Improving customer satisfaction and loyalty through mHealth service digitalization

New challenges for Italian pharmacists

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Abstract

Purpose – The main purpose of this exploratory study is to investigate the attitude of pharmacists, as small- and medium-sized enterprise (SME) owners, toward new technologies, and more precisely, toward the adoption of mobile apps for mobile health (mHealth). Such apps are generally used to improve customer satisfaction and loyalty. This study measures pharmacists' subjective experiences of mobile apps for mHealth and aims to understand how these pharmacists make sense of these apps.

Design/methodology/approach – The study adopted the narrative inquiry technique combined with critical event analysis. Participants' experiences were categorized based on how they viewed new technology tools. Interpretative inductive analysis identified precise aspects of the sense making illustrative of non-adoption or confused adoption of new technologies by pharmacists.

Findings – This study investigates to what extent new technology tools such as mobile apps affect retailers and more precisely the reasons why mobile apps are and are not adopted by retailers, as potential users, in the pharmaceutical industry. We identified four aspects of sense making that illustrated non-adoption or confused adoption of new technologies by pharmacists. These aspects are deeply discussed in the paper and are referred to the dimensions of confusion to confidence; suspicion to trust; frustration to education; mistrust to cooperation.

Research limitations/implications – The main limitation of the present study is the limited number of territories investigated. This limitation arose because of the exploratory nature of the available research, which is generally based on case studies, and the lack of clear operationalization of the research available at the time of data collection. Another limitation is that the sample included only SMEs operating in the Italian pharmacy industry.

Originality/value – Many studies have highlighted the opportunities related to new mobile apps in the business-to-business market. Several have investigated customer interest in such new technology. If some contributions have indirectly investigated the acceptance of information technology tools, to the best of our knowledge, no study has been conducted to investigate directly and precisely the level of pharmacists' acceptance, use, and willingness to adopt information technology (e.g., mobile apps) for customer service in mHealth and mainly the reasons of non-adoption.

Keywords mHealth, Digitalization, Mobile apps, Pharmacy services, Customer satisfaction, Small and medium-sized enterprises

Paper type Research paper

1. Introduction

The use of mobile technologies to support the achievement of health objectives through mobile health (mHealth) has the potential to transform healthcare service delivery across the globe (Kumar *et al.*, 2013). This is also true in the context of small- and medium-sized enterprises (SMEs) that provide health services such as pharmacies. A powerful combination of factors is driving change in the direction of new forms of relationships between companies and clients (Ernsting, 2017; Linder and Levine, 2016). Specifically, mobile technologies and mobile apps represent new opportunities to integrate mHealth into existing services to facilitate the

continued increase in the quality of services management (Lee *et al.*, 2012; Marinkovic *et al.*, 2016; Mehralian *et al.*, 2016; Kuula and Haapasalo, 2017; Lember *et al.*, 2019). This is particularly true for pharmacy services, which has matured as a clinical profession and is presently transforming from a product- and task-oriented (i.e., dispensing) profession to a patient-oriented profession (i.e. provision of care, advice and counseling) (George *et al.*, 2010; Moretta Tartaglione *et al.*, 2018). In the past, this has been reflected in special protective measures at the macro level, making the pharmacy sector one of the most highly regulated in the Italy retail industry. However, recent attempts to deregulate the sector in relation to all aspects of the services and marketing mix have created a dynamic competitive climate in the sector, and placed increasing pressure on the financial viability of SME pharmacies (Schmidt and Pioch, 2004).

In addition, while new technology tools represent new opportunities, they can also be perceived as threats to pharmacy organizations. According to the International Telecommunication Union, there are now over 5 billion wireless subscribers worldwide, and the GSM Association reports commercial wireless signals cover over 85 percent of the world's population, extending far beyond the reach of the electrical grid (WHO, 2019).

The holistic nature of the services that can be offered by wireless functions (Kowalkowski, 2011) and the impact of new technology tools on business profitability have driven a movement from selling products to selling solutions (Baines *et al.*, 2009; Bustinza *et al.*, 2015; Ruiz-Alba *et al.*, 2019, Ershadi *et al.*, 2019). This is also true for pharmacy organizations. The convergence of production and service delivery is referred to as "servitization" (Johnstone *et al.*, 2009; Baines and Lightfoot, 2013; Smith *et al.*, 2014; Talib *et al.*, 2019). From the perspective of servitization, a product is not considered on its own but is bundled with one or more services to provide a solution (Johansson *et al.*, 2003). Thus, a firm is not selling only a product or only a service, but a service and a product that together provides a solution (Brady *et al.*, 2005).

This shift of focus allows a higher level of differentiation and a unique selling proposition that increase customer loyalty, and create higher entrance barriers for competitors because service becomes essential (Grönroos, 2011). In servitization, the consumer becomes central (Grönroos and Voima 2013), and their role is played at three different levels—digitalization (Kobus *et al.*, 2018), automation, and connection with the organization—to provide solutions that are as tailored to the customer's needs as possible (Brady *et al.*, 2005; Pereira and Romero, 2007; Wreder *et al.*, 2009).

Products and services created through mass customization better meeting consumers' demands, and creating competitive value proposition (Frank *et al.*, 2019) is also true in pharmacy organizations (Horst *et al.*, 2018). Solutions-based strategies and focus on services have changed distribution models and the relationship between resellers and consumers in the healthcare industry, such that mHealth has created important opportunities for pharmacy wholesalers and pharmacy retailers. In the past decade, mHealth has become an important research topic because it has influenced and changed traditional communication between professionals and patients (Webb *et al.*, 2016).

Many studies have been conducted to measure and understand consumers' attitudes toward the purchase of medicines online (Pál *et al.*, 2015; Ashames, 2019), and to investigate how the digital services are perceived by consumers (Breen and Crawford, 2005; Wiedmann *et al.*, 2010; Athavale *et al.*, 2015; Mai and Olsen, 2015). Research has also been conducted on from the perspective of businesses to determine the level of digitalization (from a business-to-business perspective) of new distribution models that are now available to pharmacies (Chapman and Al-Khawaldeh, 2002; Siska and Tribble, 2011; Cordon *et al.*, 2016; Pawłowski and Pastuszak, 2017).

This study presents the results of a qualitative exploratory study that aims to understand to what extent pharmacies, as SMEs, have decided to or been compelled to change their distribution model in relation to the new possibilities for interacting with clients through mobile apps. Specifically, we investigate pharmacists' attitudes toward mHealth technologies to answer the following two research questions:

RQ1. What are the attitudes of pharmacists towards mHealth technologies?

RQ2. What factors determine the choice of adoption/non-adoption of mHealth technologies by pharmacists?

To answer these questions, we conducted unstructured interviews with a sample of Italian pharmacists who are managing pharmacies that are classified as SMEs.

The remainder of the paper is structured as follows. Section 2 provides the background related to the retail pharmacy sector in Italy and presents a literature review of mHealth in general. Section 3 presents the qualitative methodology employed and discusses how the sample of pharmacists was chosen. Section 4 analyzes the interviews. Section 5 discusses the study findings. Section 6 presents the study conclusions and implications, highlighting the important findings and novelties. It also presents the limitations of the research that create avenues for further research.

2. Study background

2.1 Research context

Pharmacies worldwide have moved from selling products for sicknesses to selling health solutions (Moynihan *et al.*, 2000; Moncrief and Marshall, 2005; Stantchev *et al.*, 2015). In addition, the pharmacy industry is greatly important to the European economy, accounting for 2 percent of the European Union's gross domestic product (Ruiz-Alba *et al.*, 2019).

The retailing system of Italian pharmacies cannot be fully understood without reflecting on the numerous attempts by governments to liberalize the sector, with limited success thus far. However, since August 2017, Italy has removed some restrictions for owners of retail pharmacies. For example, ownership of pharmacies was previously solely reserved to licensed pharmacists and entities owned by licensed pharmacists; however, the law introduced in August 2017 allows corporations to own a retail pharmacy. While a licensed pharmacist must oversee the management of the pharmacy, the law repeals the requirement that a pharmacist must be a shareholder of the pharmacy. This opens the market of retail pharmaceutical distribution to corporate investment, and may lead to the creation of corporate-owned retail pharmacy chains. However, thus far, no international retail chain is present in the Italian market. This means that in Italy, the great majority of community pharmacies are still small enterprises and small family businesses.

Despite this significant change to ownership laws, ownership of a retail pharmacy in Italy will continue to remain subject to the following requirements: (a) manufacturers of pharmaceutical products, scientific and health professionals will not be able to own a pharmacy, this is because the relating incompatibility provisions remain in force; (b) each pharmacy owner (including corporate entities) is allowed to, directly or indirectly, control no more than 20 percent of the pharmacies located within the same region or autonomous province.

The pharmaceutical sector in Italy is still highly regulated, and the laws relating to the retail distribution of medicines in the territory and the attribution of the relevant authorizations have remained untouched. The coming years will reveal whether investors intend to take advantage of this opportunity and/or whether SME pharmacies will be able to create networks. In any case, current context in Italian pharmacies, the central figure is the pharmacist, who can also be the entrepreneur of the pharmacy, hold a master's degree, and belong to a chartered association.

The advantages of digitalization for pharmacies are enormous. Digitalization allows the creation of participation and continuative participation between the pharmacist and their clients. In addition, digitalization contributes greatly to creating immediate access to care, and to enabling transformation toward a new healthcare system (Tambo *et al.*, 2016).

The pharmacist's role is central in this changing scenario because they are required to have expertise in medicines as a condition of their profession (Van De Pol *et al.*, 2019). However, pharmacists' activities in selling medicines also need to be integrated with new skills related to consumer education (Toklu and Hussain, 2013), the identification of problems related to different medications, and the promotion of healthcare services available to the client in the pharmacy or in the territory (Toklu and Hussain, 2013).

In many countries, the pharmacist is the first point of contact for consumers experiencing issues related to health (George *et al.*, 2010). The use of new technologies and the strong relationship with consumers enabled by mobile apps (Niznik *et al.*, 2018) allows pharmacists to shift their role from being dispensers to being consultants and an innovative point of reference for consumers (Inoue and Yamada, 2013, Shahin, 2019; Shah *et al.*, 2019). According to Van De Pol *et al.* (2019), pharmacists tend to dedicate their work to traditional tasks, such as medicine dispensing, that can be delegated to members of the staff (Niznik *et al.*, 2018). However, pharmacists' relationship building and follow up with consumers remains very limited (Roberts *et al.*, 2014; Mossialos *et al.*, 2015; Niznik *et al.*, 2018). According to Mossialos *et al.* (2015), the new role of pharmacists should include three principal activities: monitoring of the quality and safety of use of medicines; supervision of compliance of consumers with therapy; and implementation of prevention and management actions for chronic diseases (Mossialos *et al.*, 2015).

2.2 Research framework

Innovative technologies through mHealth and new mobile apps can help pharmacists to fulfill the activities of this role. Automation could release pharmacists from the simple role of dispensing and help them to perform new tasks (Spinks *et al.*, 2017). In this sense, many studies investigated the role of new technologies mainly in the perspective of the availability, efficacy, and efficiency of these new IT tools (Clauson *et al.*, 2013); some other studies have focused on the role of new technologies and their social impact (Davies *et al.*, 2015; Crilly *et al.*, 2019) or have indirectly investigated the willingness to adopt information technology by pharmacists (Spanakis *et al.*, 2019).

Baines (2015) expects that over time, pharmacies will be able to change their role through the introduction of new technology and mobile apps. However, some studies have demonstrated that the innovation enabled by mobile apps is seen by pharmacists as a threat rather than as an opportunity (Aungst, 2013; Baines, 2015). This is because pharmacists are afraid to become simple retailers and lose the professional requirements of their role.

Baines *et al.* (2009) suggest some steps that would allow pharmacies to become digital: consumer and pharmacies digital education; the connection of the pharmacy to a larger network of actors (e.g., general practitioners, physicians) operating in the national health system and allow the consumer to keep in touch with their community pharmacy through mobile apps (Baines, 2015). The use of new technologies can allow pharmacists to become strategic actors in the national health system, and to play a wider role in consumer healthcare (Baines *et al.*, 2019).

Thus, mHealth and digital technologies in general represent an opportunity and a great challenge for pharmacists. The opportunity is particularly important in relation to improving customer loyalty and becoming more integrated in the national healthcare system. However, it is not entirely clear how pharmacists can make sense of the challenges, particularly over time.

3. Methodology

The purpose of this research is to explore the adoption of mobile apps that enable mHealth by Italian pharmacy owners (Rahi and Abd. Ghani, 2019). Thus, the study was interested in pharmacists' subjective experiences and how they made sense of such apps. To capture the subjective experiences of pharmacists, we conducted semi-structured interviews to elicit

information on pharmacists' reactions to these apps and any change in their perspective over time. The method adopted was the narrative inquiry technique combined with critical event analysis (Webster and Mertova, 2007; Heikkila *et al.*, 2007; Gill *et al.*, 2010).

The use of narrative inquiry provides a means of investigating the subjective experience of the participants, thereby allowing access to insights into their "lifeworld" (Bury, 2001; Pottie *et al.*, 2008). However, what individuals convey through their narratives are not impartial accounts (Bury, 2001; Goulding, 2005) because their stories are interpretations of their experiences in a specific situation and context. The research questions focused on identifying participants' subjective, holistic experiences with the phenomenon of digital mobile apps. Bissell *et al.* (2006) argue that the use of narrative in pharmacy practice research can provide insights into the pharmacist's role, including how these key actors make sense of the service experience (in our case, digital technology mobile apps). Thus, participants were asked to recall an event when they were working with a mobile app or thought they would introduce mobile apps into their pharmacy business, and to relate their experience describing what was critical, that is either positive or negative about the experience. To generate an imaginary experience, participants were then asked to explain how that experience would have been if a magic wand (Heikkila *et al.*, 2007) were used to make the event of working with or adopting the mobile app perfect for them. Each author conducted individual unstructured interviews with pharmacists.

To select the mobile apps, we used the categorization of mHealth mobile apps proposed by Rijcken (2019). The selection criteria were:

(1) The mobile apps must be available in the territories investigated.

(2) The mobile apps are not a virtual competitor for pharmacists, but a tool conceived to support pharmacists in their work.

There are many different mobile apps developed for and used in Italian pharmacies. Most of these apps are customized for only one or several pharmacies. We focused on the following three mobile apps that fulfilled the selection criteria:

(1) PharmAround—this is a geolocalization mobile app (Cavallone *et al.*, 2017) that allows pharmacists to update their opening and closing times and allows clients to find the pharmacy.

(2) FarmApp—this is a mobile app that allows clients to order their medications and other products through the app directly to the pharmacy.

(3) FarmAdvisor—this is a mobile app that allows pharmacists to send push notifications to clients.

Relevant precautions have been taken in selecting potential respondents. Several investigators have discussed the different types of samples that can be used in qualitative research (Patton, 1990; Miller and Crabtree, 1992), and others have talked about justifying the composition of a qualitative (Trost, 1988; Luborsky and Rubinstein, 1995). Based on these contributions, our community-based study can count on a robust sampling, since the inclusion criteria were well-stated before the study started.

Each researcher recruited their pharmacist participants from separate community pharmacies in Italy, personally visiting each pharmacy and inviting the pharmacist to participate. The following strict inclusion criteria were applied:

(1) Availability of the same mobile app to all participants.

(2) Every pharmacist has a minimal knowledge of the existence of the mobile app.

(3) Pharmacist must be the owners of the pharmacy.

The recruitment resulted in 82 respondents (average age: 69.5 years; SD: 8.3). The main characteristics of the sample are summarized in Table I. Respondents were resident in the following Italian provincial regions: Calabria, Emilia-Romagna, Friuli-Venezia Giulia, Lazio, Lombardia, Puglia, Sardegna, Sicilia, Toscana, Trentino-Alto Adige, and Veneto.

The 82 pharmacists were owners of the pharmacy and were interviewed in Italy by the researchers from June 2018 to May 2019.

Each interview was recorded and transcribed and the data were sequentially analyzed after each interview. Critical and imaginary events were used as a means of eliciting rich descriptions of each participant's experience, and no a priori categories were created for the analysis. Notes about each participant and the interview process were used to assist with interpretation. The validity of the findings derived from the data was first ensured by each researcher independently undertaking their own data analysis, and second, by the researchers comparing the results of their data analyses with the aim of achieving consensus. Agreement was reached about the main themes (Charmaz, 2006), with the researchers identifying the significance of the themes by collectively determining their relative identified importance (Strauss and Corbin, 1994). Adequacy was used to ensure the reliability of the findings (Glaser and Holton, 2005).

Each transcript was highlighted, coded, and then categorized into responses reflecting the key themes emerging from the interviews (Smith, 2004; Alase, 2017; Cope, 2011). The pharmacists' experiences were categorized based on how their use and attitude toward mobile apps were.

To proceed with the process of data coding, we used the flowchart in Figure 1. Typically, a qualitative exploratory project does not begin with a theory from which hypotheses are deducted, but with a field of study or a research question, and information that is relevant to this question is allowed to emerge during the research process. As with other research projects, the research process begins by identifying the research problem and framing a research question that demarcates the phenomenon to be studied (Strauss and Corbin, 1997). The research situation varies depending on many factors, for example, literature that provides background information. A key concept for this approach is "theoretical sensitivity" (Glaser, 1978), which reflects the ability to think about data in theoretical terms and integrate complex knowledge in the research situation. Strauss and Corbin (1990) define theoretical sensitivity as the "attribute of having insight, the ability to give meaning to data, the capacity to understand, and capability to separate the pertinent from that which isn't" (p. 42). Theoretical sensitivity will be developed further during the research process through continuous interaction with the data and the emerging theory in conceptual terms.

Sample (82 respondents)	No.	Percent
Gender		
Male	52	63.41
Female	30	36.58
Age group		
30–40	23	28.05
41–50	20	24.39
51–60	18	21.95
61–70	19	23.17
>70	2	2.44

Table I.
Description of the sample
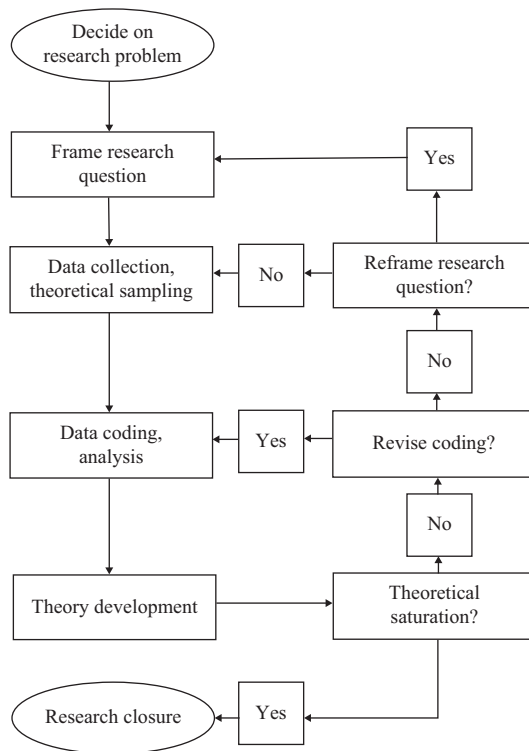
Source(s): adapted from Hutchison, A. J., Johnston, L. H., & Breckon, J. D. (2010). Using QSR-NVivo to facilitate the development of a grounded theory project: An account of a worked example. *International Journal of Social Research Methodology*, Vol. 13 No. 4, p. 298

4. Data analysis and findings

At the end of the process illustrated in Figure 1, we identified four aspects of sense making that illustrated non-adoption or confused adoption of new technologies by pharmacists in Italy:

(1) Confusion to confidence.

(2) Suspicion to trust.

(3) Frustration to education.

(4) Mistrust to cooperation.

4.1 Confusion to confidence

During the interviews, almost 70 percent of the participants complained about their own lack of ability in using the apps correctly, particularly when they first began to use them. The critical events they identified related particularly to a state of confusion arising from having recently changed to using mobile apps for customer service from using a traditional system based on paper and other traditional means of communicating (e.g., emails and telephone

calls). The pharmacists were accustomed to taking notes and information about their customers using spreadsheets or simple managerial software, contacting customers only for issues directly related to their healthcare. Some pharmacists highlighted how customers could have interpreted contact for advertising products as something unusual for a pharmacy. In the past, no pharmacy would contact customers to market promotions. Therefore, pharmacists experienced a double sense of confusion concerning how to use the app and the scope of using it (see Table II).

This sense of confusion decreased when the mobile app was validated and promoted by a pharmacy professional association. The association trained pharmacists to better use the apps, and began promoting the apps in the territory, which created a different feeling among customers. This change of attitude demonstrates the need for pharmacists to be educated. Although mobile apps can be considered easy to use and smart, they need a validation system and pharmacists need to be educated to use them appropriately and to their maximum potential. Pharmacy customers also need to be educated about the different role pharmacies now fulfill. That is, customers need to be informed that pharmacies are now involved in an extension of the national healthcare system, and are operating as a retail organization that is attempting to adopt e-commerce.

4.2 Suspicion to trust

This aspect of sense making is connected with the previous aspect. This aspect demonstrates that at the beginning of the process of adopting the mobile apps for mHealth, the pharmacists and customers were slightly suspicious about the mobile apps. Traditional attempts to summarize the role of the pharmacist have been "product focused", that is, their role was to sell the medicine and provide associated relevant information to the customer. Therefore, it can be considered that the primary role of the pharmacist was to be an expert in medicines. According to 56 percent of the interviewed pharmacists, adopting e-commerce practices and

Findings	Illustrative extract from data	In relation to previous literature
Confusion to confidence Pharmacists were needing to become accustomed to something that seemed different from the traditional way of relating to customers	P10 "I was cautious when the supplier offered the new mobile app for the first time. I searched for information on the web. I also asked my colleagues for their opinions. Honestly, I found it hard to understand how a mobile app could help me in my daily work" P21 "I was forced to keep myself up-to-date since my customers were asking for these new technological tools. I didn't intend to use them. At the end of the day, I am a health professional, not a supermarket" P24 "I am always hungry about new tech. Nevertheless, I thought a pharmacy could get no benefit from the implementation of these mobile apps. It was my own interest, and the requests of my clients, that pushed me to look in depth into these new possibilities"	Pharmacists' resistance arises due to poor understanding of the main concepts behind information technology for customer service (Spanakis *et al.*, 2019; Crilly *et al.*, 2019; clauson *et al.*, 2013)

Table II.
From confusion to confidence

Source(s): Own elaboration

all the apps that enabled consumers to buy through the internet caused a cultural sense of suspicion.

This sense of suspicion is different from the sense of confusion discussed in the previous aspect. The confusion was related to the fact that pharmacies using apps or other e-commerce tools are entirely new. However, the suspicion is linked to a natural feeling that customers experience with communications received from e-commerce organizations, that is, they often have negative feelings about having their privacy violated and their time wasted (see Table III).

Pharmacists also recognize that at the beginning of the process of adopting apps for mHealth, the new apps undermined the skills traditionally attributed to the entire category. No less than 83 percent of the pharmacists participating in the study stated this undermining of their tradition skills was a critical problem. These pharmacists perceived that customers and consumers in general could interpret this important change as signaling a decay of the traditional skills of pharmacists. Again, pharmacists and customers had to undergo an educational process to change their feelings. At the end of this process, almost 60 percent of the pharmacists had changed their mind and began not to see the mobile app as a threat. Interestingly, even if the pharmacists did not have specific figures, 74 percent of them reported feeling that at present (i.e., at the time of the interview), the sense of suspicion in customers has faded, and customers are more satisfied and loyal to the pharmacy and its products than they were before the use of the mobile app was adopted.

4.3 Frustration to education

One of the reasons mobile apps had caused frustration in our sample of pharmacists was the discomfort felt in explaining to customers how to use the tool. That is, 68 percent of the interviewees declared (using similar words) that when the mobile apps were first adopted, they felt providing consumers with education and information on these apps was a waste of time. In addition, similar to what has already been discussed, the pharmacists in our sample did not, and continue not to, consider themselves true retailers. The pharmacists reported that they do not feel they need to maintain regular contact with their clients, but prefer a "professional" role in which the client must actively seek their help, as opposed to the pharmacist actively seeking clients (Toklu and Hussain, 2013) (see Table IV).

However, the pharmacists also report that things have changed. Currently, only approximately 17 percent of the pharmacists in our sample still feel a sense of frustration in educating consumers about the apps. However, approximately 60 percent of the pharmacists consider themselves professionals who do not resemble other retailers that must consider customer loyalty as a priority. They steadily recognize that the central role of the pharmacists is as a medicine consultant and healthcare professional, but that they have a new role, which is to improve efficiency by integrating new skills derived from digitalization into their service.

4.4 Mistrust to cooperation

The pharmacists reported having changed their opinions about customer satisfaction and loyalty (Koval *et al.*, 2018). According to 67 percent of the participants, when the mobile apps were introduced, they believed that consumers would change their attitude only slightly. They believed this for the reasons discussed below. These reasons are connected to the principal and traditional role of the pharmacist as an expert in medicines. However, 77 percent of the pharmacists now report that consumers have begun to consider the apps important, which has made these consumers become aware and cooperative customers. For example, the pharmacists report that customers now understand that they can contribute to improving data and information related to opening times and possible queues. The only negative reactions to the apps in relation to customer satisfaction are the push notifications, special offer campaigns, and discounts communicated over the apps. This is a well-known issue that is widely discussed issue in the literature (Andrew *et al.*, 2016) (see Table V).

Table III.
From suspicion to trust

Findings	Illustrative extract from data	In relation to previous literature
Suspicion to trust Pharmacists thought that mobile apps might substitute them	P02 "I have never thought we were retailers. As pharmacists, we play an important role and can really help our patients by explaining to them how to use medicines. This is not a commodity, it's a drug that can have a big impact on my patients' life. I must confess, I don't want to change my mind. I strongly believe in what I do every day. At the same time, I can now say these mobile apps can help me. They aren't a threat for me anymore, and I realize they can help me and my patients" P74 "I hate the web. Very frequently people come in after buying medicines online and ask for some help. They aren't aware of the side effects of some drugs and buy medicines as sweets, just because it's easier or it's seen as a game. We need continuous education and mobile apps can help pharmacists as long as they don't substitute us" P14 "I understand that the world has changed and that we have to be on the trail. At the end of the week, we sell products. However, these are not commodities, they are medicines. If you play with them, they can injure or even kill you. Yes, I do use mobile apps, but with care. If the message these apps give is that you can buy what you want just because you have an app on your mobile phone, the quality of our entire NHS can be compromised. Over time, I became more and more comfortable with these new tools. I'm just afraid patients could think that the chemist is an app rather than a professional"	Negative beliefs and views about mobile apps were associated with the risk of substitution of pharmacists' role (Niznik *et al.*, 2018; Inoue and Yamada, 2013; Shahin, 2019; Shah *et al.*, 2019)

The participants always appeared very reluctant and suspicious only when discussing the app that communicated push notifications, special offer campaigns, and discounts. This reluctance and suspicion can be interpreted as arising from the fear the pharmacists have of their customers becoming confused and perceiving the pharmacists as shop assistants. However, the pharmacists reported that when the function and purpose of the mobile apps were explained to the customer as a tool that was being used to maintain contact with the customer and co-create with them the service provided, then the customers' acceptance of the mobile app increased.

5. Discussion
This study has specifically explored the experiences and attitudes of pharmacists, as owners of SMEs, toward the use of mobile apps. It is clear that the potential for mobile communication to transform healthcare and clinical interventions in the community is tremendous (Curtis, 2005).

Findings	Illustrative extract from data	In relation to previous literature
Frustration to education Pharmacists perceived a sense of frustration when dedicating time in their daily work to explain to customers how to use mobile apps	P11 "In the beginning, it was very hard. All these clients complaining about the wrong location of the pharmacy on their phones. I spent ages explaining that the location systems in some phones were not as precise as they are now" P22 "By nature, I'm more than happy to help others. This is why I chose this career. I never thought I would guide my patients through tools like these. Elderly people very often get lost. They order a product here, go to the other colleague [i.e. to another pharmacy] thinking that was the place where they ordered and so on. I learnt how to teach them that technology can make your life easier only if you don't think a tech product can do things for you. I know everything is fast today, but people are people. They need time. We also need education and I'm proud of being a member of my city pharmacy association. They help us stay up-to-date, and not to lose our knowledge" P40 "These mobile apps are tricky. They give the illusion everything is easy and at your fingerprints. Our patients ask us to help them with managing their drugs, their life sometimes. I Must confess I'm spending a lot of time explaining to my patients how to use mobile apps. Most of them are imprecise, some others freeze. Yes, I must confess, you need time to guide your patients. When you do a good job in setting their expectations and explaining why a mobile app can help them, well your return in terms of satisfaction and money is good. You need to be patient; take your time, give them time. If you take a mobile app for granted just because it's free or looks easy, well the risk is that the device becomes a boomerang. On the contrary, nothing can be taken for granted, nothing is as easy as it appears. It has to become part of our profession to help patients use these new tools properly, to avoid possible accidents"	Education for patients is as important as the education or pharmacists. Often advantages of new technologies are taken for granted by new technologies producer. (Toklu and Hussain, 2013; Roberts *et al.*, 2014; Mossialos *et al.*, 2015; Niznik *et al.*, 2018)

Source(s): Own elaboration

Findings	Illustrative extract from data	In relation to previous literature
Mistrust to cooperation Pharmacists who once did not trust mobile apps have begun to learn that clients can cooperate to contribute to the success of these apps	P20 "In the beginning, all these new tools made me nervous. It was hard to be online . . . always on. Over time, I started to understand that my patients can help me thanks to the apps I hated so much. They look for me; I can stay in touch with them. They know my shifts and don't call me on the phone when I'm off" P52 "Thanks to mobile apps, I always know what my colleagues are doing. I can really stay in touch with my clients and they expect me to give them information on my practice through the device. In the beginning, it's a lot of work, but after time, you realize how this work is really part of a community-based pharmacy" P58 "It's funny to see the number of people following you when you publish new offers on your mobile app. It's a different way of being a pharmacist, but it doesn't take anything away from your work. Instead, it enriches it. In the beginning, I simply thought these apps were my competitors, now I understand I can take advantage of them and get to my patients directly and more easily"	Value co-creation is an essential element that could help pharmacists improve satisfaction and loyalty precisely with the cooperation of their customers (Andrew *et al.*, 2016; Koval *et al.*, 2018; Wiedmann *et al.*, 2010)

Table V.
From mistrust to
cooperation

Source(s): Own elaboration

Several previous studies have evaluated the use of mobile telephones to support healthcare and public-health interventions, notably in the collection and collation of data for healthcare research (Katz and Aakhus, 2002; Jenkins, 2006; Boulos *et al.*, 2011). This occurs because informed, connected, empowered, and active consumers are increasingly learning that they too can extract value at the traditional point of exchange. Consumers are now subjecting the industry's value-creation process to scrutiny, analysis, and evaluation. In addition, the consumer-to-consumer communication enabled through mobile apps provides consumers an alternative source of information and perspectives. They are not entirely dependent on communication from the pharmacy. Instead, they can choose the pharmacies with whom they want to have a relationship based on their own views of how value should be created for them.

This is true for the entire healthcare system, and is particularly true for pharmacists, who are professionals running their own SMEs. In this context, technology provides opportunity to maintain contact with clients and communicate with them, and can also become their competitor when wholesalers or manufacturers decide to sell their products directly to the final user. The ambivalence in the technology is reflected by the ambivalence of the participants' responses. That is, the pharmacists reported being aware of the importance of being up-to-date, but also felt a certain discomfort in managing these tools because they can be considered a waste their time, or to compel them to engage in a new way of communicating with their clients.

The most interesting result was that no participant was unaware of the three mobile apps included in the study, but only PharmAround was used by most of them. It seems that as long as the mobile app is seen as a means of communicating a non-direct commercial message (e.g., the pharmacy's opening and closing times), it is accepted and used. However, when the app is used to send a direct commercial message or is perceived as substituting the traditional means of contact with the client, then the mobile app is perceived as a threat and is consciously avoided by the pharmacists.

Despite the ambivalence of the pharmacists to these mobile apps, all participants demonstrated a flexible attitude toward the apps, and most of them were curious about new features available on the mobile apps. In the transcripts of the interviews, the word "education" appeared very frequently, both in relation to education of the pharmacists and education of the consumers. This need for education should not be underestimated. As stated, most of the participants are small business owners, with poor retail and business-management education. The pharmacists demonstrated an awareness and desire to learn. They reported wanting to help consumers and establish with them a stronger relationship that goes beyond product supply, which is an important antecedent of loyalty.

6. Conclusions, managerial and social implications

The analysis of the data gathered in this study encourages research to go more in depth to explore to what extent new technology tools, such as mobile apps, affect retailers and consumers. The multichannel communication and supply approach required by professionals was acknowledged, and the need for education as a priority was clear. In addition, retailers in the pharmacy industry realize that a multichannel strategy of communication is also important and on the verge of becoming crucial for ensuring customer satisfaction and loyalty.

Unlike other health professionals that tend to avoid whatever moves them out of their "comfort zone" (i.e., the traditional doctor–patient top-down relationship) (Gately *et al.*, 2007), pharmacists perceive pressure to stay close to their clients as part of the logic of ensuring customer satisfaction and loyalty. This is an interesting attitude in an industry where deregulation has been implemented by government several times, but has never occurred in practice.

6.1 Managerial implications

Our propositions have direct managerial implications. First, our research suggests that the existence of mobile apps potentially useful for customers and pharmacists is not enough to let these tools accepted by the users. Instead, a big work should be done to inform the pharmacists associations on the characteristics and benefit for pharmacies owners. They may or may not be very desirable for a pharmacist, depending on the nature of its supply and demand-side factors. Second, the research clearly delineates the factors that can be expected to foster or discourage the mobile apps adoption. If in general confusion, suspicion, frustration and mistrust were the first feelings of the respondents, an accurate investigation and explanation of the benefits related to the adoption of mobile apps overcame these attitudes with a relevant sense of confidence, trust, education and cooperation. These factors are largely controllable by managers of these mobile apps and therefore can be altered by them to improve the market orientation of their products. Overall, our research gives managers a comprehensive view of what sort of attitude in pharmacists towards mobile apps can cause, ways to attain their acceptance, and its likely consequences.

6.2 Social implications

Our study suggests that though new technologies are likely to be related to business performance in general, under certain conditions their acceptance may be critical and it requires the commitment of resources. The orientation is positive only if the benefits it affords

exceed the cost of those resources. Hence, under conditions of limited competition and stable market preferences, the willingness to adopt new technological tools may not be related strongly to business performance. Managers of businesses operating under these conditions should pay close attention to the cost-benefit ratio. Our findings suggest that managers must not only themselves be convinced of the value of their products, but also have to prevent negative reactions through relevant opinion leaders, that, in the case of pharmacists, are represented by the professional associations.

From a social point of view, managers should seriously consider the possibility of conflict and frustration both in pharmacists and customers. Some inexpensive ways to manage these two risks include (1) a more dedicated training to pharmacists, (2) the possibility for pharmacists to promote themselves the mobile apps, and (3) newsletters. More advanced efforts include (1) training programs for customers, and (2) managers spending a day in pharmacies along with pharmacist and their customers. Such efforts appear to foster an understanding of mobile apps, and, probably, a positive word-of-mouth among pharmacists and among customers.

7. Limitations and future research opportunities

The principal limitation of this study is the limited number of territories investigated. This limitation arose because of the exploratory nature of available research, which is generally based on case studies, and the lack of clear operationalization in the research available at the time of data collection. This area of research is recent, and there is no consensual measurement or evaluation of the concept. Thus, suggestions for future research include developing more comprehensive instruments to measure servitization. Such instruments should incorporate some of the aforementioned elements. Future research should also examine the consumer perspective. Another limitation of this study is that it included only SMEs operating in the pharmacy sector in specific Italian territories. International research should be conducted in this area to see if there is consensus with recent findings suggesting that in certain conditions, pharmacists are adapting their role to include new technological challenges. Although it is clear that this work has some limitations, being an exploratory study, it has clearly defined the important role that mHealth technology potentially has and how it can deeply transform stable and historical business models, such as the retail distribution of medications.

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Appendix
The interviews protocol
Services have changed distribution models and the relationship between resellers and consumers in the healthcare industry and has created important opportunities for pharmacy retailers. With this interview we intend to explore your personal experience with some mobile apps available in this territory: precisely, we kindly ask if you wish to share how you perceive the potential or actual use of the following mobile apps:

(1) PharmAround—this is a geolocalization mobile, that allows pharmacists to update their opening and closing times and allows clients to find the pharmacy.

(2) FarmApp—this is a mobile app that allows clients to order their medications and other products through the app directly to the pharmacy.

(3) FarmAdvisor—this is a mobile app that allows pharmacists to send push notifications to clients.

I kindly ask to have the possibility to record this interview, in order to better elaborate the study. Do you agree?

Open Ended Question 1
How important is for you the digitalization of the services provided by the pharmacy?

Open Ended Question 2
How interested are you in making your pharmacy more digital?

Open Ended Question 3
Please tell us what you think and how was your experience in using Pharmaraound.

Open Ended Question 4
Have you been invited by your costumer to use this mobile app? If so, how was your reaction?

Open Ended Question 5
Please tell us what you think and how was your experience in using FarmApp.

Open Ended Question 6
Have you been invited by your costumer to use this mobile app? If so, how was your reaction?

Open Ended Question 7
Please tell us what you think and how was your experience in using FarmAdvisor.

Open Ended Question 8
Have you been invited by your costumer to use this mobile app? If so, how was your reaction?

Open Ended Question 9
Overall, how do you perceive the adoption of these mobile apps?

Question 10
What gender do you identify as?

    (1)   Male

    (2)   Female

    (3)   Other

Question 11
What is your age? . . . .

Question 12
Where is your pharmacy located? . . . .
    Date . . . .
    Time . . . .
    Interviewer . . . .

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