

Mobile Health Community Loyalty Development Process in China: An Empirical Study from Information Seeking Perspective

Abstract:

Purpose: This study aims to investigate the process of developing loyalty in the Chinese mobile health community from the information seeking perspective.

Design/methodology/approach: A covariance-based structural equation model was developed to explore the mobile health community loyalty development process from information seeking perspective and tested with LISREL 9.30 for the 191 mobile health platform user samples.

Findings: The empirical results demonstrate that the information seeking perspective offers an interesting explanation for the mobile health community loyalty development process. All hypotheses in the proposed research model are supported except the relationship between privacy and trust. The two types of mobile health community loyalty—attitudinal loyalty and behavioral loyalty are explained with 58% and 44% variance.

Originality/value: This paper has brought out the information seeking perspective in the loyalty formation process in mobile health community and identified several important constructs for this perspective for the loyalty formation process including information quality, communication with doctors and communication with patients.

Keywords: mobile health community loyalty; information seeking perspective; information need; brand loyalty; trust; satisfaction; information quality; privacy

1. Introduction

Mobile technology has transformed the health service business model from being hospital-centered to being patient-centered or consumer-centered. As a subset of e-health, mobile health uses mobile devices to deliver health care services to customers (Akter et al. 2010). The mobile health community refers to the mobile-based platform that integrates patients, doctors, pharmaceutical companies, insurance companies and

health institutions including hospitals and health agents into one virtual space for mobile health information access and communication (Martínez-Pérez et al. 2013; 2017). This concept has emerged as a new health care community platform because members can receive health related knowledge from professional health practitioners and discussion about treatments and diseases through community interactions. At the same time, the health information content is generated from patients and doctors during this process. The e-health community platforms play an even more crucial role during and after the Covid-19 pandemic. It is reported that the e-health community could not only help to manage and control the Covid-19 outbreak (Al-Ruzziéh et al. 2020; Wang et al. 2021) but also serves as the solutions for many chronic illnesses (Ajčević et al. 2021; Wind et al. 2020). From a marketing perspective, the mobile health community has provided a new business model attracting attention from investors, health organizations, and marketing people.

This concept differs from the previous wave of online health communities, whose common goal was to provide peer support on a specific disease or subject (Centola and van de Rijt 2015). Mobile health community members have more frequent communication patterns that can even reshape the lifestyle of customers. To sustain the mobile health community, members' participation is essential for mobile health community. Previous literature related to online health communities has suggested that mobile health community loyalty is an essential factor for attracting and managing members. Traditional marketing research regards loyalty as a crucial factor in consumer repurchase behavior (Brown 1953; Jacoby and Chestnut 1978; Jacoby and Kyner 1973; Lipstein 1959). Accordingly, loyalty in online communities has been reported to be an important concept in retaining members and in motivating members' commitment toward brands (Jang et al. 2008; Kim et al. 2008b; Limpasirisuwan and Donkwa 2017b). Although there are many studies relating to the formation of customers' loyalty from different angles (Anderson and Srinivasan 2003; Gremler 1995; Li et al. 2015), there are no studies investigating loyalty in the mobile health community. It is worth highlighting mobile health community loyalty as a construct in the new context to examine its antecedents. At the same time, the contents generated from the mobile

health community has formed a knowledge library through which members could satisfy their information needs on health and disease knowledge through the information seeking behavior. Information needs refers to users' behavior when seeking information on their chosen topic to satisfy their desire for uncertainty about the topic (Cole 2011). In the online health community and mobile health community, users are motivated by their needs to seek information on their chosen health related topics (Pian et al. 2020). Previous literature relating to online health communities and mobile health communities has not paid enough attention to this perspective.

This study proposes that loyalty in the mobile health community is formed through the information seeking perspective to satisfy their information need. Specifically, mobile health community loyalty has been proposed as a new construct and data was collected in mobile health communities in China. The information seeking perspective was proposed as the essential theoretical angle to influence the mobile health community members' loyalty formation process. The model based on information seeking perspective was tested against the Structural Equation Modelling (SEM) with Lisrel 9.30. The results demonstrated that the proposed information seeking perspective plays an essential role in forming the mobile health community loyalty. Several key factors are identified as influencing mobile health community loyalty. The paper is organized as follows. Section 2 discusses the literature review of the paper, section 3 proposes the research framework and the hypotheses for the paper, section 4 discusses the research methodology of the paper, section 5 presents the data analysis and results of the paper, finally section 6 concludes the paper with discussion, implications, and limitations.

2. Literature Review

This section will review the mobile health platform as the information service provider as well as the characteristics of the mobile health platforms in China. Loyalty is reviewed as a classical marketing concept followed by the review of the online community loyalty. Finally, the information seeking perspective is reviewed from the information needs and information quality angle.

2.1 Mobile Health Communities in China

Mobile health platforms have emerged with increasingly empowered mobile handsets including PDAs, smart phones, and tablets such as iPads. With the possibility of delivering and collecting personalized information through mobile handsets anytime and anywhere, mobile health platforms were initially built to promote communications between doctors and patients, for example, monitoring mental health (Gaggioli et al. 2013). It was soon discovered that facilitating direct communication between physicians and patients relies heavily on the openness of the patient electronic medical records and that progress in this area is slow in both Europe and US due to privacy issues (Silva et al. 2015). However, for areas that require no urgent treatments such as chronic diseases and life style behavioral change, mobile health platforms can contribute greatly into this area (Kahn et al. 2010). Diseases such as heart disease, diabetes, lung diseases, anemia are most often reported to appear in mobile APPs. It has been reported that mobile health APPs are developed more out of commercial interest and motivations (Martínez-Pérez et al. 2013). As mobile health app development has become more commonplace and the processing power of mobile phones increases, mobile health apps are classified as either doctor-centered or user-centered depending on its business model (Varshney 2014). The doctor-centered mobile health platform aims at providing a virtual platform for doctors to diagnose and make decisions about patient disease and provide a virtual consultation function. User centered mobile health platforms focused on the user experience of the mobile app development and are mainly for the prevention of a specific type of disease, for example HIV patients (Schnall et al. 2016), health education tools (Liu et al. 2011). The design of such APPs plays an important role, and user generated content is an important part of the APPs. The doctor-centered mobile health platform is more popular in western society because it is easier for electronic health records connected with the mobile APPs, whereas a patient-centered mobile health community is more popular and developed in China for several reasons. Due to the fact that the adoption of electronic health records is very limited in China compared to in USA and Europe, it is not possible to integrate electronic health records with the mobile APPs (Shu et al. 2014; Yang and Kovarik 2021). Therefore, the

doctor-centered mobile health APP is very limited. However, this gives mobile health providers in China an opportunity to create a new type of health service provision, the mobile health community, where patients, doctors, medical institutions, and medical service providers are all connected in one independent platform which has gradually become an effective supplement to traditional medical services. The most well-known mobile health platform includes Dr. Chunyu and Dingxiang Garden, etc. By establishing a disease database and integrating doctor resources, Dr. Chunyu provides users with a mobile self-diagnosis system and a platform for virtual communication between doctors and patients (Shan et al. 2019). Dingxiang Garden is based on the exchange community of doctors, which is convenient for doctors to discuss cases, answer questions, communicate academic knowledge and share experience (China). Thirdly, the user-centered mobile health platform is very popular by targeting at a specific group of people.

Previous studies of mobile health communities (summarized in Table 1) either focus on the intention and adoption of the m-health technologies (Alam et al. 2020; Balapour et al. 2019; Guo et al. 2016; Hossain 2016) or the antecedents of mobile health participation behavior from factors such as emotions or affective constructs (Zhang et al. 2021). Much work has been done on how to attract the patients or members to use the m-technology or the effects of using m-health platform (Ghose et al. 2022). The rationale for this school of study still extends the traditional technology acceptance theory into the mobile health community. The philosophy still treats the mobile health community as a technology to accept and the community side of the technology is not fully explored. For example, the key factors affecting elderly patients' usage of mobile health community was investigated with the UTAUT model (Hoque and Sorwar 2017). It is also found out that the perceived value and user satisfactions are two important antecedents toward attitudes of using the mobile health community with the IS success model (Hossain 2016). However, what are the perceived value the mobile health community could offer to users could be elaborated. The mobile health community can be treated more as a community where the user interactions are more important, and the generated information plays an important role in shaping user behavior, which could

be treated as the perceived value /perceived usefulness in the technology acceptance model. It is expected that the perceived value from the content perspective could be elaborated from the information seeking perspective as many other scholars have pointed out (Anker et al. 2011; Brashers et al. 2002; Bruce 1998; Lambert and Loiselle 2007; Santosa et al. 2005; Zhao and Zhang 2017).

Table 1. Previous empirical studies of mobile health

Authors	Target	Region/Country	Context	Object	Main Findings
(Ghose et al. 2022)	Diabetes patients	Asia	Mobile health platforms	To examine the health and economic impacts of mobile health platforms on the outcomes of chronic disease patients.	The mobile has a stronger effect than PCs in helping patients make these behavioral modifications.
(Sun et al. 2022)	The elderly	China	Mobile health services	To explore the antecedents of cognitive appraisals by focusing on message design strategies of fear appeal and coping appeal.	The relationship between fear appeal and fear arousal is inverted U-shaped such that the degree of fear arousal is the greatest when the fear appeal is at a moderate level.
(Zhang et al. 2021)	Patients with chronic illnesses	China	Mobile health-monitoring services (MMSs)	To examine how these patients develop emotional attachment to MMSs that subsequently drives their usage.	Emotional attachment can induce their active usage of such services.
(Aboelmaged et al. 2021)	Undergraduate and postgraduate students	Egypt	Mobile health apps	To examine the effect of technology readiness on the perceived value of mHealth applications and how these perceptions contribute to subjective well-being.	Utilitarian value is more important for male users, whereas hedonic value has a more salient effect for female users.
(Meng et al. 2021)	The elderly	China	Mobile health services	To investigate the role of affective trust and cognitive trust on elderly users' continuance intention.	Both affective and cognitive trust enhance elderly users' continuance intention regarding their use of mHealth services.
(Alam et al. 2020)	Patients	Bangladesh	Mobile health services	To examine the factors affecting the adoption of mHealth services in Bangladesh.	Performance expectancy, social influence, facilitating conditions and perceived reliability positively influence the behavioral intention to adopt mHealth services.
(Li and Chang 2020)	Patients with Parkinson's disease	USA	Mobile health apps	To identify key factors affecting the usage of mHealth apps.	Previous professional diagnosis and high user performance scores encourage user participation and engagement, while disease progression hinders app usage.
(Vervier <i>et al.</i> , 2019)	Online participants	German	Mobile health apps	To understand people's needs, preferences and attitudes towards mHealth apps.	eHealth literacy and intention to share data are the strongest influence on a positive attitude.
(Balapour <i>et al.</i> , 2019)	Adults	Israel	Mobile health apps	To predict the intentions of patients for adopting apps supported by clinics.	Perceived mobile technology identity perceived related IT experience, and perceived self-efficacy positively influences perceived intentions to adopt mHealth apps.
(Hoque and Sorwar, 2017)	The elderly	Bangladesh	Mobile health services	To determine the key factors influencing elderly users' intention to adopt and use the mHealth services.	Performance expectancy, effort expectancy, social influence, technology anxiety, and resistance to change had a significant impact on the users' behavioral intention to adopt mHealth services.

(Guo <i>et al.</i> , 2016)	Customers of a mobile health services company	China	Mobile health services	To provide an understanding of mHealth acceptance behavior from a privacy–personalization paradox perspective.	Perceived personalization and privacy concerns are positively and negatively associated with behavior intention.
(Hossain, 2016)	Respondents at universities, etc.	Bangladesh	Mobile health services	To develop an m-Health success model from users' perspective.	Continuance intention of mHealth services is dependent on perceived value and user satisfaction.

In summary, the mobile health platform in China has a stronger community feature where communication contents and interactions among users are essential to sustain the operation of the mobile health community and this has created unique business models for discussion. The mobile health community in China can provide benefits for all five participants including patients, doctors, hospitals, insurance companies and pharmaceutical companies. Patients need to pay certain charges for using the services and buying devices such as blood pressure monitors. Doctors can receive financial compensation by providing medical information and diagnosis to patients. The pharmaceutical companies can have a more targeted customer base in the mobile health community. Compared to the traditional approach for health care, the mobile health community guides users' demand for health services to change from passively driven to community-based and unified active demand. The mobile health platform can encourage users to adopt a healthy lifestyle, provide people with a convenient, efficient, and convenient personal health care service, and promote health care services as an indispensable part of people's daily life, thus greatly reducing the utilization and cost of medical resources. This new type of mobile health community has not been paid enough attention in the past literature.

2.2 The Brand Loyalty and Online Community Loyalty Development Process

2.2.1 Brand Loyalty and Online Community Loyalty

The concept of brand loyalty can be traced back to 1920s , original research on brand loyalty concentrated on behavioral aspects (Srinivasan et al. 2002). Brand loyalty has been defined as consumers' repetitive purchase of a brand or a series of branded services or products despite environmental and marketing strategies all have the potential to affect consumers' purchase behavior (Oliver et al. 1999). Baldinger and Rubinson (1996) proposed that it's more rational to understand and measure brand loyalty by adding the attitudinal factors. Along the same line of research, when traditional industries shifted online, E-loyalty has been studied as an important concept to influence consumers' purchase of products or services through e-commerce websites (Anderson and Srinivasan 2003; Li et al. 2015; Rodríguez et al. 2020). Gremler (1995) divides customer loyalty into behavioral loyalty, emotional loyalty, and intention loyalty . In the last three decades, traditional brand loyalty has been increasingly defined and measured from the dual perspectives of attitude and behavior (Cachero-Martínez and Vázquez-Casielles 2021). For instance, Liu *et al.* (2016) identify attitude loyalty and

behavior loyalty and suggest both are dimensions of customer loyalty in e-commerce logistics enterprises.

Loyalty in online communities is defined as an online community members' preference of one online community over other communities. Loyalty in online communities has recently emerged as an interesting and important research topic mainly because online communities, especially online brand communities have been playing a key role in modern organizations in terms of branding (Jang et al. 2008), customer relationship support (Handayani 2016), new product development (Xie and Jia 2016), etc. Due to the plurality of various online communities, members tend to shift around different communities until they settle in one community and establish loyalty by committing themselves to that community over other communities. Loyalty in online communities is reported to have a significant effect in facilitating member engagement and interactions, which is a key element in sustaining the viability of online communities (Cheng et al. 2020; Kuo and Feng 2013) and brand loyalty development (Chen and Ku 2013; Zheng et al. 2015). Online communities provide a content-enhanced service which is delivered and supported by mutual interactions between customers and the community, which means that user engagement plays a critical role in the development of brand loyalty in the context of online communities. Analogously, several recent studies have also emphasized the formation of brand loyalty from community characteristics and community commitment (Khamitov et al. 2019).

2.2.2 Loyalty Formation Process

Studies on loyalty formation process in online communities is limited with a few papers discussing the loyalty from the online health community context (Lee and Hyun 2018; Wu et al. 2017) despite there are many papers discussing the brand loyalty in the online brand community (Choi 2013; Handayani 2016; Limpasirisuwan and Donkwa 2017a). Brand loyalty is different from the online community loyalty in that it refers to consumers' attachment toward a specific brand. This is not necessarily related with online communities while online community loyalty refers to members' attachment toward the online community itself. This paper mainly focusses on online community loyalty which are neglected by previous loyalty studies. Only a few study have investigated online community loyalty as a construct, for example, Lee and Hyun (2018 found that user interactions or social and emotional factors can significantly help online travel community users to form loyalty toward online health communities. There are

still many unanswered questions about online community loyalty, especially on how mobile health community loyalty is formed from the theoretical perspective.

On reviewing the loyalty formation process in the past literature, it has been found that the loyalty formation process is closely linked with several key constructs, including satisfaction (Anderson and Srinivasan 2003; Casaló et al. 2008; Floh and Treiblmaier 2006), trust (Gwee and Chang 2013), and privacy (Li et al. 2015). Loyalty has been investigated either as a single construct or as two constructs of behavioral loyalty and attitudinal loyalty (Li et al. 2015). In either case, loyalty was reported to be influenced heavily by satisfaction and trust, which will mediate other factors such as privacy, perceived values, and social factors toward loyalty in many contexts, for instances, e-commerce (Kim et al. 2009; Li et al. 2015; Safa and Ismail 2013). Depending on the research context, the other variables that might influence the loyalty through trust and satisfaction can be perceived values, privacy, and social norms (Kim et al. 2009; Li et al. 2015).

2.3 Information Seeking Perspective

Information seeking behavior refers to people's behavior to search for information either offline or online on certain topics to fulfil their information needs. It is originally brought out by Taylor (1962) to describe the information seeking activities for library users with four level model of information needs. According to information seeking behavior, users desire to get the information about the topics they are interested in but are unconscious of what type of information they expect to get. For this reason, they search for information on his or her chosen topics, go through 4 steps of information seeking activities and eventually formulate his or her own knowledge about the topic (Cole 2011). It has been reported that health information needs are very common for people with various illness including spinal cord injury (Burkell et al. 2006; Matter et al. 2009), pregnancy (Grimes et al. 2014), cancer (Maddock et al. 2011), etc. In the context of the electronic environment, the information seeking behavior is even more structural and salient with health information needs (Maddock et al. 2011). From the information need and information seeking perspective, users are seeking useful information to fulfil their health information needs from the online health community (Pian et al. 2020). The products or services provided by the mobile health platform are mainly information. The behavior in the online health community can be treated as the information seeking process to fulfil their health information needs (Wilson 1999).

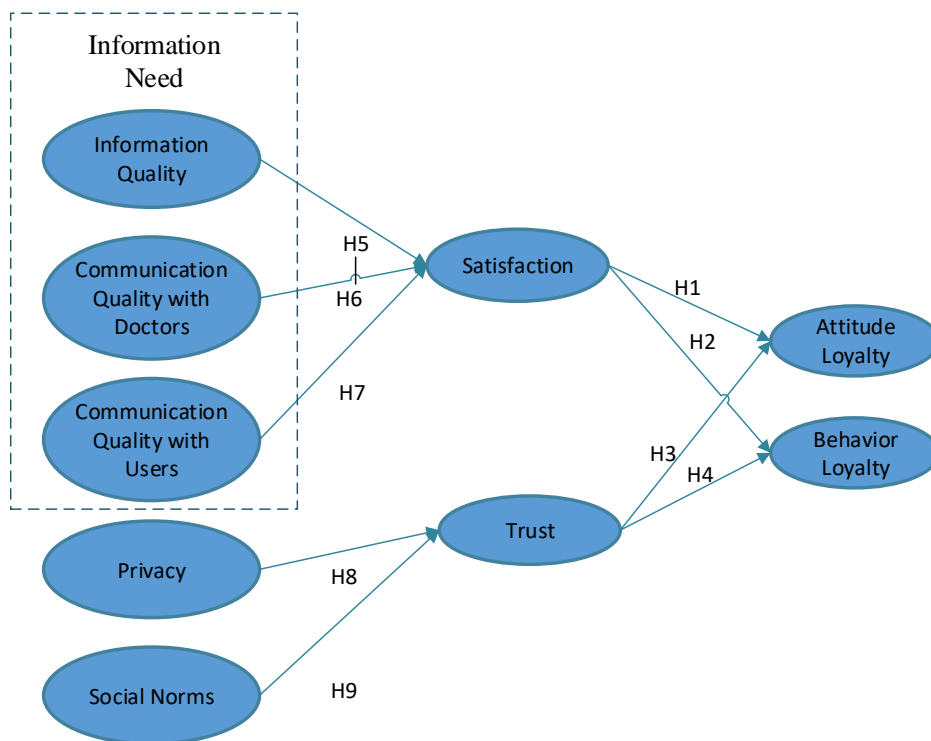
It has long been reported that meeting information needs through the information

seeking behavior will increase patient satisfaction (Brashers et al. 2002; Bruce 1998). For example, the more information patients received during their treatment, the higher level of satisfaction is achieved for patients' hospital stay (Oterhals et al. 2006). Related studies have found that online health platform has provided information services for patients to satisfy their information needs (Nicholas et al. 2016). Despite there are many discussions on how meeting information needs will satisfy patients, the information needs are not directly measured because it changes dynamically according to different contexts (Afzal 2017). Rather, other constructs and concepts are used under the information seeking context, and information quality is often quantified to support the importance of information seeking perspective (Koivumäki et al. 2008; Salaün and Flores 2001; Santosa et al. 2005). For example, to explain doctor's information seeking behavior for information needs, it is found that information quality is the main drive for doctor's communication patterns (Hughes et al. 2010). Here in this study, we adopted the information quality under the information seeking perspective as an important construct to influence user satisfaction (Laumer et al. 2017).

3. Theoretical Model and Research hypotheses

In this section, we develop an integrated research model to investigate the mobile health community loyalty development process from the information seeking perspective as in Figure 1. As discussed in the literature review section, the information seeking perspective provides the context for the loyalty formation process for the mobile health community (Anker et al. 2011; Brashers et al. 2002; Bruce 1998; Lambert and Loiselle 2007; Santosa et al. 2005; Zhao and Zhang 2017). The mobile health community focus more on the interaction and communication contents among users, i.e., patients and doctors (Anker et al. 2011). It is more appropriate for users to elaborate on the loyalty formation process from health-related contents' perspective. The information seeking offers a suitable context and angle where the communication contents and communication quality of the mobile health community could be explored (Zhao and Zhang 2017). The information quality constructs play an important role for the patient interaction and information seeking behavior, we thus focus on the information quality constructs from three points, i.e., information quality, communication quality with doctors, and communication quality with patients. We have adapted the e-loyalty development model from the previous literature where the loyalty is formed through satisfaction and trust, which are influenced by service quality and perceived values of the product of the service of the website (Kim et al. 2009; Li et al. 2015). Drawing on

marketing and retailing literature on brand loyalty, this study divides brand loyalty into behavior and attitude brand loyalty during the process of understanding of the dynamics underlying brand loyalty. Behavior loyalty refers to the actual occurrence of the user's persistent use of the health platform. As users who are loyal to the health platform will repeatedly use the service provided by the platform and will not switch to other platforms. Attitude loyalty refers to the user's attitude to the health platform, including service recommendations, word of mouth, the long-term use of willingness and so on (Liu et al. 2016). Users who are loyal to the health platform are willing to recommend the platform to others leave positive comments online. Following the previous marketing literature (Kim et al. 2009; Li et al. 2015), both behavioral and attitude loyalty are determined by satisfaction and trust. Satisfaction is influenced by information seeking perspective constructs including information quality in the mobile health community, communication quality with doctors, and communications quality with users, which are equivalent to the perceived values of the services provided by the mobile health community. Trust is influenced by privacy and social norms (Culnan and Armstrong 1999), which are equivalent to the service quality in the antecedents of the loyalty development model.



Note: IQ=information quality, CQ=communication quality

Figure 1 Mobile health platform loyalty development model

3.1 Antecedents of mobile health community loyalty

It is generally established that loyalty is determined by satisfaction and trust in the electronic environment (Li et al. 2015). Customer satisfaction is essential for maintaining a long-term relationship with customers from the perspective of Relationship Marketing. The impact of satisfaction on customer loyalty is well demonstrated by scholars in various previous literature (Li et al. 2015; Saeed et al. 2013). Brunner *et al.* (2008) suggested that the loyalty of new users is largely motivated by their satisfaction. For example, it shown that customer satisfaction directly affects their overall loyalty to a hotel (Jani and Han 2014). Picón *et al.* (2014) built an intermediary model to analyze the relationship between satisfaction and user loyalty, the results of which also confirm the positive impact of satisfaction on user's loyalty. In addition to the offline environment, satisfaction also plays the same role on user's loyalty in an online environment. From the mobile information service perspective, it has also been supported that satisfaction with information will lead to loyalty to the mobile service sites (Chae et al. 2002). Based on these previous studies, we propose the following hypotheses:

H1 User's attitude loyalty towards mobile health community is positively influenced by their satisfaction.

H2 User's behavior loyalty towards mobile health community is positively influenced by their satisfaction.

Lee *et al.* (2000) points out that user loyalty depends directly on the level of trust. Similarly, a further study also demonstrates that trust is a key factor in stimulating customer purchases (Jarvenpaa et al. 2000). In the educational context, the level of trust has the positive relationship with the student performance (Cheng et al. 2017). In terms of user loyalty, studies show that 49% of consumers refuse to shop on the Internet due to lack of trust (Flavián et al. 2006). The influence of trust on user loyalty has been proved by many scholars (Abubakar 2014; Chen and Quester 2015; Huang 2017). The trust/loyalty relationship has been established in many previous studies because it is important for building customer relationships (Harris and Goode 2004; Papadopoulou et al. 2001). For instance, Harris and Goode (2004) investigated the influence of e-trust on e-loyalty, and their study showed that there is a positive and direct association between e-trust and e-loyalty. A study by Luarn and Lin (2003) also identified trust as one of the constructs that determine loyalty alongside customer satisfaction, commitment and perceived value. In the mobile health community, trust shall be the

essential factor for members to share information and consult doctors. Without trust, the loyalty is not going to be formed. This leads to the following hypotheses:

H3 User's attitude loyalty towards mobile health community is positively influenced by their trust.

H4 User's behavior loyalty towards mobile health community is positively influenced by their trust.

3.2 Antecedents of satisfaction from the Information Seeking Perspective

It has long been reported that the information seeking process will lead to user satisfaction when the need for information is met (Bruce 1998; Santosa et al. 2005). In the health information seeking context, the similar results have been reported. For example, the more information patients received during their treatment, the higher level of satisfaction is achieved for patients' hospital stay (Oterhals et al. 2006). The health information provided by the mobile health community can be regarded as the information product/service received from the platform, which shall deliver its perceived values to patients. From this perspective, the quality of information, the communication quality with doctors and the communication quality with patients are all vital toward the perceived values of the platform. Adopting the previous satisfaction antecedents, we would propose here the perceived values to be information quality, communication quality with doctors and communication quality with users.

Lim and Ting (2012) believe that websites must provide clear, useful, timely, accurate information to promote positive consumer attitudes. Information quality is one of the major factors in the success of information systems and satisfaction (Laumer et al. 2017; Seddon 1997). It is demonstrated that all information quality dimensions have statistically significant positive relationships with user satisfaction (Koivumäki et al. 2008; Srite and Karahanna 2006). Information quality in the health platform is the subjective judgment of users on the usefulness and effectiveness of health platform information (Hillgoss and Rieh 2008). In the mobile health community, the information quality refers to users' perception on the usefulness and effectiveness of the information obtained from the community. It will directly affect the satisfaction of the community. Based on this, we propose the following hypotheses:

H5 User's satisfaction about mobile health community is positively influenced by information quality.

In the information seeking context, the information is not only to be effective but also needs to be communicated in an effective way. Communication quality refers to the

accuracy, credibility, timeliness, and completeness of the communication (Mohr and Sohi 1995). It has not been assessed very much previously but have been examined often in the psychological field. It has been reported to have a positive influence on satisfaction from the relationship side (Emmers-Sommer 2004; Mohr and Sohi 1995; Orpen 1997). The communication quality in this study refers to the communication with doctors and users in the mobile health community. To be aligned with the previous psychological line of research, communication from family and friends, and doctor's encouragement through the mobile health community have a positive impact on information satisfaction (Brashers et al. 2002). Stewart believes that effective patient-physician communication significantly influences health outcomes and satisfaction with mobile health community (Stewart et al. 2000). By dividing the communication quality as communication quality with doctors and communication quality with friends this study has developed the following hypotheses:

H6 User's satisfaction about mobile health community is positively influenced by communication quality with doctors.

H7 User's satisfaction about mobile health community is positively influenced by communication quality with users.

3.3 Antecedents of trust

Privacy plays the key role for the human behavior any online environment in that it is concerned with the uncertain consequences if not dealt properly (Acquisti et al. 2015; Cheng et al. 2021; Smith et al. 2011). The level of privacy is normally associated with trust and security toward the platform (Belanger et al. 2002; Culnan and Armstrong 1999; Guo et al. 2012). . Studies show that online Security/Privacy has a direct effect on trust (Cristobal et al. 2007; Jones et al. 2000). This is even more important in the mobile health community where the sensitive and personal information is disclosed easily if not properly managed. Nayeri and Aghajani (2010) indicate a significant correlation between respecting privacy and patient satisfaction. When the mobile health community could provide the effective mechanism for privacy protection, a sense shall be created. Based on the previous study, we proposed that:

H8: Trust in the online health community is positively influenced by the level of privacy.

Social norms refers to the individual's perception of how other people (such as friends, family, classmates) expect them to perform (Srite and Karahanna 2006). Lambert and Loiselle (2007) believe that the user's search behavior of health information is not only

the manifestation of individual characteristics, but also subject to the external social environment. Marketers suggest a person's consumption pattern can also affect the patterns of their peers which is called the Jones effect in marketing terms. It means people tends to follow social trends or what other people are following. This is especially obvious in virtual communities where the social interactions can be easily turned into social norms. Obviously, the social norms or social ties could influence the trust toward trust toward the mobile health community as in virtual communities (Hsu et al. 2011). Based on this, we propose the following hypothesis:

H9: Trust in the online health community is positively influenced by social norms of users.

4. Research methodology

An online survey has been designed to collect data from mobile health platform users. Nine constructs were used in this study: Attitude loyalty, Behavior loyalty, Satisfaction, Information quality, Communication quality with doctors, and Communication quality with users, Trust, Privacy and Social norms. The research instruments for this study were adapted from the previous literature review (showed in Appendix). Attitude loyalty and Behavior loyalty measurements have been adapted from several studies discussing on loyalty (Dick and Basu 1994). Satisfaction was adapted from Bhattacharjee (2001). Trust was adapted from Guo *et al.* (2012). Privacy was adapted from Wu *et al.* (2012). Information quality was adapted from Kim *et al.* (2008a). Social norms was adapted from Srite and Karahanna (2006). Communication quality with doctors was adapted from Xiao *et al.* (2014). Communication quality with users was adapted from Carlson and Zmud (1999). All the items were measured with a seven-point Likert scale. The research model of this paper is more of a confirmatory measurement model rather than the exploratory measurement model, so we used covariance-based Structural Equation Modelling (SEM) with LISREL 9.30 for data analysis by following the suggestions from the editorial comments that our data has enough data size, and do not suffer from many issues such as less normality (Ringle et al. 2012).

We collected data using a multistage iterative process. To ensure the scientific rationality of the questionnaire, we conducted a pilot study using 22 respondents who are active participants for mobile health platforms to test for any ambiguous expressions,

awkward wordings, or distortions of the original meanings. The feedback from the pilot study helped correct the wording of the vague and unclear questions. After this, a link of the modified questionnaire was distributed to users of mobile health platforms through an online questionnaire service platforms (website: <http://www.sojump.com>). To achieve a reasonable response rate, a small reward was provided to the users who filled out questionnaires by entering respondents into a prize draw with a winning rate of 50%. The study lasted for 3 months. Out of 201 questionnaires collected, 10 of them suffer from missing data or invalid entries, resulting in 191 valid questionnaires. This is enough for the minimum sample size for CB-SEM data analysis (Jackson 2003). For the hypothesis testing, we have used the significance level of 0.05, 0.01, and 0.001 as in the classical statistical testing method (Hair 2009).

5. Data analysis results

5.1 Respondent Profile

Table I provides a brief description of respondents according to gender, age, monthly income, and occupational status. It indicates that gender is slightly unbalanced with 53.40% female and 46.60% male. Nearly half of samples are students (47.12%), which is consistent with the age distribution (53.93% under 26 years old). Similarly, this also explains why 46.60% of the participants' monthly income is below 2,000 RMB.

Table I Sample Demographics

Category	Number (%)
Gender	
male	102 (53.40%)
female	89 (46.60%)
Age	
<26 years old	103 (53.93%)
26-35 years old	47 (24.61%)
36-45 years old	33 (17.28%)
46-55 years old	6 (3.14%)
>56 years old	2 (1.05%)
Monthly income	
<2000 RMB	89 (46.60%)
2001-4000 RMB	25 (13.09%)

4001-6000 RMB	20 (10.47%)
6001-8000 RMB	13 (6.81%)
8001-10000 RMB	14 (7.33%)
10001-20000 RMB	24 (12.57%)
>20001 RMB	6 (3.14%)
Occupational status	
Students	90 (47.12%)
Employed	101 (52.88%)

5.2 Mobile health platform profile

Table II presents usage statistics of specific mobile health platforms. More than half (60.21%) of the people use a mobile health platform for less than half a year, which is consistent with the development of China's mobile health platforms from the initial stage to the mature stage. Among the most used mobile health platforms, the proportion of "Dr. Baidu" and "Good doctor online" accounted for 31.94% and 26.70% of the total sample size respectively.

Table II Mobile Health Community Usage Distribution

Category	Number (%)
Frequency of Mobile Health Community Usage	
Dr. Chunyu	20 (10.47%)
Dr. Baidu	61 (31.94%)
Dingxiang garden	15 (7.85%)
39 health networks	14 (7.33%)
Good doctor online	51 (26.70%)
Family doctor online	9 (4.71%)
Other (such as Healthcare network, etc.)	21 (10.99%)
Length of Mobile Health Community Usage	
<6 months	115 (60.21%)
6-12 months	30 (15.71%)
12-24 months	26 (13.61%)
24-36 months	7 (3.67%)
>36 months	13 (6.81%)

5.3 Analysis of measurement model

Based on the recommendation of Anderson and Gerbing (1988), a two-step measurement model and structural model analysis approach was employed, and Confirmatory Factor Analysis using LISREL 9.30 was conducted to test the measurement model. To test for common method bias, we conducted a Harman's single factor test by including all items in the survey in an exploratory factor analysis. The threat of common method bias is high if a single factor accounts for more than 50% of the variance (Mattila and Enz 2002). The first extracted factor did not account for a majority of the variance in the items (43.15%). The results showed that common method bias was not a critical issue in this study and the discriminant validity has been achieved with EFA method. The mobile community behavioral and attitudinal loyalty and other variables are established factors with validated measures and this approach can provide the overall goodness of fit for the proposed measurement. CFA validation was evaluated from the GFI, the reliability analysis and the validity perspective.

A model of Goodness-of-Fit Analysis can evaluate the degree of adaptation of the research model to the collected sample data. Different scholars have different classifications and selections for fit indices (McDonald and Ho 2002), and the perfect fit indicator does not exist (Schumacker and Lomax 2004). Therefore, a combination of fit indices should be used in the model fitness analysis, that is, the "most indicators meet the standards" proposed by Hair (1998). For this study, we chose the GFI, the adjusted goodness-of-fit index (AGFI) and the root mean square residual (RMSR) from the absolute fit indices; the non-normalized fit index (NNFI) and the incremental fit index (IFI) from the relative fit indices; and the comparative fit index (CFI) and root mean square error of approximation (RMSEA) from the noncentrality fit indices. The NNFI and IFI were chosen because they are relatively unaffected by sample size (Gerbing and Anderson 1993).

Table III Fit Index

	χ^2	df	NNFI	CFI	IFI	GFI	AGFI	RMSR	RMSEA
Recommended Value			≥ 0.90	≥ 0.90	≥ 0.90	≥ 0.80	≥ 0.80	≤ 0.10	≤ 0.10
Measurement Model	526.15	288	0.94	0.95	0.95	0.83	0.78	0.036	0.066

Structural Model	798.01	305	0.88	0.90	0.90	0.79	0.74	0.12	0.092
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Table III presents the overall fit index of both the measurement and the structural model. The NNFI and CFI are well above the acceptable level of 0.90 (Hu and Bentler 1999) for the measurement model except the NNFI for the structural model (0.88). The RMSEA is below 0.10 and the RMSR value is below the recommended value of 0.10 (McDonald and Ho 2002) for the measurement model. Although the RMSR is slightly larger than the recommended 0.10 for the measurement and the GFI and AGFI index failed to meet the recommended minimum values (Scott 1995), we believe that the model fit is reasonably adequate to assess the results of the structural model. The acceptability of the measurement model was further assessed by construct reliability and construct validity. The former was assessed on three levels—Cronbach’s alpha, item reliability and composite reliability. Table IV presents the means and loadings of each measured item and the item reliability of each item. Item reliability evaluates how much of the variance of the observed variable can be explained by the latent variable rather than by random error. All the item reliabilities surpassed the 0.50 level, which is an acceptable level. Table V shows the Cronbach’s alpha, composite reliability, average variance extracted (AVE), and square root of the AVE, as well as the correlations between the constructs. The Cronbach’s alphas of the seven constructs are all above the recommended criterion of 0.70, ranging from 0.88 (Communication quality with users & behavior loyalty) to 0.95 (information quality), which shows that the measures are internally consistent. The composite reliability values of all the constructs are above 0.8, exceeding the cutoff value of 0.70, which indicated adequate internal consistency. The AVE for each construct is higher than 0.50, suggesting that the observed items explained more variance than the error terms (FORNELL 1981), suggesting excellent convergence validity (Carmines and Zeller 1979). Examining the AVE over than the squared correlations among constructs, it is found that most AVE values are larger than squared correlations among constructs except four items as marked in grey, i.e., Trust with Communication with doctors, trust with satisfaction, trust with attitudinal loyalty, and attitudinal loyalty with satisfaction. We have further checked that all correlations among independent variables in Table V are less than 0.80, which indicated that no multicollinearity among independent variables. A further multicollinearity test with Variance Inflation Factor (VIF) value is listed in table VI and VII, which indicate acceptable level of variable independence (MacKenzie et al. 2011). Thus, all scales of

the measurement model demonstrate adequate internal consistency for further analysis of the construct model, and we have an achieved discriminant validity among most constructs except satisfaction/trust, trust/attitudinal loyalty, trust/communication with doctors, and behavioral/attitudinal loyalty.

Table IV Descriptive statistics of the measures

Construct	Construct Items	Mean	S.D.	Factor Loading	Item Reliability
Attitudinal Loyalty	TDZC1	4.16	1.29	0.85	0.72
	TDZC2	4.46	1.21	0.87	0.76
	TDZC3	4.38	1.23	0.87	0.76
Behavior loyalty	XWZC1	4.4	1.3	0.97	0.94
	XWZC2	4.41	1.28	0.86	0.74
Satisfaction	MYD1	4.46	1.19	0.86	0.74
	MYD2	4.51	1.17	0.90	0.81
	MYD3	4.46	1.19	0.88	0.77
	MYD4	4.47	1.2	0.87	0.76
	MYD5	4.49	1.14	0.88	0.77
Trust	XR1	4.42	1.2	0.84	0.71
	XR2	4.37	1.15	0.84	0.71
	XR3	4.47	1.2	0.85	0.72
Information quality	XXZL1	4.46	1.24	0.85	0.72
	XXZL2	4.34	1.19	0.86	0.74
	XXZL3	4.33	1.17	0.80	0.64
Communication quality with doctors	YSJL1	4.33	1.22	0.77	0.59
	YSJL2	4.22	1.23	0.84	0.71
	YSJL3	4.37	1.18	0.82	0.67
Communication quality with users	YHJL1	4.27	1.19	0.95	0.90
	YHJL2	4.29	1.18	0.84	0.71
Privacy	YSX1	3.99	1.56	0.93	0.86
	YSX2	3.85	1.52	0.80	0.64
Social norms	SHGF1	4	1.35	0.85	0.72
	SHGF2	4.12	1.36	0.90	0.81
	SHGF3	4.01	1.36	0.88	0.77
	SHGF4	4.02	1.3	0.90	0.81

Table V Measurement model results

	Composite reliability	Cronbach's alpha	AVE	Informat	Privacy	Social_N	CommD	CommU	Trust	Satisfac	Behavior	Attitude
Informat	0.87	0.87	0.70	0.70								
Privacy	0.85	0.85	0.75	0.28	0.75							
Social_N	0.93	0.93	0.78	0.25	0.44	0.78						
CommD	0.89	0.85	0.80	0.48	0.37	0.30	0.80					
CommU	0.85	0.89	0.65	0.40	0.28	0.42	0.62	0.65				
Trust	0.88	0.95	0.71	0.15	0.34	0.38	0.77	0.44	0.71			
Satisfac	0.95	0.92	0.77	0.34	0.25	0.38	0.58	0.40	0.92	0.77		
Behavior	0.92	0.91	0.86	0.15	0.18	0.25	0.30	0.19	0.44	0.49	0.86	
Attitude	0.89	0.89	0.74	0.34	0.30	0.38	0.52	0.42	0.81	0.83	0.55	0.74

Note: The bold numbers on the diagonal are the average variance extracted. Off-diagonal elements are squared correlations among constructs. For discriminate validity, diagonal elements should be larger than off-diagonal elements. AVE = average variance extracted.

Table VI Multicollinearity test of Inner VIF values

	Satisfac	Social_N	Attitude	Trust	Behavior	Informat	CommU	Privacy	CommD
Satisfac			4.23		4.23				
Social_N				1.58					
Attitude									
Trust			4.23		4.23				
Behavior									
Informat	1.38								
CommU	1.88								
Privacy				1.58					
CommD	1.99								

Table VII Multicollinearity test of Outer VIF values

Construct	Construct Items	VIF	Construct	Construct Items	VIF	Construct	Construct Items	VIF
Attitude loyalty	TDZC1	2.96	Trust	XR1	2.30	Communication quality with uses	YHJL1	2.75
	TDZC2	2.27		XR2	2.40		YHJL2	2.75
	TDZC3	2.93		XR3	2.55	Privacy	YSX1	2.23
Behavior loyalty	XWZC1	3.42	Information quality	XXZL1	2.49		YSX2	2.23
	XWZC2	3.42		XXZL2	2.56	SHGF1	3.20	
Satisfaction	MYD1	3.41	Communication quality with doctors	XXZL3	2.05	Social norms	SHGF2	3.97
	MYD2	4.10		YSJL1	1.97		SHGF3	3.57
	MYD3	3.70		YSJL2	2.05		SHGF4	3.85
	MYD4	3.34		YSJL3	2.21			
	MYD5	3.76						

5.4 Analysis of structural model

The overall explanatory power of the research model was examined using the R-square and the individual path coefficients. The parameter estimated in a structural model exhibited the direct effects of one construct on the other; thus, a significant coefficient at a certain level of α reveals a significant relationship between latent constructs. Figure 2 suggest that our model explains 64%, 49%, 58%, 37% of the variance of satisfaction, trust, attitude loyalty and behavior loyalty respectively.

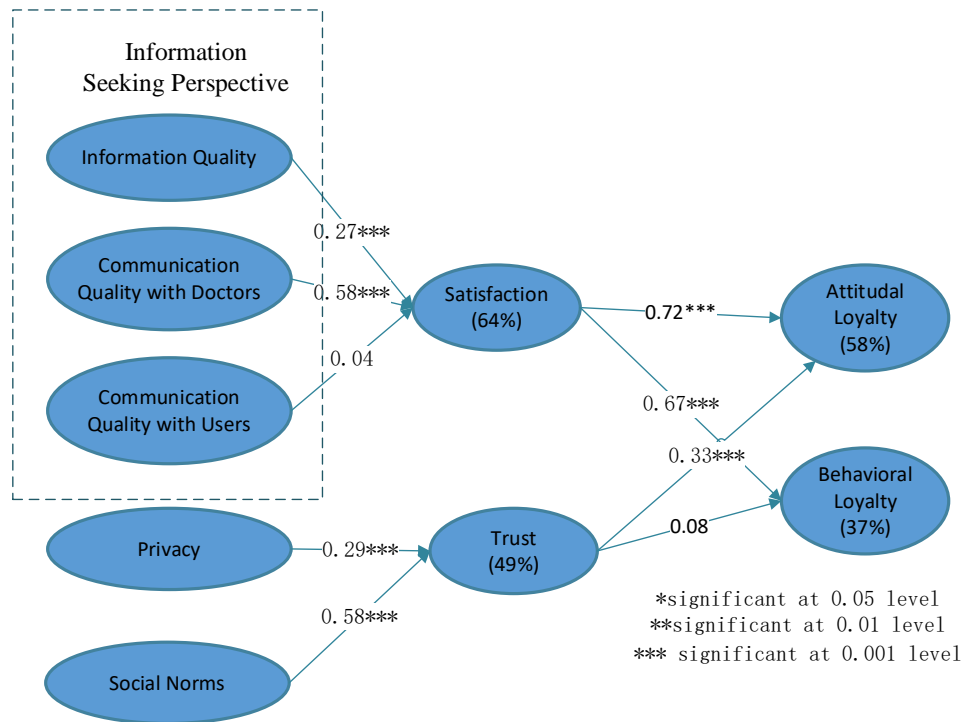


Figure 2 Data Analysis Results

All hypothesis testing results are presented in the following Table VIII, the analysis supported all our hypotheses except H4&H7.

Table VIII Summary of Hypothesis Testing

Hypothesized path	Standardized coefficients	t-value	Results
H1: Satisfaction → Attitude Loyalty	0.72	10.96***	Supported
H2: Satisfaction → Behavioral Loyalty	0.67	9.48***	Supported
H3: Trust → Attitude Loyalty	0.33	5.90***	Supported
H4: Trust → Behavioral Loyalty	0.08	1.22	Not Supported
H5: Information Quality → Satisfaction	0.27	3.84***	Supported

H6:	Communication Quality with Doctors → Satisfaction	0.58	4.95***	Supported
H7:	Communication Quality with Users → Satisfaction	0.04	0.38	Not Supported
H8:	Privacy → Trust	0.29	4.11***	Supported
H9:	Social Norms → Trust	0.58	4.13***	Supported

Note: *p<0.05, **p<0.01, ***p<0.001

The overall effectiveness of different variables on each dependent variable is summarized in Table IX as followings. Attitude loyalty and behavioral loyalty are influenced by both satisfaction and trust. Based on the effect size of each variable, communication with doctors has the largest effect in the mobile health platform loyalty development process, followed by information quality, privacy, and social norms in the descending order. The effect size toward satisfaction will be 0.72 for information quality and 0.58 for communication with doctors. The effect size toward trust will be 0.39 for privacy, and 0.38 for social norms. Satisfaction has the largest effect on the mobile health platform loyalty, and communication with doctors and information quality have moderate effects on e-loyalty. Social norms and privacy have equal effect for trust. Communications with users does not provide any significant effect in all dependent variables. These results indicated that two variables in the information seeking perspective have significant effect in influencing the loyalty development process.

Table IX Strength of Individual Factor

Effects on Attitudinal Loyalty		Effects on Behavioral Loyalty		Effects on Satisfaction		Effects on Trust	
Direct effect	Effect Size	Direct effect	Effect Size	Direct effect	Effect Size	Direct effect	Effect Size
Satisfaction	0.67	Satisfaction	0.72				
Trust	0.08	Trust	0.33				
Indirect effect		Indirect effect		Direct effect		Direct effect	
Information Quality	0.18	Information Quality	0.20	Information Quality	0.27	Privacy	0.39

Communication with Doctors	0.40	Communication with Doctors	0.42	Communication with Doctors	0.58	Social Norms	0.38
Communication with Users	0.03	Communication with Users	0.03	Communication with Users	0.04		
Privacy	0.03	Privacy	0.13				
Social Norms	0.03	Social Norms	0.13				

6. Discussion, Implications and Conclusions

6.1 Discussion of findings

This study aimed to explore the development of mobile health community loyalty from the information seeking perspective. As pointed out in the literature, mobile health community carries unique characteristics that differentiate from the previous wave of e-health platform and technologies. It is worth investigation because it creates a unique business model in the Chinese mobile health platform context for its content-based community features. The previous technology acceptance model can offer explanation on why members accept the technology but not specific to the mobile health community context, i.e., the communication and information seeking perspective is neglected. Taking a close examination, the mobile health community loyalty is rarely discussed compared to a number of studies focusing on brand loyalty through online communities (Choi 2013; Kuo and Feng 2013; Limpasirisuwan and Donkwa 2017a). This study fills this research gap by proposing that mobile health community loyalty is shaped and developed through the information seeking behavior of members in the community. We have adopted the classical loyalty development model with satisfaction and trust as antecedents of both attitude and behavioral loyalty, which are influenced by constructs under the information seeking perspective.

The research results supported all 9 hypotheses except H4 trust has a positive effect toward the behavioral loyalty & H7 that communication quality of users have positive effect toward satisfaction. Our research results have confirmed that the mobile healthy loyalty development process could be explained by the information seeking behavior in the community with the loyalty formation model as in previous studies (Anderson and Srinivasan 2003; Kim et al. 2009; Li et al. 2015). Specifically, our results are worth attention from the following four areas. Firstly, it is verified that satisfaction and trust are two classical antecedents of loyalty, which are consistent with many previous

studies (Anderson and Srinivasan 2003; Casaló et al. 2008; Gremler 1995; Jani and Han 2014; Kim et al. 2009; Li et al. 2015; Picón et al. 2014; Rodríguez et al. 2020).

Secondly, two constructs from the information seeking perspective, information quality, and communication quality with doctors are significantly influencing loyalty development process, with communication quality with doctors taking the largest effect size on both types of loyalty. This has further supported our proposition that mobile health community has provided the information as the product or service valuable to its users. Communication with doctors plays very important role in the mobile health community which are not much discussed in previous literature. Our study has also applied the communication quality as important constructs into the mobile health community area where the communication has more discussed in psychological literature. Information quality is consistent with the results from the previous study it is positively related with satisfaction (Chae et al. 2002; Koivumäki et al. 2008; Laumer et al. 2017). What is worthy for further discussion is that communication quality with users barely have effects on the satisfaction and further no effects to the two loyalty constructs. It might be that communications with doctors are essential in the mobile health community, but the user communications are not that important. Whether this is special to the mobile health community only or it can also be applied to other setting is worth further investigation. Perhaps the online health information is different from other context, where the disclosure of disease information can help the doctors and other users to understand the treatment solutions better. From this perspective, privacy about health condition is not sensitive anymore.

Thirdly, both privacy and social norms are found to highly influence trust toward online health community. This implies that the level of privacy in mobile health community influence level of trust, which is consistent with most previous studies (Belanger et al. 2002; Culnan and Armstrong 1999; Cutillo et al. 2009; Guo et al. 2012; Tang et al. 2008; Wu et al. 2012).

Fourthly, we have used attitude loyalty and behavioral loyalty to form loyalty construct. The research model results demonstrated that both types of loyalty are significantly influenced by satisfaction and trust which are consistent with previous studies (Kim et al. 2009; Li et al. 2015) except trust does not influence the behavioral loyalty. Satisfaction imposed almost the same effect of influence for both types of loyalty but the relationship between trust and attitude is much stronger than trust to behavioral loyalty. It can be explained that the actual re-buying behavior is not necessarily high

due to several factors that affect the user's purchasing behavior compared to the attitude loyalty. In the context of mobile health platforms, users may retain a friendly attitude towards mobile health platforms, but they also need time to understand, accept and adapt to using mobile health platforms to manage their own healthy lifestyle. This explains why the attitude loyalty is more influenced by trust.

6.2 Theoretical implications

The theoretical contributions of this study are threefold. Firstly, this research identified the mobile health community loyalty as a concept ignored by the previous study and proposed a loyalty formation model for it. Many previous studies have focused on the brand loyalty which is the loyalty toward a specific product but the mobile health community loyalty refers to the loyalty toward the platform and community itself (Jang et al. 2008). Our study has developed the mobile health community loyalty development model specific to the mobile communities with the user-generated contents. Future researchers can apply this mobile health community loyalty development model into other community contexts such as mobile brand community or mobile educational community, or social media context. Secondly, this research proposed that verified that users seek information to fulfil their information needs with the information seeking perspective (Brashers et al. 2002; Bruce 1998; Lambert and Loiselle 2007; Santosa et al. 2005). Our research has explored the four significant antecedents for shaping the mobile community loyalty, i.e., information quality, communication quality with doctors, privacy, and social norms. All four constructs are significant predictor for loyalty formation process. Communication quality with doctors is singled out as having the largest effects in the loyalty formation process. Future studies can test these constructs in the other contexts. Thirdly, this study has strengthened research findings to the relationship between satisfaction, trust and brand loyalty as in previous studies (Kim et al. 2009; Li et al. 2015).

6.3 Managerial implications

In the context of the rapid development of mobile health platforms in China and intense competition of the major brands of mobile health platforms, this study provides insights for the mobile health platform manager to pay attention to the process of developing community loyalty from a practical perspective. Our results demonstrate that satisfying the information needs of customers and guaranteeing the information quality of the platform is a powerful tool to enhance the mobile health community loyalty. Besides, practitioners can design the community to encourage effective and good quality

communication with doctors and users. Lastly, to effectively promote social norms for users, practitioners can design a mechanism for users to share information about the platform to social media in their friend's circle to attract additional users.

6.4 Conclusion and Limitation

This paper aimed to investigate the mobile health community loyalty formation process through the information seeking perspective. Drawing from the literature review, a variance-based structural equation modeling was developed to explore the mobile health community loyalty development process from the information seeking perspective via LISREL 9.30 to a sample of 191 mobile health platform users. The SEM data analysis results demonstrated that information seeking perspective can explain the mobile community loyalty formation process.

There are three limitations for this study. The first limitation of this study is the sample. The sample might not be entirely representative of all mobile health platform users as most respondents were contacted through personal relationships. The second limitation of the investigation is that this study is based on China's specific mobile health environment, which is called "Chinese characteristics". Future studies need to extend the sample size and collect data from other locations to further validate our research results. The third limitation of this study is the measurement of some constructs have a weak discriminant validity, i.e., trust, satisfaction, behavioral loyalty, and attitudinal loyalty. Future studies need to further improve the measurement of these constructs to achieve strong discriminant validity.

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Appendix: Questionnaire (7 Likert Scale)

Attitude loyalty

1. When faced with the situation to score the platform, I will play a higher score
2. I think the health platform's service is best in its class
3. I will give a positive comment when discussing the platform on other platforms or forums

Behavior loyalty

1. In the recent past, this healthy platform has been my first choice for acquiring health information
2. In the past, I used to check health information mainly through this health platform

Satisfaction

1. I am satisfied with the use of the medical platform
2. I am satisfied with the service provided by this platform
3. I am satisfied with the medical and health information provided by this platform
4. The process of using this medical platform made me feel good
5. The level of service provided by this medical platform made me satisfied

Trust

1. I think the medical platform is trustworthy and honest
2. I believe the information provided to me by this medical platform
3. Overall, the medical platform is reliable and secure

Privacy

1. The platform explains why to collect personal information
2. The platform explains how personal information collected will be used

Information quality

1. The platform can provide useful health information
2. The health information provided by this platform is timely
3. The platform provides health information that is reliable

Social norms

1. My relatives think I need to use this platform
2. My friend thinks I need to use this platform
3. People whose opinions are important to me encourage me to use the platform
4. My classmates feel that this platform is helpful to me

Communication quality with doctors

1. The platform's online doctor explains the problem easy to understand
2. I feel that the platform's online doctor respects my privacy very much
3. The platform's online doctor helps me solve my health problems as much as possible

Communication quality with other users

1. I like to talk to other patients on this platform about some personal issues
2. I had a kind of intimacy with the other patients on the platform