefore categorized as internal and external determinants to indicate how important a role the internal determinants, which refer to users' beliefs, motivations,



and perceptions of the advantages and drawbacks of technology, are playing in defining the user's behavior toward the MEAS. The 11 studies that were reviewed used behavioral intention as a determinant of user acceptance of MEAS and demonstrated high predictive potential for this construct in defining user behavior of these systems, which aligns with what [25] indicated in their study on the adoption of mHealth services. As mentioned by [22] such a result confirms the necessity of behavioral purpose within the theory and practice of technology acceptance. The TAM's fundamental constructs; perceived ease of use and perceived usefulness were the key determinants of MEAS acceptance. The studies have confirmed that information quality, communication, service quality, system quality, and relationship quality influence user intention via the mediating variables perceived usefulness, and perceived ease-of-use which confirm the power of these two factors in assessing user acceptance across the healthcare domain as revealed by numerous studies [26,27]. Findings also indicate that satisfaction, trust, and user experience have a positive influence on user intention and continuance intention to use MEAS.

The MEAS is regarded as the most useful and popular electronic healthcare service [28]; therefore, it is reasonable that most of the studies have extended the initial TAM by incorporating perceived service quality and relationship quality constructs to understand predictors of user behavior toward potential acceptance or rejection of this service. Overall, the findings supported the major relationship proposed by technology acceptance models. The proposition for further research is to include more determinants related to user health perceptions or organizational influencers to develop contextualized models and thereby provide a better explanation of user acceptance of MEAS.

There is a lack of research analyzing the acceptance mechanism of MEAS from a physician's perspective; eight studies reviewed analyzed the determinants of acceptance and use of these services from the patient's perspective, so it would be interesting to focus future research on analyzing acceptance behavior from the perspective of healthcare providers. Research addressing the acceptance and use of MEAS for mental healthcare is also lacking. The determinants of use can differ from one context to another. It is, therefore, recommended to carry out more research in the mental healthcare setting to explore the practical significance of our findings.

The adoption models identified in the literature have been tested in various cultural contexts; the results reveal that Asian countries are leading the research on the acceptance and use of MEAS, which can be explained by the frequent and advanced use of technology in these countries. No research addressing the acceptance of the MEAS in African and Arab contexts and focusing on technology acceptance theories was carried out. So, it would be interesting to see how well they hold up in the African and Arab contexts and to possibly add context-specific constructs to them to encourage their successful use and ensure the long-term success of projects involving their implementation.

Our study presents some limitations. Specific databases were used only for this review's research study collection; we did not look for unpublished studies or grey literature. Our research is focused on studies that have used theoretical models of technology adoption behavior as a framework to explain MEAS's acceptance and use behavior. However, some studies have proposed a strong framework of facilitators and barriers for MEAS with no reference to the technology acceptance models. Thus, our review was limited to information from research studies that met our inclusion criteria. By extending the search to additional sources and terms, a more thorough sample might be obtained.

## **Conclusions**

The main results confirmed that no studies have been conducted to assess the acceptance and use of medical e-appointment scheduling systems for mental health care in the African

context. There is a lack of research analyzing the acceptance mechanism from a healthcare provider's perspective. The technology acceptance model (TAM) and its extensions and the continuance intention of use model are the most common models to explain what sustains the adoption of these systems. The results allowed us to identify **35** determinants that we have categorized as internal and external influencers on MEAS acceptance. The internal determinants, which refer to users' beliefs, motivations, and perceptions towards technology, are playing a considerable role in defining the user's behavior towards the MEAS. The quality of the relationship with the healthcare service, the quality of the system, effective communication about these systems, perceived usefulness, ease of use, satisfaction, and trust were the most influential factors in the adoption of these services.

The findings of this study offer contributions to the literature on technology acceptance. As far as we know, our research study is the initial one performed; no literature review assessing mainly the adoption of MEAS focusing on technology acceptance models has been conducted. The findings also suggest some keys for ensuring the effective implementation of medical e-appointment scheduling systems in mental healthcare settings.

## References

1. Zhang X, Yu P, Yan J, Spil ITAM. Using diffusion of innovation theory to understand the factors impacting patient acceptance and use of consumer e-health innovations: a case study in a primary care clinic. *BMC Health Serv Res.* 21 févr 2015;15:71.
2. Chen SC, Jong D, Lai MT. Assessing the Relationship between Technology Readiness and Continuance Intention in an E-Appointment System: Relationship Quality as a Mediator. *J Med Syst.* sept 2014;38(9):76.
3. North F, Nelson EM, Majerus RJ, Buss RJ, Thompson MC, Crum BA. Impact of Web-Based Self-Scheduling on Finalization of Well-Child Appointments in a Primary Care Setting: Retrospective Comparison Study. *JMIR Medical Informatics.* 18 mars 2021;9(3):e23450.
4. Paré G, Raymond L, Castonguay A, Grenier Ouimet A, Trudel MC. Assimilation of Medical Appointment Scheduling Systems and Their Impact on the Accessibility of Primary Care: Mixed Methods Study. *JMIR Med Inform.* 16 nov 2021;9(11):e30485.
5. Küçük A, Demirci M, Kerman G, Soner Özsoy V. Evaluating of hospital appointment systems in Turkey: Challenges and opportunities. *Health Policy and Technology.* 1 mars 2021;10(1):69-74.
6. Wang WY, Gupta D. Adaptive Appointment Systems with Patient Preferences. *M&SOM.* juill 2011;13(3):373-89.
7. Xie H, Prybutok G, Peng X, Prybutok V. Determinants of Trust in Health Information Technology: An Empirical Investigation in the Context of an Online Clinic Appointment System. *INTERNATIONAL JOURNAL OF HUMAN-COMPUTER INTERACTION.* 2020;36(12):1095-109.
8. Zhao P, Yoo I, Lavoie J, Lavoie BJ, Simoes E. Web-Based Medical Appointment Systems: A Systematic Review. *J Med Internet Res.* 26 avr 2017;19(4):e134.
9. Ajzen I. The Theory of Planned Behavior. *Organ Behav Hum Decis Process.* déc 1991;50(2):179-211.
10. Ajzen I, Fishbein M. A Bayesian analysis of attribution processes. *Psychological Bulletin.* 1975;82:261-77.
11. Davis F. Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Q.* sept 1989;13(3):319-40.
12. Rogers EM. Diffusion of Innovations [Internet]. Rochester, NY; 1983 [cité 2 janv 2023]. Disponible sur: <https://papers.ssrn.com/abstract=1496176>

13. Venkatesh, Morris, Davis, Davis. User Acceptance of Information Technology: Toward a Unified View. *MIS Quarterly*. 2003;27(3):425.
14. Venkatesh V, Thong JYL, Xu X. Consumer Acceptance and Use of Information Technology: Extending the Unified Theory of Acceptance and Use of Technology. *MIS Quarterly*. 2012;36(1):157-78.
15. DeFife JA, Conklin CZ, Smith JM, Poole J. Psychotherapy appointment no-shows: rates and reasons. *Psychotherapy (Chic)*. sept 2010;47(3):413-7.
16. Mazaheri Habibi MR, Abadi FM, Tabesh H, Vakili-Arki H, Abu-Hanna A, Eslami S. Evaluation of patient satisfaction of the status of appointment scheduling systems in outpatient clinics: Identifying patients' needs. *J Adv Pharm Technol Res*. 2018;9(2):51-5.
17. Robotham D, Satkunanathan S, Reynolds J, Stahl D, Wykes T. Using digital notifications to improve attendance in clinic: systematic review and meta-analysis. *BMJ Open*. oct 2016;6(10):e012116.
18. Chang MY, Pang C, Michael Tarn J, Liu TS, Yen DC. Exploring user acceptance of an e-hospital service: An empirical study in Taiwan. *Computer Standards & Interfaces*. févr 2015;38:35-43.
19. Moher D, Liberati A, Tetzlaff J, Altman DG. Preferred reporting items for systematic reviews and meta-analyses: the PRISMA statement. *BMJ*. 21 juill 2009;339:b2535.
20. Hadji B, Degoulet P. Information system end-user satisfaction and continuance intention: A unified modeling approach. *Journal of Biomedical Informatics*. 1 juin 2016;61:185-93.
21. Almathami HKY, Win KT, Vlahu-Gjorgievska E. Barriers and Facilitators That Influence Telemedicine-Based, Real-Time, Online Consultation at Patients' Homes: Systematic Literature Review. *J Med Internet Res*. 20 févr 2020;22(2):e16407.
22. AlQudah AA, Al-Emran M, Shaalan K. Technology Acceptance in Healthcare: A Systematic Review. *Applied Sciences*. janv 2021;11(22):10537.
23. Rahimi B, Nadri H, Afshar HL, Timpka T. A Systematic Review of the Technology Acceptance Model in Health Informatics. *Appl Clin Inform*. juill 2018;09(3):604-34.
24. Ammenwerth E. Technology Acceptance Models in Health Informatics: TAM and UTAUT. *Stud Health Technol Inform*. 30 juill 2019;263:64-71.
25. Rajak M, Shaw K. An extension of technology acceptance model for mHealth user adoption. *Technology in Society*. 1 nov 2021;67:101800.
26. Holden RJ, Karsh BT. The Technology Acceptance Model: Its past and its future in health care. *J Biomed Inform*. févr 2010;43(1):159-72.
27. Strudwick G. Predicting Nurses' Use of Healthcare Technology Using the Technology Acceptance Model: An Integrative Review. *CIN: Computers, Informatics, Nursing*. mai 2015;33(5):189.
28. Lee Y, Tsai H, Ruangkanjanases A. The Determinants for Food Safety Push Notifications on Continuance Intention in an E-Appointment System for Public Health Medical Services: The Perspectives of UTAUT and Information System Quality. *INTERNATIONAL JOURNAL OF ENVIRONMENTAL RESEARCH AND PUBLIC HEALTH*. nov 2020;17(21).
29. Saltzmann C, Boenigk S. Blood donors' usage intentions of donation appointment-scheduling systems during the COVID-19 pandemic and beyond. *Journal of Philanthropy and Marketing*. n/a(n/a):e1756.
30. Chen SC, Liu SC, Li SH, Yen DC. Understanding the Mediating Effects of Relationship Quality on Technology Acceptance: An Empirical Study of E-Appointment System. *J Med Syst*. déc 2013;37(6):9981.

31. Kitsios F, Stefanakakis S, Kamariotou M, Dermentzoglou L. E-service Evaluation: User satisfaction measurement and implications in health sector. *Computer Standards & Interfaces*. mars 2019;63:16-26.
32. Paré G, Trudel MC, Forget P. Adoption, Use, and Impact of E-Booking in Private Medical Practices: Mixed-Methods Evaluation of a Two-Year Showcase Project in Canada. *JMIR Med Inform*. 24 sept 2014;2(2):e24.
33. Xie H, Prybutok G, Peng X, Prybutok V. Determinants of Trust in Health Information Technology: An Empirical Investigation in the Context of an Online Clinic Appointment System. *International Journal of Human-Computer Interaction*. 20 juill 2020;36(12):1095-109.
34. Taufiq AR, Widyanti A, Muslim K, Wijayanto T, Trapsilawati F, Arini HM, et al. Modelling the continuance intention towards the use of mobile hospital appointment system. *IOP Conf Ser: Mater Sci Eng*. 1 janv 2020;722(1):012010.
35. Zhang X, Yu P, Yan J. Patients' adoption of the e-appointment scheduling service: A case study in primary healthcare. In: Grain H, MartinSanchez F, Schaper L, éditeurs. 2014. p. 176-81.
36. Lee YP, Tsai HY, Ruangkanjanases A. The Determinants for Food Safety Push Notifications on Continuance Intention in an E-Appointment System for Public Health Medical Services: The Perspectives of UTAUT and Information System Quality. *IJERPH*. 9 nov 2020;17(21):8287.
37. Ala, A., Simic, V., Deveci, M., & Pamucar, D. (2023). Simulation-Based Analysis of Appointment Scheduling System in Healthcare Services: A Critical Review. *Archives of Computational Methods in Engineering*, 30(3), 1961-1978.
38. Woodcock, E. W. (2022). Barriers to and facilitators of automated patient self-scheduling for health care organizations: scoping review. *Journal of Medical Internet Research*, 24(1), e28323.
39. Sharma, N., Aggarwal, A. K., Arora, P., & Bahuguna, P. (2022). Association of waiting time and satisfaction level of patients with online registration system in a tertiary level medical institute outpatient department (OPD). *Health Policy and Technology*, 11(4), 100687.

**Appendix A**

**Table A1.** list of the included articles.

Author Publication Year	Research title	Type	Participants	Country	Context of use	Theoretical background
Carolin Saltzmann Silke Boenigk 2021 [29]	Blood donors' usage intentions of donation appointment-scheduling systems during the COVID-19 pandemic and beyond	Research article	Blood donors	Germany	Blood donation practice	Technology Acceptance Model (TAM) and Extensions Service Quality Constructs
Chang et al. 2015 [18]	Exploring user acceptance of an e-hospital service: An empirical study in Taiwan	Research article	Patients	Taiwan	Not specified	Technology Acceptance Model (TAM) Service Quality Constructs
Chen et al. 2014 [2]	Assessing the Relationship between Technology Readiness and Continuance Intention in an E-Appointment System: Relationship Quality as a Mediator	Research article	Patients	Not specified	Not specified	Post Technology acceptance model Technology Readiness model Relationship quality constructs
Chen et al. 2013 [30]	Understanding the Mediating Effects of Relationship Quality on Technology Acceptance: An Empirical Study of E-Appointment System	Research article	Citizens	Taiwan	Not specified	Post-Technology Acceptance Model Relationship quality constructs
Fotis Kitsios 2019 [31]	E-service Evaluation: User satisfaction measurement and implications in health sector	Research article	Patients	Greek	Private care services	Technology Acceptance Model Electronic service quality constructs

Guy Paré et al. 2014 [32]	Adoption, use, and Impact of E-Booking in Private Medical Practices: Mixed-Methods Evaluation of a Two-Year Showcase Project in Canada	Research article	Patients Physicians	Canada	Different medical practices	Post Technology Acceptance model and extensions
Heng Xie et al. 2020 [33]	Determinants of Trust in Health Information Technology: An Empirical Investigation in the Context of an Online Clinic Appointment System	Research article	Undergraduates at a large public research university	United States	Not specified	Trust Theory Technology Acceptance model
Taufiq et al., 2020 [34]	Modelling the continuance intention towards the use of the mobile hospital appointment system	Conference paper	Patients	Indonesia	Not specified	Technology Acceptance Model (TAM) Service quality constructs
Xiaojun Zhang Jun Yan 2014 [35]	Patients' adoption of the e-appointment scheduling service: A case study in primary healthcare	Conference paper	Patients	Australia	Primary Healthcare	Technology Acceptance Model Innovation Diffusion Theory
Yu-Ping Lee et al. 2020 [36]	The Determinants for Food Safety Push Notifications on Continuance Intention in an E-Appointment System for Public Health Medical Services: The Perspectives of UTAUT and Information System Quality	Research article	Patients	Taiwan	Nutritionals problems	Unified Theory of Acceptance and Use of Technology Information system quality
Zhang et al. 2015 [1]	Using diffusion of innovation theory to understand the factors impacting patient acceptance and use of consumer e-health innovations: a case study in a primary care clinic	Research article	Patients	Australia	Primary Healthcare	Innovation Diffusion Theory