

Developing a Conceptualization of Mobile Service Quality

Short Paper

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Abstract

Mobile devices changed the way that users nowadays encounter online environments. These devices have become the essential touchpoints for users on their path to purchase. Since recent IS literature does not provide comprehensive measurements for mobile service quality (MSQ), we employed focus groups and critical incident technique to collect 422 user statements related to perceptions of service quality in mobile shopping situations. Our study explores eighteen attributes representing five essential dimensions of MSQ. The results suggest that users assess mobile stores depending on the offered ubiquity of services (e.g., mobility, location-based services), mobile store design (e.g., responsive design, synchronicity, information quality, product selection), customer service (e.g., social media, return policies), order fulfillment (e.g., process transparency, timeliness of delivery), and security/privacy. We discuss this conceptual model of MSQ which will be used to develop a comprehensive MSQ measurement in further research.

Keywords: Mobile service quality, m-commerce, qualitative research, mobile devices, e-business, mobile technology

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Introduction

Mobile devices changed the way that users nowadays encounter online environments. Particularly in online shopping contexts, these technologies have become the essential touchpoints for many users when buying products and services online (Verhoef et al. 2015). For instance, 60% of U.S. customers already use a mobile device when shopping on Amazon (eMarketer 2017). Furthermore, 38% of all internet transactions are nowadays executed via smartphones or tablet computers (Criteo 2017) and 43% of desktop transactions are made after consumers have browsed product information on at least one mobile device (Criteo 2016). These figures illustrate the significance of mobile commerce (m-commerce) for many retailers. M-commerce refers to all electronic transactions which were executed with a smartphone or a tablet computer. Due to its growing importance, it is essential to understand how user behavior and perceptions may change as a result of this technological innovation (Verhoef et al. 2015).

Consequently, retailers are nowadays interested in gaining a better understanding how to offer excellent mobile service quality (MSQ) to satisfy the expectations of this user group. MSQ refers to *“the extent to which mobile transactions of goods or services offer satisfying outcomes”* (adapted from Blut 2016). However, existing research on MSQ is still characterized by a desktop-centric perspective (Yadav & Pavlou 2014), because it is often based on findings from the general electronic commerce context (e.g., Huang et al. 2015; Salameh & Bin Hassan 2015). These studies usually do not consider that mobile devices have unique characteristics allowing retailers to offer additional benefits to users (Lamberton & Stephen 2016). Venkatesh et al. (2017) stress the uniqueness of mobile technologies, suggesting that their characteristics may influence the user’s decision-making and perceptions of service quality. Additionally, research on MSQ did not consider properties that are specific to shopping with a mobile device such as limited bandwidth capacity and screen-size constraints, which may affect customer’s usage behavior (Wang et al. 2015). Contrary to smartphones, desktop computers cannot be moved around that easily restricting their possible applications. The ‘go-mobile transformation’ has further impacted user expectations who particularly appreciate the ubiquity of mobile services. ‘Ubiquity’ refers in this context to an increasing mobility of mobile users allowing them to engage in mobile commerce anytime and anywhere (Kleijnen et al. 2007). As recently indicated by Lamberton and Stephen (2016), the service quality literature is still lacking a comprehensive conceptualization of MSQ covering most important factors impacting MSQ perceptions. Existing MSQ studies are characterized by a high level of fragmentation and it is still unclear which factors influence MSQ perceptions (Lamberton & Stephen 2016). To address these issues, we intend to develop a MSQ conceptualization which can be used in future studies for scale development. We use an exploratory research approach to develop this conceptual model and discover key factors that lead to superior service quality perceptions. We thereby address the following research question:

What are the determinants of superior service quality while shopping with a mobile device?

The manuscript is structured as follows: First, we review the literature on MSQ. In this section, we discuss means-ends chain theory as conceptual basis of our research and highlight the need for developing a new MSQ conceptualization. Second, we describe the employed methods and present the results of conducted focus groups and critical incident technique. Finally, we discuss initial findings of these studies and outline first implications for future research on the MSQ construct.

Literature on Mobile Service Quality

In line with Parasuraman et al. (2005), we employ means-ends-chain theory as theoretical basis of our conceptual framework (see also Blut et al. 2015). This theory suggests a multi-attribute approach to better understand service quality perceptions. It argues that mobile users are able to evaluate their shopping experiences in terms of specific and concrete occurrences (at the attribute level) which may then be

synthesized and related to higher-order dimensions, the latter being relatively more abstract (Johnson 1984). For example, users may evaluate their consumption experience in terms of specific attributes such as “product selection of the mobile store” which may then be related to higher-order performance dimensions such as quality of the “mobile store design,” with the latter being more abstract. Users link each specific attribute to a higher-order dimension, which in turn is associated with a higher-order summary dimension such as overall MSQ (Gardial et al. 1994). Overall MSQ, in turn, impacts key outcomes such as satisfaction, repurchase intention, and word-of-mouth (Parasuraman et al. 2005). During the mobile shopping process, the user makes different experiences with the mobile store regarding product presentation, aesthetics of the store, or price offerings. The assessment of all of these experiences results in an overall evaluation of the mobile store. Following means-ends-chain theory, it is crucial for the understanding of MSQ to determine the different attributes and the corresponding higher-order dimensions related to this construct (Blut 2016).

To conceptualize MSQ, it is essential to understand the characteristics of mobile devices (Kannan & Li 2017; Venkatesh et al. 2017). From a technological point of view, smartphones and tablet computers are – compared to desktop computers – limited in battery power, have smaller displays and input buttons, and they are limited in processing abilities (e.g., Wang et al. 2015). Accordingly, product presentation and service usage through mobile devices is assumed to be less comfortable for the user. Despite all technological limitations, m-commerce also offers certain benefits related to mobility and localization of services. Mobility of services allows mobile users to shop anytime and anywhere they want, with the result that the distinctions between physical and online shopping environments disappear (Kleijnen et al. 2007). Localization enables the service provider to track the consumer through the global positioning system. So-called location-based services change the interaction between mobile users and retailers into a more dynamic exchange of information which offers the possibility of real-time marketing (Zou et al. 2016). These benefits allow retail firms to offer more personalized and uninterrupted shopping experiences (Grewal et al. 2017). In summary, it can be stated that characteristics of mobile devices may lead to device-dependent perceptions and expectations of service quality which are relevant for the user’s decision-making and constitute a new research context.

Existing MSQ conceptualizations very often do not consider the above benefits since the studies were conducted in other contexts than m-commerce, including mobile health services (Meigounpoory et al. 2014), mobile value-added services (Kuo et al. 2009), or mobile brokerage services (Lu et al. 2009). The only MSQ scales examining the m-commerce context were provided by Huang et al. (2015) and Vlachos et al. (2011). They derived their MSQ models from traditional service quality research without addressing the discussed ‘ubiquitous availability’ of mobile services and screen-size constraints of mobile devices. For example, Vlachos et al. (2011) propose a dimension which they label ‘outcome quality’. This dimension is formed by content variety and aesthetics, which are attributes of the website design dimension. These attributes have already been proposed in traditional service quality literature (e.g., Blut et al. 2015). Similarly, Huang et al.’s (2015) conceptualization of MSQ includes attributes such as privacy, order fulfillment, system availability, or website content. These factors also represent attributes and dimensions which were already discussed in general e-service quality research (e.g., Blut 2016; Parasuraman et al. 2005). However, the only mobile-specific attributes that existing literature proposes are ‘billing’ (Huang et al. 2015) and ‘quality of the communication network’ (e.g., Kuo et al. 2009). In line with this discussion, research on IS and human-computer interaction often studied service quality in m-commerce without taking the mobile context into account (Hoehle & Venkatesh 2015). Research on mobile applications is therefore characterized by measurement instruments that evolved from general website usability research without considering the unique characteristics of mobile devices (see Venkatesh & Ramesh 2006). Although existing studies do not provide comprehensive construct conceptualizations and measurements, they give at least some indication of potential dimensions relevant for MSQ.

Method and Procedure

Method Selection

To explore the specific MSQ attributes and dimensions, we conducted two qualitative studies, including focus groups and critical incident technique (CIT). These approaches are relevant for our research, because they are attractive methods of investigation particularly in the early phases of research with

limited literature being available. Furthermore, these approaches allow human behavior to be collected, analyzed, and classified (Flanagan 1954; Gremler 2004). A multi-method approach is discussed to increase the probability of developing a valid MSQ conceptualization (Lamberton & Stephen 2016). Thus, we use two approaches that complement each other - as explained below - to explore MSQ dimensions and attributes.

In addition, since consumers of all ages use their mobile devices to purchase goods and services from online providers, a diversified set of respondents is needed. To enhance the generalizability of the MSQ conceptualization, we implemented a multi-source data collection.

Focus Groups: Data Collection and Method

A focus group consists of diverse participants discussing interactively a relevant topic for the researchers (Calder 1977). The members of the focus group were selected based on specific criteria (e.g., in this case online affinity and/or mobile shopping experience). We conducted five focus groups of mobile commerce users (21 consumers) from a university in Germany. While three focus groups included graduates (11 participants), the two others included undergraduate students (10 participants). Focus groups of three to five members represent an ideal number of participants for brainstorming studies (Fern 1982), so that the fundamental motivations of focus groups such as group dynamic and consensus-building are guaranteed (Calder 1977). The focus groups were compiled as homogeneous as possible, so that the group members share common personality traits relevant to the topic and to benefit from similar experiences of the group members.

Participants were asked to discuss their service quality expectations and the perceived advantages when shopping with a mobile device. In addition, we wanted to understand what circumstances make mobile shopping either enjoyable or difficult from user perspective. Furthermore, we discussed with study participants the usability of their favorite application or mobile website. Students agreed with the recording of the discussions and all interviews were transcribed. Four independent experts reviewed the transcripts using content analysis. The experts did not complete the discussion until they reached a satisfactory level of agreement (inter-rater reliability: 91%).

Critical Incident Technique: Data Collection and Method

Contrary to focus groups where the researcher has to stimulate the discussion, the CIT method needs no preconception from researchers because the context is developed entirely from the perspective of the customers. Thus, CIT represents an inductive method where concepts and theories are formed as they emerged from the participants' responses (Gremler 2004). For this reason CIT is commonly used for scale development studies. To better understand the research context, a large number of studies combines the CIT method with a second exploratory approach – just as our study – to benefit from the respective strengths of different methods (see Gremler 2004).

We recruited 265 participants from an online survey panel in the United Kingdom to report critical incidents related to their past mobile shopping experiences. The sample consists of 47.1% females users with a mean age of 45.33 years (SD=12.99). We asked the participants to “Think of a time within the last six months when [they] were shopping on the mobile internet and had a particularly satisfying (dissatisfying) experience.” The period of six month is recent enough to ensure a reliable recall of the encounter (Keaveney 1995). Once they had reported such an incident, they were asked to provide a detailed description of this encounter. Content analysis was reviewed by the same experts as in the previous study (inter-rater reliability: 95%).

Results and Discussion

Results of the Focus Groups

The key findings of the focus groups are summarized in Table 1. Overall, we collected 181 statements related to the participants' perceptions of MSQ. In total, we explored five dimensions consisting of sixteen attributes being relevant for participants when shopping with a mobile device (see also Table 1).

Table 1. Results of the Qualitative Research on MSQ		
Dimensions/Attributes	Focus groups	Critical incident
<i>Ubiquity</i>	32 statements	67 statements
Mobility	x (32)	x (48)
Location-based services	NO	x (19)
<i>Mobile store design</i>	69 statements	111 statements
Price offerings	x (3)	x (33)
Information quality	x (12)	x (3)
Responsive design	x (7)	x (11)
Product selection	x (7)	x (5)
Synchronicity	x (17)	x (7)
Mobile store aesthetics	x (3)	x (1)
Mobile store convenience	x (16)	x (28)
Billing	NO	x (23)
<i>Customer service</i>	42 statements	14 statements
Service level	x (25)	x (8)
Return policies	x (7)	x (2)
Social media	x (10)	x (4)
<i>Fulfillment</i>	21 statements	49 statements
Timeliness of delivery	x (6)	x (26)
Order accuracy	x (2)	x (21)
Process transparency	x (13)	x (2)
<i>Security/privacy</i>	17 statements	NO
Privacy	x (9)	NO
Security	x (8)	NO

First, we explored a dimension which was labeled *ubiquity*. This dimension has been mentioned 32 times and focus group participants stated that superior retailers have to ensure an uninterrupted access to mobile stores. Ubiquity is specified by the attribute mobility. *Mobility* was mentioned 32 times and participants indicated that a time- and location-independent consumption is the most important factor related to this attribute. Mobility refers to shopping without spatial and temporal constraints (Kleijnen et al. 2007). The study participants explain that shopping with a mobile device is more convenient and less time consuming compared to regular commerce. Therefore, mobile users have the perception of being more efficient in using their time because the smartphone enables them to do business at times and places where it is normally not possible, as indicated by the following statements:

“My smartphone allows me to buy tickets for the cinema wherever I am, even on the way to the cinema.” (FG 1)

“I am able to purchase late at night, so shops are closed, and I am able to do this, from the comfort of my own home or even when I am on the move.” (FG3)

“Shopping with my smartphone is much more efficient and effective. I can use the time on the train to check a few things or to order something quickly.” (FG2)

Second, the focus group results suggest *mobile store design* to be a second MSQ dimension which was mentioned 69 times by participants. They stated that superior mobile stores and applications should be equipped with the same design, navigation, and structure. Mobile store design is defined as the degree to

which a mobile user perceives that the mobile store is generally well-designed. While this dimension has been discussed in service quality literature before (e.g., Holloway & Beatty 2008), focus groups indicate that mobile users appreciate different attributes. (1) Responsive design and (2) synchronicity represent unique attributes for the (mobile) service quality literature. Additionally, participants associate with an excellent mobile store design superior (3) price offerings, (4) information quality, (5) products selection, (6) mobile store aesthetics, as well as (7) mobile store convenience.

The unique attribute *responsive design* was mentioned seven times in the focus groups. It refers to the extent to which a mobile user interface can adapt layout and content to viewing contexts across a spectrum of digital devices (Gardner 2011). Participants stated that an excellent responsive design ensures that the content within the mobile store resizes concurrently and that the design of the mobile store is optimized for different viewing contexts. Due to the smaller displays of mobile devices, responsive design is crucial for mobile users because it ensures the mobile store's convenience (16 statements), information quality (12 statements) and aesthetics (3 statements):

"I can't remember what I was buying or from where but because the website was not enhanced for a mobile device, I could not complete my purchase correctly as pop up fields were not visible on my screen." (FG1)

"It is really dissatisfying when the websites are not set up for mobile use and the website buttons are tiny and you spend a lot of time zooming in and out." (FG2)

"I can't remember the name of the company but their site was not mobile friendly which made the whole process of searching, selecting and purchasing the product very challenging. The site also didn't give the same options and information as the desktop site." (FG5)

The attribute *synchronicity* describes the extent to which mobile users feel that they have real-time bidirectional feedback (Huang 2003). Synchronicity was mentioned 14 times and participants of focus groups emphasize its importance because of the smaller display of mobile devices. They state, that additional information is often accessible on further sites. To guarantee a convenient shopping experience, hyperlinks connecting to these additional sites have to load quickly and perform properly. In this context, participants also mentioned that system availability is crucial, because it is responsible for the accurate technical functioning of the mobile user interface:

"I can't remember exactly what I was trying to purchase at the time, but the screen kept freezing when I hit a hyperlink and in the end I gave up and didn't make the purchase." (FG3)

"Mobile apps sometimes crash when you want further information, and that can be frustrating, when it crashes for no apparent reason. So app-stability is something that can frustrate me." (FG1)

Third, *customer service* was found to be the third dimension of MSQ. Customer service was mentioned 42 times and it matters to participants in all stages of the customer journey (Bauer et al. 2006). While this dimension has been discussed in the general service quality literature (e.g., Parasuraman et al. 2005), the participants of focus groups indicate that the role of customer service changes in the mobile environment. The retailer's contact persons need to be constantly available in mobile environments and mobile users want their problems to be solved immediately and individually. Participants mentioned that the attributes (1) service level, (2) mobile chats, (3) social media, and (4) return policies are more important for customer service. Especially *mobile chats* and *social media* represent new attributes to the service quality literature.

Due to the importance of speed and personalization during problem solving, participants of focus groups prefer the newly explored attribute *mobile chats* for communication instead of call centers or e-mail. Mobile chats were mentioned seven times and refer to the availability of assistance through mobile chats. Participants of focus groups had good experience with avatars and perceive the help through mobile chats as faster and more problem-focused:

"The item I wanted was out of stock so I used a mobile chat to ask when it would be in stock again. The avatar looked and told me the one I wanted was discontinued, but they offered me an older version at a discounted price. Very helpful staff answering questions raised task-orientated and immediately." (FG1)

"I ordered a Hoover from (...) last time. I was unable to find a helpline number so I used a mobile chat and talked to an avatar. It really helped to clarify details and to make my decision. The communication has been excellent and fast." (FG2)

Social media was mentioned ten times and participants associate with it the provision of a marketplace where consumer-to-consumer communications can take place. With regard to information search and reception of help when choosing a product, mobile users particularly trust user-generated content. Participants mentioned that they usually rely on product reviews, user experience reports, blogs, and so on, because they provide additional information which is perceived to be more credible:

"Their site makes it very easy to check out book descriptions. I looked up three different ones and checked the customer reviews. The quality of information were much better. Reviews are more independent and thus more credible." (FG4)

"It was expensive and it worked. It was also compatible with my phone. I was not sure about it and I had my doubts. But all the reviews said it would be OK and it really was." (FG3)

Fourth, the *fulfillment* dimension of MSQ was mentioned 21 times which refers to the retailer's ability to ensure that customers receive what they actually ordered (Blut 2016). This dimension was also discussed in service quality literature before (e.g., Holloway & Beatty 2008). We explored this dimension to consist of (1) process transparency, (2) timeliness of delivery, and (3) order accuracy. Contrary to prior research, *process transparency* seems to matter mainly for mobile contexts. This attribute was mentioned 13 times and refers to the extent to which a retailer is forthright and open regarding the delivery process. Transparent information about the status of the delivery turned out to be crucial for MSQ perceptions. Participants indicated that they want to receive real-time information about delivery processes and expect to be informed automatically if problems occur:

"When buying some shoes, they took a long time to arrive. But it was so simple to track delivery and they were very quick to indicate the problem. In the end the shoes took a long time to arrive but it was ok because I knew about it." (FG1)

"It would be really great having the timetable information available on my smartphone. Waited too long for delivery even though the website said it will be delivered in one week." (FG2)

Fifth, our focus groups explored a last dimension which was described as *security/privacy* dimension (overall 17 statements). This dimension indicates that mobile users expect the retailer to ensure the (1) security of their transactions (8 statements) and to ensure that their (2) information is kept private (9 statements).

As a result of the discussion with the two experts who also coded the user statements, the attributes synchronicity and system availability were combined into the factor synchronicity, as the statements and definitions closely resemble each other. Additionally, mobile chat has been assigned to the attribute service level as an additional contact opportunity.

Results of Critical Incident Technique

The key findings of the CIT are summarized in Table 1. In total, we collected 241 statements related to MSQ perceptions and explored four dimensions and 16 corresponding attributes. In comparison to the focus groups, all dimensions and attributes explored in the focus groups were confirmed, except for the dimension security/privacy which was not mentioned at all. Additionally, we explored two new attributes which are (1) location-based services (LBS) and (2) billing. Compared to our prior conceptualization of MSQ, *LBS* and *billing* represent unique attributes. Accordingly, the CIT generated new insights and validated the previous results.

The first new attribute *LBS* was mentioned 19 times and refers to the retailer's ability to provide personalized advertisement and promotion based on the user's current location and time. *LBS* are assigned to the ubiquity dimension and the definition of ubiquity was extended. Ubiquity therefore refers to retailer's ability to ensure an uninterrupted and personalized communication based on location and time. With regard to *LBS*, mobile users are approached with tailored promotion and advertisement. Hence, they benefit from personalized offers which make them feel unique. Thus, *LBS* represent one form

of website personalization because the individual geographical location of the user is taken into account when designing the offer:

"I received a discount while shopping in a retail store. It was a beautiful offer that made me feel unique."

"I was looking for a slide for my son and a promotion came up from the retailer."

"I was provided with a free gift voucher by a retailer while visiting his retail store."

"Retailer offered me a discount when spending £100 right before my husband's birthday. I was able to find a present for my three year old daughter, too, exactly with the help of the discount."

The second unique attribute *billing* was mentioned 23 times and refers to the perceived transaction convenience of the payment process (Huang et al. 2015). Billing was assigned to the mobile store design dimension. Participants of CIT appreciated features like one-click-buy or using the thumb-print to make the purchase respectively the payment. Thus, process convenience and time savings are the most important drivers of satisfaction with regard to the mobile billing process:

"I can just use my thumbprint to make the purchase - it really couldn't be any simpler and quicker."

"Mobile site with my details stored making a fast and convenient transaction."

"I appreciate convenient transactions that take me straight to my payment option and ask for no other information and the purchase is done."

With respect to the security/privacy dimension, it may be possible, that participants take security for granted and assume that mobile stores have to comply with privacy law and ensure the security of transactions. These assumption is caused by negative incidents which were reported about the billing process (31 statements). Participants complain particularly about a lost connection during the payment process but do not link security issues with this incident:

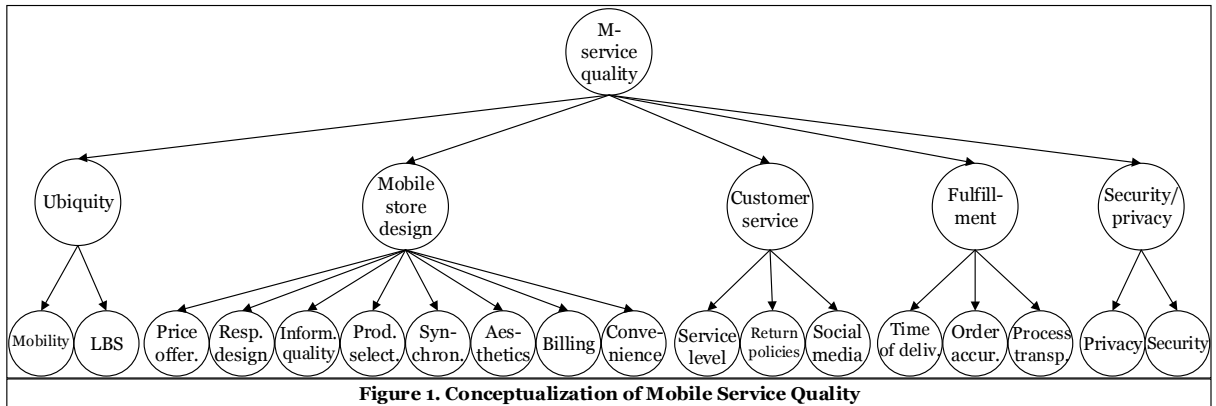
"I was trying to pay for concert tickets but the website kept crashing and by the time I got into the site again, the seats I wanted had gone leaving only limited view seats."

"I lost connection to my retailer's mobile store while completing the payment process and lost my order. When I went back to the store, I see my basket empty. In the end I found another supplier."

In addition, we find differences when comparing the number of positive and negative incidents mentioned by study participants. They particularly reported that positive incidents were made with regard to price offerings of the mobile store (33 times), mobile store convenience (28), and timeliness of delivery (26). Negative experiences were reported with regard to the already mentioned billing process (31) and the order accuracy (21).

Conclusion and Further Research

In total, this study derived 18 attributes representing 5 essential dimensions of MSQ. It revealed first indications that mobile devices enhance retailers and customers to do things that cannot be done with desktop computers and they change expectations of m-commerce users. Compared to existing MSQ studies (especially Huang et al. 2015), we contribute to the literature by considering the 'ubiquitous availability' of mobile services and screen-size constraints of mobile devices in our MSQ conceptualization. For instance, the dimension 'ubiquity' covers the mobility of users allowing them to engage in commerce without temporal and spatial constraints. Furthermore, 'ubiquity' provides the opportunity to receive personalized offers based on their location. These attributes are likely to be perceived favorably by consumers, enabling retailers to offer additional benefits to users. The dimension 'mobile store design' consists of attributes such as responsive design, synchronicity, and billing. These attributes address the screen-size constraints of mobile devices and are supposed to improve convenience during the whole purchase process. Our findings show that mobile users need additional information during the purchase process. Therefore, we include attributes such as social media (assigned to customer service) and process transparency (assigned to fulfillment) in our model. None of these attributes, except billing (Huang et al. 2015), was provided by previous studies. Figure 1 displays the proposed conceptual model of MSQ:



For instance, mobile users link their perceptions of mobility and LBS to the higher-order ubiquity dimension. In turn, ubiquity represents one of five essential dimensions that form the overall MSQ perception. Especially the mobile-specific attributes of the ‘ubiquity’ and ‘mobile store design’ dimensions are likely to be useful for future work which intends to develop a comprehensive service quality scale for the mobile shopping context.

Additionally, our results can assist service managers in several ways. First, we offer a comprehensive conceptualization of MSQ which helps retailers gaining a better understanding of the perceptions and expectations of their mobile customers. Our conceptualization allows managers to improve service quality and benchmark the performance of their mobile store against competing retail firms. Second, with regard to the newly explored attributes and dimensions of MSQ, the provided conceptualization offers the opportunity to better understand how to adapt the design of the mobile store as well as how to better promote the offered goods and services.

As a limitation, our conceptualization of MSQ may not be fully applicable for other mobile devices such as wearables (e.g., fitness bracelets or smart watches). Unlike smartphones or tablet computers, wearables are attached to the customer’s body and are often used without spending much attention to them. Also, wearables can fulfill various functions at night (Shankar et al. 2016). Hence, our conceptualization does not provide a dimension with corresponding attributes covering these characteristics. However, wearables need smartphones and tablet computers as hardware for the corresponding apps to work (Shankar et al. 2016). Some of the identified attributes may therefore also matter for wearables. Because wearables transmit a great quantity of data to the corresponding device, retailers may want to gain access to this information. They receive the opportunity to use the transmitted personal data for a more personalized and individualized service. Thus, attributes such as LBS or mobility may also be important drivers of superior service quality in this context. It is also possible that security or privacy concerns gain even more importance because customers provide very personal data when using wearables.

The next step of our research includes the generation of items for our service quality conceptualization. To compile these items, we will use statements derived from the qualitative studies and review existing literature to adapt items from related constructs. Afterwards, the explored dimensions and attributes of MSQ will be validated in several surveys. In this context, we will conduct two quantitative studies, one to develop the MSQ measurement and one to validate the scale using a second data set.

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