User feedback in healthcare: What are the determinants of the use of these data among healthcare professionals and managers?

Veronica Spataro[1], Elisa Peruzzo[1], Sabina De Rosis[1*], Hamish Laing[2] & Milena Vainieri[1]
[1] Management and Healthcare Laboratory, Institute of Management, Sant'Anna School of Advanced Studies, Italy
[2] Value-Based Health and Care Academy, Swansea University, Wales UK

Abstract
User feedback is crucial for improving service quality and innovation across various sectors, including healthcare. This study focuses on understanding the determinants that prevent or encourage healthcare professionals and managers to use user feedback. To explore these determinants, we adopted the Unified Theory of Acceptance and Use of Technology (UTAUT) model, which has been widely applied in various fields. This research is ongoing. Its first phase encompasses a qualitative study involving 13 semi-structured interviews with healthcare professionals and managers in Italy and Wales. The results from this phase will inform a subsequent quantitative survey involving a larger sample. Preliminary findings indicate that all the hypothesized UTAUT factors can significantly influence the utilization of healthcare user feedback. Participants confirmed the importance of performance expectancy, effort expectancy, social influence, facilitating conditions, habit, perceived security, and anxiety as the main determinants. Future results will provide a comprehensive view of these factors in diverse user feedback scenarios and digital platforms.

Keywords: user evaluation; user feedback; service management; healthcare; interviews

Introduction
Service marketing and management literature highlighted the importance of user feedback for improving service quality as well as for service innovation, in different sectors, including healthcare. Indeed, user feedback is essential for improving the quality of services, detecting service gaps, and raising service standards; it helps organizations understand the needs, preferences, and expectations of their users, so they can better handle user complaints and other issues and make the required adjustments (Parasuraman et al., 1988; 1994; Pai and Chay, 2010; Murante et al., 2014). Moreover, user opinions can be a great source of inspiration and knowledge for service innovation. Organisations can use consumer feedback to discover new service opportunities, identify emerging trends, and create cutting-edge service offers (Prahalad & Ramaswamy, 2004a; 2004b; Osborne et al., 2016; Berry, 2019). Managing user feedback can be complex and challenging for organizations (Da Silva, 2021). For instance, even though many departments and functions have systems in place to track user feedback, few organizations have an integrated, corporate-wide perspective on user experience (Da Silva, 2021). In this sense, factors such as integrity, reliability, and robustness of the project, but also time and effort, obstacles and bureaucracy need to be taken into consideration (Da Silva, 2021). Moreover, after data collection, companies still need to produce relevant user insights or knowledge about users that creates value for the organization. In this sense, data analysis is important, as is using the results for decision-making (Holmlund et al., 2020).
In healthcare, user evaluation can be collected via outcomes and experience measures (in general referred to as patient-reported measures) (De Rosis et al., 2019; 2022). However, collecting patient opinions through surveys is not enough to change the behaviour of healthcare professionals. To bring about a change, it is important to incorporate the patient experience and outcome improvement goals into the planning, feedback, and assessment procedures (Ferreira et al., 2009; Murante et al., 2014).

Barriers have been highlighted in the literature about the use of healthcare user feedback as a routine management tool (Coulter et al., 2014; Porter et al., 2016; Lungu et al., 2020). One key factor is data sharing and dissemination, also using digital infrastructure to turn data into actionable insights for decision-making (Flott et al., 2017; Gleeson et al., 2016). Indeed, user feedback increasingly is provided to healthcare professionals and managers with different types of technologies (Johanssen et al., 2019). The use of technological tools can influence the frequency with which professionals acquire user feedback. In this sense, reducing manual steps in favour of (semi)automated processes may encourage approaches that allow continuous and systematic user feedback, rather than periodic contexts (Johanssen et al., 2019; De Rosis et al., 2020). In this sense, the UTAUT (Unified Theory of Acceptance and Use of Technology) model (Venkatesh et al. 2003) can be a useful lens to investigate the topic of the use of patient feedback in healthcare organizations. This study is ongoing. More specifically, the first part of the study is reported here, in which the UTAUT model is applied to study the determinants of the use of patient feedback by managers and healthcare professionals. The same method will also be applied in the second phase, focused on the use of data by healthcare professionals via technological platforms.

Theoretical background

Since being introduced, the UTAUT model has been tested extensively in various fields for analysing users' acceptance of technology, including in healthcare. Some extensions of the UTAUT models were developed by Venkatesh et al. (2011), to integrate expectation-confirmation theory (ECT) to explain IS (Information Systems) usage, and Venkatesh et al. (2012), with the UTAUT2 model, which incorporates three new constructs such as hedonic motivation, price value, and habit into the original UTAUT.

The model and its extensions were used to study the attitude of individuals with some technologies, some specific services, or ways of using services. For instance, drawing from the UTAUT model, Kohnke et al., (2014) investigated the predictors of the intention to use Telehealth equipment by patients, clinicians, and agency personnel (Kohnke et al., 2014). Rouidi et al., (2022) used both the UTAUT and the TAM (Technology Acceptance Model) models to predict the acceptance behaviour of remote care technologies by health professionals. Wang et al. (2020) used the UTAUT and Task-Technology Fit (TTF) models to understand how consumers accept healthcare wearable devices (Wang et al., 2020). Moreover, some studies focused on the mobile payment context, introducing the concepts of technology reliability and privacy issues (Lee et al., 2019; Slade et al., 2013).

Objective

Given these premises, we draw on the UTAUT model to investigate the main determinants of the use of user evaluation data among healthcare professionals and managers, in terms of enablers or barriers to the use of these data. The more general research question is: *What are the determinants of the use of user feedback among healthcare professionals and managers?* More specifically:

- *Is performance expectancy a determinant factor for the use of healthcare user feedback?*
- *Is effort expectancy a determinant factor for the use of healthcare user feedback?*
- *Is social influence a determinant factor for the use of healthcare user feedback?*
- *Are there any facilitating conditions for the use of healthcare user feedback?*
- *Is habit a determinant factor for the use of healthcare user feedback?*
- *Is perceived security a determinant factor for the use of healthcare user feedback?*
- *Is trust a determinant factor for the use of healthcare user feedback?*
- *Is anxiety a determinant factor for the use of healthcare user feedback?*

Methodology

The study uses a qualitative methodology. 13 semi-structured interviews were conducted with healthcare professionals and managers from Italy and Wales. They explored their perspectives on the determinants of the use of the healthcare service users' feedback, starting from the UTAUT model and its extensions to adapt it to the context of the use of patient-reported measures by healthcare professionals and managers. The characteristics of the participants are reported in Table 1.

Table I: Characteristics of participants in the interviews

Variables	Categories	Values (n)	Values (%)
Country	Italy	6	46%
	Wales	7	54%
Sex	Female	9	69%
	Male	4	31%
Role	Manager with a clinical background	5	38%
	Manager, with another background (non-clinical)	6	46%
	Clinician	2	15%
Familiarity with user feedback	Yes, partially	2	15%
	Yes, totally	11	85%
Seniority: Years working in the current position	Less than 3 years	4	31%
	3-5	3	23%
	6-10	2	15%
	More than 10	4	31%
Seniority: Years working in healthcare	less than 5 years	2	15%
	10-20	2	15%
	20-30	6	46%
	More than 30	3	23%
Current use of user feedback	Yes	11	85%
	No	2	15%

The factors used in this study are the following:

1. performance expectancy, defined as the degree to which using healthcare user data will provide benefits in performing certain activities.
2. effort expectancy, defined as the ease of use of this feedback.
3. social influence, defined as the degree to which participants believe that others, e.g., colleagues, top managers, and policymakers, believe user feedback should be used.
4. facilitating conditions, in terms of organizational resources available to support the use of these measures.
5. habit, measuring if the use of patient feedback is required by the organization, as well as how likely is the use of these data in healthcare professionals' and managers' daily work.
6. perceived security, in terms of data security and privacy law.
7. trust, in terms of value and the role of data in supporting good service delivery and managerial decisions.
8. anxiety, in terms of confidence in the use of these data and/or any platforms.

The items used to define the factors were adapted from the literature and used for the interviews. The first four factors were adapted from Venkatesh et al. (2003; 2011; 2012), Cimperman et al. (2016), and Lee et al. (2019). The factor "habit" was adapted from Venkatesh et al. (2012); "trust" from Venkatesh et al. (2011); "perceived security" and "anxiety" from Cimperman et al. (2016). The interviewees were asked to answer i) general questions on the relevance of the different factors and the completeness of the hypothesized model, ii) specific questions on the items measuring each factor, and iii) any examples relating to their practice. These results are used to inform the second phase of this study, which is ongoing and encompasses a survey in multiple waves to be administered to a larger sample of healthcare professionals and managers in both Italy and Wales. The surveys aim to measure quantitatively the determinants identified in the literature and interviews using

the adapted version of the UTAUT, considering also different types of digital platforms currently used in Wales and Italy to report user feedback.

Results

The findings of this study confirm the validity of the model in the analysed context. The participants validated the importance of the proposed factors as the main determinants of the use of healthcare user feedback, as well as the model's completeness, without the need to add new factors.

- *Is performance expectancy a determinant factor for the use of healthcare user feedback?*

During the interviews, it has emerged that performance expectancy plays a pivotal role in determining the utilization of healthcare user feedback. Participants recognized that performance expectancy serves as a motivating factor, as it directly impacts their decision to engage with user feedback. Healthcare user feedback is useful "*to look back at things we have done and look at how we can change things for the future*", "*allows you to […] do the things that are effective*", "*allows you to review and improve productivity based on the experience*", "*to improve the service in line with what the service user wants*", "*to be client-centred*". Healthcare user data can be useful during the interview with patients, to identify areas where professionals need to focus, or the area where patients are most concerned, to ask more direct questions to patients, and to better understand the current medical position of the patient (so both to inform treatment and service delivery). User data can be useful also at the meso level (e.g., service level) and macro level of the organization (e.g., benchmarking).

- *Is effort expectancy a determinant factor for the use of healthcare user feedback?*

Respondents emphasised the importance of acknowledging the work required for adopting and utilising user input. They stressed the importance of aligning performance expectations with the goals and objectives of healthcare organizations, considering current constraints and challenges. This alignment not only encourages healthcare providers to actively seek and use feedback but also ensures that the feedback loop remains a valuable tool for enhancing the overall quality of healthcare services. This factor appeared strictly linked with the instrument/system used to collect and access data. Two aspects are important about this factor: the ease of use of the instrument, and the ease of use of the information provided ("*Can you use the information you get from them?*").

- *Is social influence a determinant factor for the use of healthcare user feedback?*

The interviews revealed that social influence is a key factor in the use of healthcare user feedback. Two major influences need to be taken into consideration: the organization and the peers. Also, "*there is a difference between supporting and valuing the use of them".* So, *"it is important to consider also this last aspect*".

- *Are there any facilitating conditions for the use of healthcare user feedback?*

The insights gleaned from these interviews shed light on the significance of having some facilitating conditions within healthcare organizations, and how they influence professionals' and managers' willingness to integrate user feedback into their practice ("*Without facilitating conditions nothing can be done*"). More specifically, participants prefer to distinguish between material resources (e.g., the "*infrastructures to use them*", "*practical things like computers, pen and paper stamps and/or digital solutions*"), human resources (e.g., a team of people), and knowledge, which can relate to statistical knowledge, e.g., how to interpret raw data, or how to present results. Moreover, the participants highlighted that time is considered a big barrier, and it needs to be taken into consideration together with the other types of resources ("*for example, I've got the equipment, I haven't got the time, or I've got the equipment and the time, or I haven't got the equipment and I haven't got the time*"). The results also confirmed the importance of having some support

(a specific person or group available for assistance) as well as guidance, specialized instructions and/or training.

- *Is habit a determinant factor for the use of healthcare user feedback?*

The interviews revealed that the mandated use of patient data, as well as the practice of using it in professional activities, are two critical components. On the one hand, the organization's external obligation is a factor that positively influences the application of patient feedback in work activities. On the other side, the expert must appreciate their application for this practice to become habitual. Also, "*a good IT system, automated, is crucial to the long-term success and the sustainability of continually collecting*".

- *Is perceived security a determinant factor for the use of healthcare user feedback?*

Interviews confirmed that perceived security is a determining factor when it comes to the use of patient-reported data. User feedback must be collected, reported, and shared securely, both in terms of the security of the tools/systems used and in line with privacy law. For instance, "*the paper-based collection is the least secure*".

- *Is trust a determinant factor for the use of healthcare user feedback?*

Trust in user feedback appears a key determinant. More specifically, knowing that user feedback is high-quality, well-validated information is an important consideration ("*Managerial team can make decisions knowing that the information is accurate and relevant*"). Participants also underlined that data must be able to be translated into actions and play a supporting role in the good provision of services, and managerial decisions.

- *Is anxiety a determinant factor for the use of healthcare user feedback?*

According to interviewees, not feeling comfortable using patient input can be a barrier. This concern is especially appropriate "*for those who do not use the data"* and are unfamiliar with them.

The items used to define the factors were slightly modified based on the results of the interviews. The ongoing study will provide insights into the importance of the different factors above-mentioned for both different user feedback, also according to different types of digital platforms currently used in Wales and Italy to report and monitor data.

Conclusions and implications

This study aims to provide valuable insights into the factors that facilitate or hinder the implementation and utilization of user feedback within healthcare organizations. The study is currently ongoing, with a first qualitative phase already completed, and a quantitative phase in progress. The results of the interviews confirm the importance of the hypothesized factors as the main determinants of the use of patient feedback within healthcare organizations. This insight can be useful to stimulate the use of these measures by managers and healthcare professionals. Among the future results, we expect to understand the effect of the use of standardized measures rather than measures locally developed, the fact of being part of national benchmarked programmes, the use of measures at different levels within the organization, and the possibly combining both experience and outcome measures. The study also considers the importance of the use of data return technologies, more specifically of different platforms, to put in place the right levers to facilitate the use of patient feedback. Understanding these determinants can inform strategies and interventions to promote the effective use of patient-reported measures, ultimately enhancing service quality and patient-centred care.

Ethics

Approved by the Swansea University Faculty of Humanities and Social Sciences Research Ethics Sub-Committee.

References: available upon request