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EXAMINING DISCONTINUERS' WORD-OF-MOUTH BEHAVIOUR IN THE CONTEXT OF MOBILE LOCATION-BASED SERVICES

Complete Research

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Abstract

Previous information systems (IS) research has paid little attention to the determinants of users' discontinuance and the consequences of that behaviour. This study investigates the influence of different discontinuance reasons on post-discontinuance word-of-mouth (WOM) communication in the context of mobile location-based services (LBS). Based on existing literature, a theoretical framework is developed representing three general reasons for IS discontinuance: 1) decline in service quality, 2) change in user needs, and 3) attractive alternatives. Their effect on post-discontinuance satisfaction and WOM is empirically tested through a quantitative survey study with German LBS users. Results indicate that a decline in service quality significantly affects negative customer WOM about the service, while a superior alternative mobile service as the main discontinuance reason leads to post-discontinuance dissatisfaction, which may in turn influence negative WOM behaviour. In contrast, discontinuance due to a change in user needs is associated with a slightly elevated level of post-discontinuance satisfaction.

Keywords: Post-Adoption, IS Discontinuance, Word-of-Mouth, Location-Based Services.

1 Introduction

Research on the post-adoption stage of IS use has given growing attention to the factors driving continuous use of IS and the underlying cognitive processes (e.g., Bhattacharjee, 2001; Limayem et al., 2007). While it is both informative and insightful, the post-adoption research has scantily addressed the end of the IS life cycle, marked by the event of discontinuance. IS discontinuance refers to the cessation of the use of an information system by an organization or an individual user after a period of regular usage (Furneaux and Wade, 2011). Understanding the determinants of discontinuance is highly relevant to service providers for two key reasons. First, discontinuance usually implies a decrease in revenue for the provider (Parthasarathy and Bhattacharjee, 1998). For example, online retailers and agencies generate revenue based on the number and/or size of transactions they process, and online content providers (e.g., web portals, online newspapers) often apply advertising or subscription-based revenue models. Second, discontinuance is likely to cause further loss in revenue through interpersonal word-of-mouth (WOM). Unsatisfied customers may not only cease their use of a product or service, but also spread negative WOM discouraging potential and current customers from using it (Parthasarathy and Bhattacharjee, 1998; Wangenheim, 2005). The relevance of interpersonal recommendations and online reviews and ratings in consumer purchase decisions has long been recognized in research (e.g., Arndt, 1967; Bansal and Voyer, 2000). As negative WOM has been found particularly influential (e.g., Herr et al., 1991), discontinuers' WOM behaviour needs to be better understood.

This argument constitutes the focal point of this study. Specifically, the present study aims to understand the relationship between different discontinuance reasons and users' subsequent WOM behaviour. WOM refers to the expression of one's approval (positive WOM) or disapproval (negative WOM) of a product or service. There is preliminary evidence that the reason for discontinuance influences an individual's WOM behaviour (Wangenheim, 2005). However, until now no study has explicitly investigated this matter in more detail.

Mobile services, in particular mobile location-based services (LBS), were chosen as a suitable case study for this research. LBS are defined as applications that use the current geographic position of a mobile user to provide personalized services (Perusco and Michael, 2005). A number of positioning technologies, such as Cell Identifier (Cell ID) or the Global Positioning System (GPS), allow pinpointing of an individual's or an object's current position (Rao and Minakakis, 2003). The integration of location data in mobile services allows contextualized and therefore personalized user experiences (Pura, 2005). As a classical example, a request for directions in a mapping and navigation service might be automatically personalized for where the user is currently located and the service may provide precise navigation instructions to the user while on the move (Constantiou et al., 2014). LBS are praised as a promising revenue source for mobile service providers, but in order to generate revenue from LBS, providers must maintain users' regular use. Discontinuance is a particular challenge faced by mobile service providers, since many services are adopted but abandoned after a while (Franz, 2010). Moreover, in the mobile context, WOM communication among users within their social networks and via online reviews and ratings is very common and plays a crucial role in service adoption because service quality is often difficult to assess before actual use. Negative comments and low ratings by dissatisfied users, who are likely to have discontinued service use, may dissuade potential customers from downloading and decrease the market share of a mobile service in the long run.

Based on the relevance to both researchers and practitioners, this study seeks to answer the following research question:

- *What effect do different discontinuance reasons have on post-discontinuance WOM behaviour in the context of mobile LBS?*

In order to address this research question, this study was inspired by the conceptual framework of Furneaux and Wade (2011), which provides a typology of three central discontinuance reasons. Since the framework was originally developed in an organizational context, it has been adapted here to the consumer context. The influence of the derived discontinuance reasons on discontinuers' WOM behaviour was tested through a large-scale quantitative survey with a sample of LBS users in Germany.

This study mainly contributes to IS discontinuance research by extending our current knowledge of discontinuance of consumer services, such as LBS. In contrast to existing research that has mostly investigated the antecedents of discontinuance, this work focuses on the consequences of discontinuance, namely post-discontinuance WOM behaviour. Besides, the research provides useful insights for market players into what discontinuance reasons are most likely to result in negative WOM behaviour. A deeper understanding of this relationship enables service providers to identify customers likely to spread negative WOM and take counteractive measures.

The paper proceeds as follows. The next section reviews the literature on IS discontinuance and WOM behaviour. In the subsequent section, a conceptual model explaining the relationship between LBS discontinuance reasons and post-discontinuance WOM is developed and corresponding hypotheses are derived. This is followed by empirical testing of the model through qualitative interviews and a quantitative survey study. The paper concludes with a discussion of the results.

2 Literature Review

2.1 Research on IS Discontinuance

To date, very few studies explicitly address the issue of IS discontinuance. Existing research has aimed at identifying customer characteristics effective in distinguishing between continuers and discontinuers in the context of subscription-based online services (Parthasarathy and Bhattacharjee, 1998, Keaveney and Parthasarathy, 2001) and the Internet Service Provider industry (Spiller et al., 2007). The results indicate that continuers and discontinuers differ in their expectations, perceptions and usage patterns. Two studies explicitly investigated discontinuance in the mobile services context. The first study by Kim et al. (2008) compared mobile data services' (MDS) continuers and discontinuers in terms of different factors derived from prior adoption studies (e.g., usefulness, usability, system quality) and investigated how these factors affect the perceived value of MDS and the intention to use MDS among the two groups. Choi et al. (2011) examined the influence of motivational factors (i.e., intrinsic vs.

extrinsic) and service types (i.e., utilitarian vs. hedonic) on post-adoption behaviour in the mobile data services domain.

All of the studies described focus on the consumer context, which is relevant to this study. Furneaux and Wade (2011), however, provide a theoretically well-grounded and interesting work on the topic in the organizational context. Their study investigates the factors driving and constraining the emergence of organizational intentions to discontinue the use of, or more precisely, to replace an existing information system. Three main categories of discontinuance drivers were identified: technological (i.e., declining system performance), organizational (i.e., organizational initiative aimed at altering where and how an organization operates), and environmental (i.e., technological innovation). At the same time, inertial tendencies influence the organization to maintain the status quo (i.e., system investment, system embeddedness, and institutional pressures). The results of a quantitative survey study suggest that system performance shortcomings (i.e., system capability shortcomings) and environmental change (i.e., limited availability of system support) contribute to the formation of replacement intentions, while the formation of replacement intentions is undermined by system embeddedness (i.e., the technical integration of a system).

2.2 Research on WOM Behaviour

Interpersonal WOM has long been recognized as one of the most influential channels in the marketplace. In marketing, WOM is defined as “informal communications directed at other consumers about the ownership, usage, or characteristics of particular goods and services and/or their sellers” (Westbrook, 1987, p. 261). The importance of studying WOM is underlined by findings on the effects of WOM on consumers' purchase behaviour (e.g., Arndt, 1967; Bansal and Voyer, 2000), expectations (e.g., Anderson and Salisbury, 2003) and product judgments (e.g., Herr et al., 1991; Bone, 1995). Empirical studies examining the antecedents of WOM found that the degree of (dis)satisfaction with consumption experience is the key antecedent of positive or negative WOM (Brown et al., 2005; Hennig-Thurau et al., 2002; Maxham and Netemeyer, 2002; Richins, 1983). More concretely, once WOM is generated, satisfied customers engage in positive WOM favourable to the firm (e.g., recommendations), while dissatisfied customers engage in negative WOM (e.g., reporting of unpleasant experiences, dispraise, and private complaining) (Anderson, 1998). The relevance of WOM is underlined by its persuasive effect on the WOM receiver's attitude towards a product or service (Liu, 2006).

A further analysis of the existing research shows that despite the vast empirical studies on consumer WOM, most attention has been given to the usage phase. WOM in the post-discontinuance stage has been fairly neglected. One notable exception is a study by Wangenheim (2005) that examined the negative WOM behaviour of consumers who had switched service providers in the telecommunications market. He found that one fourth of all customers engage in negative WOM about their old service provider after switching. The number of negative referrals can be explained by users' product involvement, market mavenism, perceived risk, satisfaction with the new provider and the switching reason. With regard to the switching reason (i.e., dissatisfaction vs. better deal) the results indicate that customers who switch due to dissatisfaction with the old provider are more likely to engage in negative WOM than customers who switch due to a better price of the new provider.

3 Research Model and Hypotheses Development

This study was inspired by the conceptual framework of Furneaux and Wade (2011) which includes three change factors (i.e., system-, organization-, and environment-related) that drive discontinuance intention in an organization. To be applicable in the study presented here, the change factors were considered from a consumer perspective and grounded in a theoretical basis suitable to the context. In addition, the study looks at relevant antecedents to the change factors, namely information quality, system quality, and privacy protection. Moreover, post-discontinuance satisfaction is included as a key predictor of the central dependent variable in this study, namely WOM valence. The research model and the derived hypotheses are presented below.

3.1 Post-Discontinuance Satisfaction

Considerable prior research has found that (dis)satisfaction with the previous consumption experience is a key antecedent to WOM in the context of products and services. Satisfaction refers to the favourability of the individual's subjective evaluation of any outcome and/or experience associated with consuming a product or service (Hunt, 1977). Satisfied consumers distribute positive WOM out of altruism, self-enhancement, and/or to support the company, while the dissatisfied express negative WOM out of anxiety reduction and/or vengeance (Sundaram et al., 1998; Hennig-Thurau, 2004).

In the context of this study, post-discontinuance satisfaction refers to the individual's retrospective evaluation of the previous experiences with an LBS after the use of the service has been terminated. In case of LBS, users that were satisfied with the service and discontinued, for example, due to a change in their living or working context making the LBS obsolete, may still recommend the LBS even after discontinuance in order to give others good advice, to appear technology-savvy or to support the service provider. Dissatisfied discontinuers, however, may spread negative WOM to discourage others from using the LBS. It is therefore proposed:

H1: The higher the level of post-discontinuance satisfaction, the more positive is the post-discontinuance WOM behaviour.

3.2 Decline in Service Quality

Decline in service quality refers to a user's overall perception of a decrease in the service's functional capacity. This includes performance shortcomings in terms of functionality, responsiveness, reliability which can occur as the result of system updates, or changes to related software (Furneaux and Wade, 2011). Since IS are usually developed to support a user in performing certain tasks, a decline in system performance diminishes the user's benefits from the system use and may drive discontinuance (Furneaux and Wade, 2011). In relation to LBS, a decline in service performance may be caused by faulty updates resulting, for example, in long response times, or content that is not kept up-to-date or sufficiently extended. The relevance of quality-oriented factors for the ongoing use of a system or service is highlighted in the literature related to IS success (DeLone and McLean, 1992, 2003). DeLone and McLean (1992) proposed a framework for measuring IS success that associates a high-quality system or service with more use, more user satisfaction, and positive net benefits, and a poor-quality system or service with the opposite. Thus, a decline in the perceived quality of a system or service leads to less use or even complete discontinuance, as well as a lower level of user satisfaction (DeLone and McLean, 2003). Hence, it is argued:

H2: The more service quality decline was responsible for discontinuance, the lower is the user's post-discontinuance satisfaction.

Moreover, discontinuance due to decreased service quality may also cause user reactions in the form of negative post-discontinuance WOM. Empirical studies in marketing have demonstrated that customers' perception of service quality is a relevant predictor of WOM behaviour (e.g., Bloemer et al., 1999; Boulding et al., 1993; Harrison-Walker, 2001; Zeithaml et al., 1996). For instance, Westbrook (1987) reported that negative post-purchase affects (involving anger, disgust, and contempt) felt during product usage are directly related to the amount of WOM transmitted. Moreover, Bougie et al. (2003) found that anger experienced as a result of failed service encounters is a significant predictor of switching, complaint behaviour, negative WOM, and third-party complaining. Consequently, it is argued that if a user discontinues the use of an LBS due to a perceived decline in service quality, he or she will engage in negative WOM.

H3: The more service quality decline was responsible for discontinuance, the more negative is the post-discontinuance WOM behaviour.

3.3 Change in User Needs

This factor refers to changes in the life of the user potentially causing discontinuance of a mobile service. Personal circumstances of the user may cause a change of his or her needs. If the service is not able to meet the new or modified user needs anymore, the service is prone to become obsolete.

This construct originates from the factor 'organizational initiative' in the Furneaux and Wade (2011) model. Furneaux and Wade argue that if an IS is no longer able to support an organization's goals and strategy, it is prone to discontinuance. Individual users also act in a goal-directed manner when using information systems to accomplish a certain task efficiently. Previous research has shown that LBS are mainly used for information retrieval and thus for utilitarian rather than hedonic purposes (Lehrer et al., 2011; Constantiou et al., 2014). It can be argued that when an LBS no longer supports the user in completing a certain task or fulfilling a certain need, the use of the service is terminated. Prominent causes that may change user needs are alternations in the user's living or working context. For example, when the user of a point-of-interest service moves to a different city (i.e., change of living context) he or she will want to find restaurants, bars, petrol stations and so on in the new city. If this area is not covered by the LBS, service use will be discontinued. Another example is the use of a run tracking application. When the user stops exercising altogether or changes to a new athletic activity, he or she does not need the information provided by the LBS anymore and the runner application becomes irrelevant.

However, it can be assumed that discontinuance due to a change in the user's needs may even be positively related to post-discontinuance satisfaction and WOM. This is because the user had used the service for a certain period of time, which indicates that the service worked satisfactory. Only due to changes in his or her personal context has the service become obsolete; otherwise the user may not have given up the service use at all. It can be expected that the more users blame their service discontinuance on a change in their needs and not on the service itself the more satisfied they are with the dropped LBS.

H4: The more a change in the user's needs was responsible for discontinuance, the higher is the user's post-discontinuance satisfaction.

Furthermore, it can be argued that when the cause of discontinuance was not bad service quality there is no reason for users to speak negatively about the dropped service. In fact, they may even speak positively about it and recommend it to others.

H5: The more a change in the user's needs was responsible for discontinuance, the more positive is the post-discontinuance WOM behaviour.

3.4 Attractive Alternative

This concept refers to a user's overall perception of the relative advantage of a competing mobile service offering the same or very similar functionality to the current LBS and indicates changes in the competitive environment. If the user perceives an alternative service as more attractive in the relevant characteristics, he or she is prone to give up the use of the current LBS in favour of the new service.

This discontinuance reason is derived from the factor 'environmental change' in the Furneaux and Wade model, based on the following reasoning: The authors found technological innovation to be the main environmental change influencing discontinuance in organizations. Technological innovation as a key discontinuance force is also prevalent in the mobile services market, which is marked by high competition as app stores offer an increasing amount of mobile services providing the same functionality. In combination with low switching costs, it appears reasonable that mobile users may discontinue the use of an LBS when a superior alternative is available. This may occur even though the current service functions adequately and the user's needs have not changed. The relevance of attractive alternatives for service discontinuance is further supported by findings in the switching literature, which identified alternative attractiveness as an important factor driving users to switch from one service to another (Bansal et al., 2005; Jones et al., 2000). Bansal et al. (2005) demonstrated that the attractiveness of alternatives (pull effects) and the personal inhibitors and facilitators (mooring effects) play a more important role in consumers' switching than push effects (e.g., low quality of current service).

Cognitive dissonance theory suggests that discontinuance due to an attractive alternative may result in a lower level of post-discontinuance satisfaction and more negative WOM about the dropped service. The core notion of cognitive dissonance theory, first proposed by Leon Festinger (1957), is that any discrepancy between cognitive elements (e.g., knowledge, opinions, or beliefs about the environment or oneself) is experienced as an unpleasant mental state that motivates an individual to reduce it by

applying various strategies. One major source of dissonance is decision making (e.g., a purchase decision), which causes some degree of post-decision tension within the individual. For example, dissonance may follow the decision to discontinue the use of an LBS that has served the user for a longer period of time and is then exchanged for a new one. A key strategy used to reduce post-decision dissonance is attitude spread (Wangenheim, 2005). Individuals increase the gap, or spread, between the alternatives by praising the chosen one, devaluing the other, or both (e.g., Brehm, 1956). This suggests that users who switch from an LBS in favour of a new service adapt their attitude to their decision and rate the new service higher than the old one. Thus, when evaluating their experience with the previous service from a post-discontinuance perspective, they show a lower level of satisfaction with the LBS dropped.

H6: The more an attractive alternative was responsible for discontinuance, the lower is the user's post-discontinuance satisfaction.

Another strategy often applied for dissonance reduction is spreading WOM (Festinger, 1957). By convincing others, individuals try to reinforce their switching decision. Users either spread positive WOM about the new product or service or spread negative WOM about the dropped product or service. Research by Wangenheim (2005) in the telecommunications market showed that customers who switch service providers are likely to spread negative WOM about the previous provider in order to reduce their cognitive dissonance. Based on this reasoning, the following hypothesis is proposed:

H7: The more an attractive alternative was responsible for discontinuance, the more negative is the post-discontinuance WOM behaviour.

3.5 Antecedents to Service Quality Decline and Alternative Attractiveness

According to previous studies LBS are mainly used for information retrieval and thus for utilitarian rather than hedonic purposes (Lehrer et al., 2011, Constantiou et al., 2014). Therefore, relevant features of LBS were chosen (i.e., information quality, system quality, and privacy protection) that may influence a user's overall perception of the service quality and the attractiveness of alternative mobile services. The following hypotheses suggest that a decline in these features will be associated with a perceived overall decline in service quality. At the same time, superiority in these dimensions will enhance the overall perceived attractiveness of an alternative mobile service.

3.5.1 Information Quality

In IS research, performance-oriented factors have been identified as important drivers for individuals' decisions to continue or discontinue the use of a system. For example, DeLone and McLean's (1992, 2003) IS success model highlights the importance of the overall quality of a system for its successful utilization. According to the IS success model, information quality is one of the relevant quality dimensions of a system driving its usage. Information quality refers to the desirable characteristics of the information output (DeLone and McLean, 2003). Typical measures include completeness, accuracy, timeliness, reliability, and relevance of the information provided. In relation to LBS, previous research has shown that customers require LBS to offer reliable, up-to-date and accurate information (Osman et al., 2003). A decline in LBS information quality may add to a user's perception of overall service quality decline, which consequently leads to discontinuance. For example, if the content of a point-of-interest service is not continuously updated (e.g., address and contact information of locations) or extended (e.g., as new places such as restaurants emerge), users will recognize a decline in the overall service performance of the LBS. Hence, it is proposed:

H8a: The higher the perceived information quality decline, the higher the overall perception of service quality decline.

Moreover, research found that information quality is a key attribute taken into account by potential users when making adoption decisions of new online services (e.g., Shih, 2004). Therefore, it is conceivable that when the information quality of an alternative mobile service is perceived as superior, the overall perception of the alternative attractiveness will rise.

H8b: The higher the perceived information quality of an alternative mobile service, the higher is its overall attractiveness.

3.5.2 System Quality

System quality represents another key IS quality dimension. It refers to the desirable characteristics of the IS itself and includes technical attributes such as usability, availability, reliability, adaptability, and response time (DeLone and McLean, 2003). User demands on IS have reached a rather high standard today. Thus, for many people the perceived value of a system will be low when they experience long loading and response times, system crashes, or lack of availability. The general system quality criteria just mentioned are equally applicable to LBS. Prior research has shown that seamless service performance is an important consideration for mobile services in general and for LBS in particular. For example, users require LBS to work reliably and to be easy to use (Osman et al., 2003). Therefore, the user's overall perception of the service quality may diminish, for example, when the LBS stops running stably or loads very slowly after an update. Hence, it is proposed:

H9a: The higher the perceived system quality decline, the higher the overall perception of service quality decline.

Moreover, system quality was found to significantly influence online service adoption (e.g., Shih, 2004). Therefore, it is expected that when the system quality of an alternative mobile service is perceived as superior, the overall perception of the alternative attractiveness will rise.

H9b: The higher the perceived system quality of an alternative mobile service, the higher is its overall attractiveness.

3.5.3 Privacy Protection

Privacy issues are a major concern in relation to LBS (e.g., Barkhuus, 2004; Junglas and Spitzmüller, 2005; Sheng et al., 2008; Xu and Gupta, 2009; Yuan et al., 2009). The most common definition of privacy is the one by Westin (1967, p. 7): "Privacy is the claim of individuals, groups, and institutions to determine for themselves, when, how, and to what extent information about them is communicated to others." While LBS provide the users with useful information about their surroundings or allow them to share their whereabouts with other people, they also raise serious privacy concerns. Disclosing one's location to the service provider carries with it the risk of misuse, such as movement tracking or leakage of personal information to third parties such as advertisers (Krishnamurthy and Wills, 2010). In the context of this study, it is proposed that a change in data protection policy or irresponsible handling of personal data will be condemned by users and lead to an increased perception of overall service quality decline. Hence, it is proposed:

H10a: The higher the perceived decline in privacy protection, the higher is the overall perception of service quality decline.

At the same time, when an alternative mobile service projects a higher standard of data protection policy, this may add to the overall perception of the alternative's attractiveness.

H10b: The higher the perceived privacy protection of an alternative mobile service, the higher is its overall attractiveness.

Figure 1 presents the research model derived from literature:

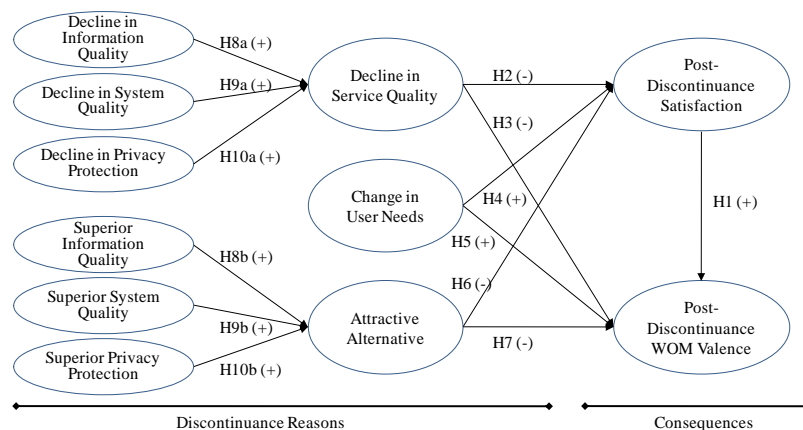


Figure 1: Research Model of LBS Discontinuance

4 Methodology

4.1 Qualitative Study

Given the field's limited understanding of the factors underlying IS discontinuance, in a first step semi-structured interviews were conducted to empirically assess the relevance of the three theoretically derived main discontinuance reasons and their antecedents in the context of mobile LBS. The second purpose was to fully capture the dimensions of each construct in order to formulate valid items for the quantitative study.

4.1.1 Data Collection and Analysis

Semi-structured interviews were conducted with 15 LBS users (8 males and 7 females, between 24 to 35 years). Based on a brief interview guideline, the participants were asked if in the past they had discontinued the use of an LBS, after a longer period of regular use, which was the case for 12 participants, and if so, why and whether they had switched to an alternative service. The discontinued LBS included point-of-interest services, radar detectors, public transportation services, car finders, sales discount finders, check-in services and navigation systems. The interview procedure was repeated until three successive interviews did not reveal any new discontinuance reasons, which allowed the assumption of informational saturation. Based on a content analytic approach (Krippendorff, 2004), each of the mentioned reasons was classified around the theoretical concepts of the proposed research model.

4.1.2 Results

When asked about the main reason for discontinuance, the majority of participants mentioned reasons related to a decline in service quality. With regard to system quality, participants stopped using certain LBS after a while as they started to crash or were too slow after an update. Others noted a decline in the service usability, for example, because the service became overloaded with advertising or was not easy to use anymore due to changes or reductions of specific features. The other half of the service-related reasons stated by the interviewees fell into the category of information quality. Respondents had discontinued the use of LBS because the content provided was not kept up-to-date or was unreliable. This is underlined by the example of one interviewee who reported that a point-of-interest service did not find the requested locations or objects (e.g., restaurants, mailboxes, supermarkets) in the surroundings, even though the user knew they were nearby. Interestingly, only one participant named privacy issues as a discontinuance reason, even though a few participants said they were concerned about their privacy when using mobile services in general and LBS in particular. The interviewee reported to check the data access permission requested by a mobile service before downloading it and before every update. If a service starts to request access to data without apparent purpose, for example to the phone's contact list, he deletes the service entirely.

Discontinuance reasons in the category of changed user needs were also identified. This category describes a change of circumstances in the life of a user that renders the LBS obsolete. First, a change in user needs may be caused when the personal situation of the user alters. This is illustrated by the statement of one respondent who stopped using a local public transportation service because he moved into the city centre and is now moving around by bike. Thus, he no longer needed information on transportation schedules. Another participant discontinued the use of a check-in service after an intensive use period, because he started working after his studies and found the service too time-consuming. Yet another respondent sold her car, which made the functionality of a radar detector dispensable. Second, the notion of learning as a discontinuance reason was also identified. For example, one participant stopped using a point-of-interest service after a longer use period, because her frequent use of the service taught her about all the relevant places over time (e.g., supermarkets, ATMs, pharmacies near her flat), eventually making the LBS redundant.

The qualitative interviews also confirmed the relevance of attractive alternatives as a discontinuance reason. In fact, some respondents appeared to specifically seek variety and were quick to switch to a new service that seemed superior. This was true even though they were not particularly dissatisfied with

the previous LBS. One participant reported switching the turn-by-turn navigation service she had been using for a long time and was very satisfied with, because a superior navigation service with additional features (e.g., 3D maps) was on sale. Another participant stopped using a point-of-interest service, one of the first services downloaded to his phone, because comparable services emerged offering higher information quality (e.g., additional descriptions of locations and user reviews).

In summary, based on the exploratory qualitative interviews, it appears that the theoretically derived tri-dimensional concept of key discontinuance factors and their respective antecedents sufficiently cover the diversity of users' discontinuance reasons. Therefore, the proposed research model provides a solid foundation for the following quantitative survey study.

4.2 Quantitative Survey

A survey instrument was developed to test the full research model. This section presents the measures used in the survey instrument and details the data collection process.

4.2.1 Measures

Validated scales were used to measure the constructs influencing the perceived service quality decline and the attractiveness of alternative mobile services (i.e., information quality, system quality and privacy), as well as post-discontinuance satisfaction and WOM valence, with the wording of the items adapted to the LBS context.

Regarding system and information quality this study adapted the measures suggested by DeLone and McLean (2003). Based on the qualitative interviews, the two most relevant dimensions of information quality were selected, namely timeliness and content reliability, as well as the four most relevant dimensions of system quality, namely stability, response time, service structure and ease of use. A factor analysis showed that system quality comprised two distinct groups: system accessibility (stability and response time) and system usability (service structure and ease of use). Privacy was measured with two items adapted from Xu and Gupta (2009). To measure post-discontinuance satisfaction, three items from Bhattacharjee (2001) were applied. Respondents were asked to think about their previous experience with the LBS stated and indicate their evaluation of the service in question. All items were measured with seven-point Likert scales anchored between 1= "strongly disagree" and 7= "strongly agree," with the exception of post-discontinuance satisfaction and WOM valence, which were measured on a seven-point semantic differential scale. The Appendix includes Table 4 presenting details about the constructs and the items used.

Post-discontinuance WOM valence was operationalised using a single-item scale adapted from de Matos and Rossi (2008), ranging from 1= "very negative" to 7= "very positive". The construct expresses how negatively or positively a user talks about an LBS after having discontinued its use. It was not further differentiated between whether the user expressed his or her opinion offline or online, as the valence is expected to be the same for both types of WOM. Furthermore, participants were asked whether they had actually engaged in post-discontinuance WOM or not. Those who had engaged in WOM were asked about their actual WOM valence, while the others were asked about their intended WOM valence if they were to express their opinion about the LBS.

A pre-test was administered to ensure that all of the items were understood as intended. Eight researchers and six users who possessed smartphones and used LBS regularly were recruited. Based on their comments, some of the initially generated items were refined to increase their intelligibility and eliminate possible misunderstanding.

4.2.2 Data Collection

Data collection was conducted via an online questionnaire. The link to the questionnaire was distributed to undergraduate and graduate students of a major university in Germany via a university mailing list. Additionally, the survey was advertised in two major online social networks. Germany provides a good context for this study, as it is one of the most advanced mobile telecommunications markets in Europe.

In the data collection process, respondents were first asked two screen-out questions, i.e. whether they use a smartphone and whether they download mobile services (apps). Participants who met these

criteria were given a definition of LBS and a list of LBS categories. For each LBS category they were asked if there was at least one specific service that they had used regularly over a longer period of time but have stopped using. Respondents who had discontinued the use of an LBS in at least one service category were then asked to state, in an open question, the name of the LBS they had discontinued. Next, respondents received personalized survey questions that integrated the name of the LBS stated. These questions were about their usage of the particular LBS (e.g., use duration, use frequency, purpose of use) as well as the different possible discontinuance reasons. Users were asked to state the extent to which they agree that the different discontinuance reasons were responsible for their termination of service use. Further questions targeted the users' WOM behaviour. The questionnaire ended with questions about involvement with mobile services in general and demographics.

A total of 439 respondents successfully passed the screen-out questions, i.e. were smartphone users downloading mobile services. However, 325 of the respondents had to be excluded because they had not discontinued the use of an LBS after a longer period of regular use. These respondents were either still actively using all LBS on their phone or had not used any LBS in the first place. After this first data cleansing 114 respondents remained. A second validation of the data led to the elimination of another 4 responses, because those participants had used the discontinued LBS for less than a week, and only once during this time period. Thus, they were perceived as trial users instead of experienced and continuous users of the particular LBS before their discontinuance decision. Consequently, they did not belong to the target group of this survey. As a result, 110 usable responses formed the final sample.

To investigate possible nonresponse bias, the procedure proposed by Armstrong and Overton (1977) was conducted to compare the demographic profiles and indicators of key constructs between the early respondents (first quarter of the sample to answer) and late respondents (last quarter of the sample to answer). A series of t-tests did not show any significant differences between the early and late respondents, suggesting that if there is any nonresponse bias, it would be minimal.

The final sample comprised of 37% women and 63% men. The age of respondents ranged from 14 to over 49 years. The majority of participants were in their twenties (58%), followed by participants in their thirties (24%). 17% were between 14 and 19 years old, and only 1% were in their forties. The reported level of education was 3% with a secondary education qualification, 52% with a high school degree, and 45% with a university or college degree. The majority of participants were pupils, students, or apprentices (63%), while others were employed (28%), self-employed or freelancers (8%), and retired or unemployed (1%). This sample is not representative of German mobile service users, but it represents the main target group of mobile services.

When asked about the LBS used for a longer period of time and then discontinued, nearly one third of the participants named point-of-interest services, followed by public transportation planners, maps and navigation services, local weather services, friend finders, radar detectors, and traffic monitors, in this order. The remaining apps were sports trackers and travel guides. *Point-of-interest services* were used for the purpose of finding physical locations (e.g. restaurants, bars, banks, post offices, pharmacies) and events in the proximity or in unfamiliar cities. *Public transportation planners* allowed the users to retrieve arrival and departure times as well as the closest stop/station. *Maps and navigation services* provided information about the users' current position and precise navigation instructions while on the move. *Local weather services* informed the users about local weather conditions, automatically personalized for where the user was located at the time of the request. *Friend finders* notified the users if their friends were within a certain vicinity providing information about the movements of their social circle as well as allowing users to check in to certain places (e.g. restaurants). *Radar detectors* were used to warn about speed controls. *Traffic monitors* informed the users if there was high traffic on the highways. *Sports trackers* allowed the automatic recording of routes and the users' performance during activities such as running. *Travel guides* were mainly used to find sights in a new city.

The majority of the participants had been using the LBS stated for 1 to 12 months. In general, the use frequency during the usage period was rather high, with 14% using the LBS at least once per day on average, 31% several times per week, 17% once per week, and 16% several times per month. The rest used the LBS less often. When asked about their WOM behaviour, 30% of the respondents had actually engaged in WOM after discontinuing the use of the service, while the rest did not. In both groups post-discontinuance WOM was rather negative, with a mean of 3.32 in the actual WOM group and 3.52 in

the intended WOM group. A t-test was used to investigate whether the mean of WOM valence was significantly different in the two groups. As no significant difference was found, both groups were included in the data analysis.

5 Data Analysis and Results

To test the research model and the structural relationships proposed in Figure 1, the partial least squares (PLS) data analysis technique was applied, using SmartPLS 2.0 (Ringle et al., 2005). PLS was chosen because of its robustness with regard to assumptions and requirements for data analysis as well as its ability to model latent constructs in small to medium-sized samples (Chin, 1998).

5.1 Measurement Reliability and Validity

The investigated model is reflective, so the latent variables are operated by the measurement models and explain the indicators. The quality of the measurement models was estimated with composite reliability and both convergent and discriminant validity.

5.1.1 Convergent Validity

Convergent validity is achieved when measurement items exhibit significant loadings on their respective latent constructs. The t-values were estimated using a non-parametric bootstrapping procedure. As shown in Table 1 in the Appendix, all items have significant loadings (loadings uniformly over 0.70 at a significance level of $\alpha = 0.05$) (Chin, 1998). Further, all of the measures fulfil the recommended level concerning average variance extracted (AVE) with values at 0.65 or above. The composite reliability (CR) values are at 0.85 or above and thus exceed the suggested threshold of 0.70 (Fornell and Larcker, 1981).

5.1.2 Discriminant Validity

Discriminant validity describes whether the items measure the construct in question or other constructs in the model. Discriminant validity is assessed by investigating the latent construct correlations and the square root of their respective AVE. Table 2 in the Appendix displays the square root of the AVE for each construct (boldface on the diagonal) and also the correlation between constructs. The data suggest that the square root of the AVE for each construct is much larger than the correlation of the specific construct with any of the other constructs in the model (Fornell and Larcker, 1981). Thus, discriminant validity of the measures can be assumed. Furthermore, an assessment of the discriminant validity of the scales using the cross-loading method (Chin, 1998) found that the item loadings on the corresponding constructs were all much higher than the loadings of the items used to measure the other constructs. Table 3 in the Appendix reports the loadings and cross-loadings of all reflective measures in the model.

5.2 Structural Model Test and Results

The significance of the path coefficients in the model was estimated using the bootstrapping algorithm of SmartPLS. On this basis, a t-test was carried out to determine the significance of the path coefficients between the latent endogenous and the latent exogenous variables.

Figure 2 illustrates the path coefficients of the structural model and R^2 values. The results show that the model accounts for 41.5% of the variance in post-discontinuance WOM valence, 16.7% in post-discontinuance satisfaction, 45.5% in decline in service quality and 59.6% in alternative attractiveness. Turning to the antecedents of service quality decline, it can be noted that, contrary to the hypotheses, not all of the path coefficients are significant. While a decline in information quality (0.32; $t = 3.00$), system accessibility (0.32; $t = 3.58$) and system usability (0.23; $t = 2.39$) are strong antecedents to the overall perception of service quality decline, a decline in privacy (-0.06; $t = 1.09$) has no significant effect. Similar results were found in relation to the overall alternative attractiveness. Here, a high information quality (0.43; $t = 3.73$) and system usability (0.24; $t = 2.12$) positively affect the overall attractiveness of an alternative mobile service. Contrary to the hypotheses, system accessibility (0.17; $t = 1.65$) and privacy (0.10; $t = 1.24$) do not add to the alternative attractiveness.

With regard to post-discontinuance satisfaction, the results indicate that the more participants agreed that an attractive alternative mobile service was accountable for their discontinuance, the less satisfied they were with the discarded LBS (-0.22; $t = 2.76$). Furthermore, there is a significant positive relationship between the change in user needs as the main discontinuance reason and post-discontinuance satisfaction (0.16; $t = 2.00$). Interestingly, a decline in service quality had no significant relationship to post-discontinuance satisfaction, but had a rather strong direct effect on post-discontinuance WOM valence (-0.27; $t = 2.94$). This means that the more a decline in service quality was accountable for discontinuance, the more negative the post-discontinuance WOM behaviour. Neither of the other two constructs (i.e., change in user needs, attractive alternative) had a direct effect on post-discontinuance WOM valence. As hypothesized, post-discontinuance satisfaction had a significant positive effect on WOM valence (0.51; $t = 5.33$) and in fact exerted the strongest impact. Furthermore, demographics (i.e. age, gender), usage of the particular LBS before discontinuance (i.e., use duration, use frequency) as well as involvement in mobile services were added as control variables for post-discontinuance satisfaction and post-discontinuance WOM valence. However, none of them had statistically significant effects on both criteria.

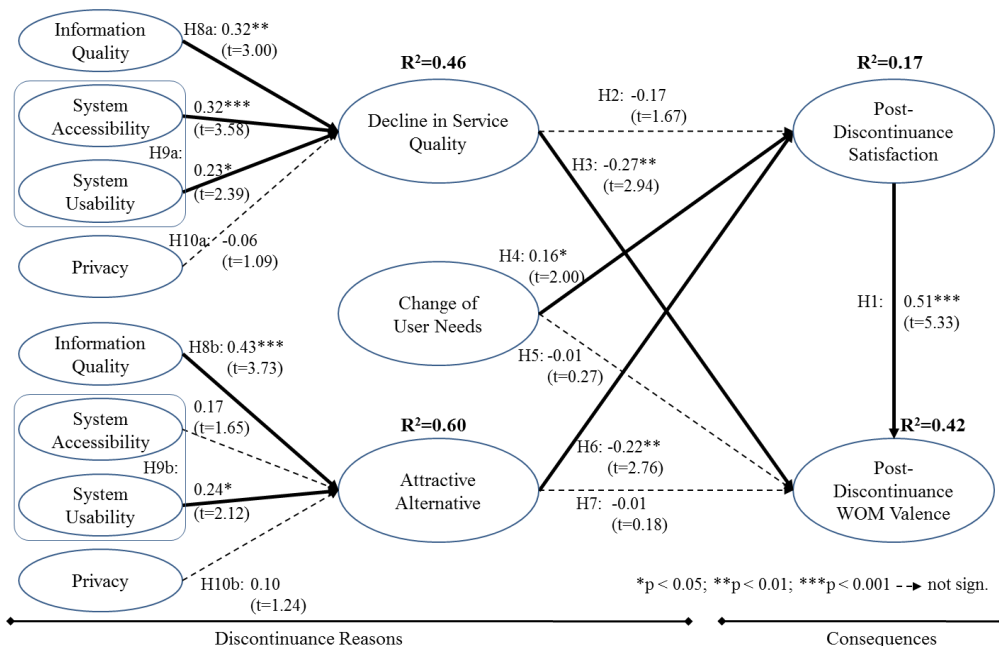


Figure 2: Model of LBS Discontinuance and WOM Behaviour

6 Discussion

The focal point of this article is the investigation of the largely neglected issue of IS discontinuance and its consequences. This study contributes to our general understanding of IS discontinuance in two ways. First, a well-grounded categorization of three key discontinuance reasons is proposed (i.e., service quality decline, change in user needs, and attractive alternative). In this article, these discontinuance reasons were examined with regard to mobile LBS; however, due to their generality the reasons may also be transferable to other IS contexts. Second, compared to existing research this study does not stop at investigating the antecedents of IS discontinuance, but focuses on the consequences of discontinuance.

In order to investigate the relationship between the discontinuance reasons and WOM a research model was derived from literature and tested via a large-scale cross-sectional survey of LBS users in Germany. Results of this study suggest that the user's level of post-discontinuance (dis)satisfaction is the most salient factor driving post-discontinuance WOM behavior. As hypothesized, satisfied customers have a tendency to speak positively about a dropped LBS, while dissatisfied customers have a tendency to speak negatively. This is in line with prior findings that regard (dis)satisfaction as the key antecedent of positive or negative WOM.

What is interesting, however, is that WOM behavior can also be triggered directly by the primary cause for discontinuance. The findings show that a decline in service quality is the most salient discontinuance reason impacting negative WOM behavior. An interesting observation is that contrary to the theoretically postulated hypothesis, a decline in service quality is not significantly associated with a lower level of post-discontinuance satisfaction. It appears that when WOM behavior is included as a dependent variable in the research model alongside satisfaction, it absorbs the influence of service quality decline on satisfaction. Since service quality decline plays such a crucial role in the creation of negative WOM, it is insightful to look further at its antecedents. The results show that a decline in information quality, system accessibility and system usability have the strongest influence.

Moreover, the results highlight the relationship between the key discontinuance reasons and the level of post-discontinuance satisfaction, which represents an attitudinal consequence of discontinuance. The findings indicate that the more an attractive alternative was involved in the discontinuance decision, the less satisfied the users were with the dropped LBS. Interestingly, the attractiveness of an alternative is positively influenced by its perceived information quality and system usability, which are related to perceived usefulness and ease of use in the Technology Acceptance Model by Davis (1989). Last but not least, users who discontinue due to a change in their needs have a rather favorable attitude towards the dropped LBS and show a significantly higher level of satisfaction. However, no significant correlation could be found to their WOM valence.

Fruitful areas for additional research would be to explore to what extent the findings can be generalised to other digital services. Moreover, based on previous findings this study assumed and confirmed that LBS are primarily used for information retrieval and thus utilitarian rather than hedonic purposes. However, as LBS get increasingly integrated as a feature into mobile services and devices primarily used for entertainment, the relevance of declining hedonic value for discontinuance should be examined. Furthermore, this study used a cross-sectional approach to capture the different discontinuance reasons and their effects on post-discontinuance WOM behaviour and satisfaction. An ideal empirical design for testing the proposed model would be a longitudinal study, examining user perceptions and behaviour from the actual usage phase through to the post-discontinuance phase. Interesting issues such as changes in service quality, user needs, and the emergence of alternatives could be examined, as well as their interrelationships with WOM and satisfaction.

Appendix

Table 1: Latent Variables Quality Metrics				
Reflective constructs	Items	Loading	Stand. errors	t-value
Decline in service quality				
Decline in information quality CR=0.89; AVE=0.80	INFQUAL1	0.87	0.05	16.76
	INFQUAL2	0.92	0.02	53.26
Decline in system accessibility CR=0.90; AVE=0.82	SYSTACC1	0.91	0.03	33.17
	SYSTACC2	0.90	0.04	24.55
Decline in system usability CR=0.88; AVE=0.79	SYSTUSA1	0.91	0.03	28.10
	SYSTUSA2	0.86	0.06	15.26
Decline in privacy protection CR=0.87; AVE=0.78	PRIVACY1	0.99	0.20	4.99
	PRIVACY2	0.75	0.19	3.85
Overall service quality decline CR=0.85; AVE=0.66	OVERALL1	0.87	0.03	27.44
	OVERALL2	0.78	0.06	13.72
	OVERALL3	0.79	0.05	14.73
Attractive alternative				
Superior information quality CR=0.94; AVE=0.89	INFQUAL_ALT1	0.94	0.02	59.53
	INFQUAL_ALT2	0.95	0.01	70.95
Superior system accessibility CR=0.92; AVE=0.86	SYSTACC_ALT1	0.93	0.02	50.56
	SYSTACC_ALT2	0.92	0.03	31.39
Superior system usability CR=0.95; AVE=0.91	SYSTUSA_ALT1	0.95	0.02	60.99
	SYSTUSA_ALT2	0.95	0.01	75.07
Superior privacy protection CR=0.98; AVE=0.96	PRIVACY_ALT1	0.97	0.07	13.81
	PRIVACY_ALT2	0.98	0.06	15.32
Overall alternative attractiveness CR=0.96; AVE=0.89	OVERALL_ALT1	0.96	0.01	74.72
	OVERALL_ALT2	0.95	0.01	84.25
	OVERALL_ALT3	0.92	0.02	51.49
Change in user needs				
Overall change in user needs CR=0.85; AVE=0.65	NEED1	0.76	0.14	5.27
	NEED2	0.91	0.10	8.75
	NEED3	0.75	0.15	4.90
Post-discontinuance satisfaction				
Post-discontinuance satisfaction CR=0.90; AVE=0.74	PDSAT1	0.87	0.03	28.66
	PDSAT2	0.93	0.01	62.15
	PDSAT3	0.78	0.05	14.25

Table 2: Latent Variable Correlation Matrix

	INFQUAL	SYSTACC	SYSTUSA	PRIVACY	OVERALL	INFQUAL_ALT	SYSTACC_ALT	SYSTUSA_ALT	PRIVACY_ALT	OVERALL_ALT	NEED	PDSAT
INFQUAL	0,89											
SYSTACC	0,43	0,91										
SYSTUSA	0,43	0,38	0,89									
PRIVACY	0,01	0,03	0,01	0,88								
OVERALL	0,57	0,52	0,45	-0,05	0,81							
INFQUAL_ALT	0,51	0,41	0,40	-0,07	0,55	0,94						
SYSTACC_ALT	0,34	0,66	0,45	-0,07	0,54	0,66	0,93					
SYSTUSA_ALT	0,28	0,34	0,69	-0,12	0,48	0,68	0,73	0,95				
PRIVACY_ALT	0,10	0,13	0,17	0,79	0,08	0,11	0,09	0,07	0,98			
OVERALL_ALT	0,29	0,37	0,40	-0,02	0,45	0,71	0,63	0,67	0,15	0,94		
NEED	-0,19	-0,06	-0,16	-0,12	-0,20	-0,13	-0,18	-0,19	-0,04	-0,17	0,81	
PDSAT	-0,31	-0,19	-0,33	-0,25	-0,25	-0,42	-0,26	-0,30	-0,30	-0,35	0,29	0,86

Table 3: Loadings and Cross-Loadings for Reflective Measures

	INFQUAL	SYSTACC	SYSTUSA	PRIVACY	OVERALL	INFQUAL_ALT	SYSTACC_ALT	SYSTUSA_ALT	PRIVACY_ALT	OVERALL_ALT	NEED	PDSAT
INFQUAL1	0,87	0,30	0,37	0,00	0,44	0,44	0,25	0,22	0,07	0,24	-0,09	-0,21
INFQUAL2	0,92	0,46	0,40	0,01	0,59	0,48	0,35	0,28	0,10	0,27	-0,25	-0,32
SYSTACCI	0,33	0,91	0,30	0,02	0,50	0,35	0,60	0,31	0,11	0,35	-0,10	-0,16
SYSTACC2	0,47	0,90	0,39	0,03	0,46	0,40	0,61	0,31	0,13	0,32	0,00	-0,18
SYSTUSAI	0,47	0,37	0,91	-0,01	0,42	0,39	0,39	0,62	0,10	0,32	-0,18	-0,29
SYSTUSA2	0,29	0,29	0,86	0,04	0,36	0,30	0,40	0,59	0,20	0,38	-0,11	-0,29
PRIVACY1	0,02	0,08	0,02	0,99	-0,04	-0,08	-0,05	-0,10	0,62	0,00	-0,16	-0,14
PRIVACY2	0,00	-0,01	0,01	0,75	-0,06	-0,05	-0,08	-0,12	0,73	-0,02	-0,06	-0,29
OVERALL1	0,44	0,37	0,43	0,00	0,87	0,46	0,39	0,44	0,16	0,39	-0,10	-0,20
OVERALL2	0,27	0,31	0,40	0,06	0,78	0,37	0,46	0,45	0,21	0,35	-0,04	-0,13
OVERALL3	0,62	0,54	0,29	-0,14	0,79	0,48	0,48	0,32	-0,10	0,35	-0,29	-0,26
INFQUAL_ALT1	0,49	0,39	0,37	-0,05	0,53	0,94	0,64	0,60	0,14	0,67	-0,12	-0,39
INFQUAL_ALT2	0,47	0,38	0,37	-0,08	0,51	0,95	0,61	0,68	0,08	0,67	-0,14	-0,41
SYSTACC_ALT1	0,33	0,68	0,32	-0,05	0,50	0,64	0,93	0,63	0,09	0,59	-0,14	-0,26
SYSTACC_ALT2	0,29	0,54	0,51	-0,08	0,49	0,57	0,92	0,71	0,07	0,57	-0,19	-0,22
SYSTUSA_ALT1	0,35	0,40	0,66	-0,11	0,52	0,72	0,70	0,95	0,08	0,63	-0,21	-0,36
SYSTUSA_ALT2	0,19	0,25	0,64	-0,11	0,39	0,56	0,67	0,95	0,04	0,63	-0,15	-0,22
PRIVACY_ALT1	0,07	0,11	0,18	0,77	0,03	0,08	0,08	0,06	0,97	0,13	-0,04	-0,28
PRIVACY_ALT2	0,12	0,15	0,15	0,77	0,11	0,14	0,09	0,07	0,98	0,15	-0,02	-0,31
OVERALL_ALT1	0,18	0,28	0,33	-0,03	0,35	0,61	0,59	0,63	0,14	0,96	-0,12	-0,29
OVERALL_ALT2	0,20	0,30	0,34	-0,01	0,37	0,64	0,56	0,66	0,15	0,95	-0,16	-0,32
OVERALL_ALT3	0,41	0,44	0,44	0,00	0,53	0,74	0,63	0,60	0,12	0,92	-0,17	-0,37
NEED1	-0,11	-0,01	-0,05	-0,02	-0,02	-0,04	-0,05	-0,02	0,12	-0,08	0,76	0,17
NEED2	-0,22	-0,07	-0,20	-0,14	-0,27	-0,17	-0,21	-0,25	-0,11	-0,16	0,91	0,32
NEED3	-0,02	-0,03	-0,04	-0,15	-0,10	0,02	-0,13	-0,14	-0,07	-0,20	0,75	0,05
PDSAT1	-0,33	-0,24	-0,30	-0,27	-0,19	-0,33	-0,19	-0,21	-0,27	-0,26	0,23	0,87
PDSAT2	-0,30	-0,18	-0,33	-0,19	-0,33	-0,42	-0,24	-0,30	-0,22	-0,32	0,27	0,93
PDSAT3	-0,13	-0,06	-0,19	-0,18	-0,12	-0,33	-0,24	-0,26	-0,29	-0,31	0,26	0,78

Table 4: Measurement scales			
Constructs	Indicators		Source
Decline in Service Quality: I discontinued the use of (LBS stated) because...			
Decline in Information Quality	INFQUAL1	...the information provided wasn't up-to-date anymore.	Adapted: DeLone and McLean (2003)
	INFQUAL2	...the information provided wasn't reliable anymore.	
Decline in System Accessibility	SYSTACC1	...the service didn't run stably anymore.	Adapted: DeLone and McLean (2003)
	SYSTACC1	...the service didn't respond quickly anymore.	
Decline in System Usability	SYSTUSA1	...the service wasn't well organized anymore.	Adapted: DeLone and McLean (2003)
	SYSTUSA2	...the service wasn't easy to use anymore.	
Decline in Privacy Protection	PRIVACY1	...the service provider changed its data protection policy.	Adapted: Xu and Gupta (2009)
	PRIVACY2	... I was afraid that the service provider would pass on my personal data to third parties.	
Overall Service Quality Decline	OVERALL1	...the overall quality of the service declined.	Developed by author
	OVERALL2	...I didn't like the last update(s).	
	OVERALL3	...the service didn't work well anymore.	
Attractive Alternative: I discontinued the use of (LBS stated) because...			
Superior Information Quality	INFQUAL_ALT1	...the information provided by an alternative mobile service was more up-to-date.	Adapted: DeLone and McLean (2003)
	INFQUAL_ALT2	...the information provided by an alternative mobile service was more reliable.	
Superior System Accessibility	SYSTACC_ALT1	...an alternative mobile service ran more stably.	Adapted: DeLone and McLean (2003)
	SYSTACC_ALT1	...an alternative mobile service responded more quickly.	
Superior System Usability	SYSTUSA_ALT1	...an alternative mobile service was better organized.	Adapted: DeLone and McLean (2003)
	SYSTUSA_ALT2	...an alternative mobile service was easier to use.	
Superior Privacy Protection	PRIVACY_ALT1	...an alternative mobile service provider had a better data protection policy.	Adapted: Xu and Gupta (2009)
	PRIVACY_ALT2	...an alternative mobile service provider wouldn't pass on my personal data to third parties.	
Overall alternative attractiveness	OVERALL_ALT1	...I found a more useful alternative mobile service.	Developed by author
	OVERALL_ALT2	...I liked an alternative mobile service better.	
	OVERALL_ALT3	...an alternative mobile service worked better.	
Change in User Needs: I discontinued the use of (LBS stated) because...			
Change in User Needs	NEED1	...my personal situation changed.	Developed by author
	NEED2	...I didn't have a need for the service anymore.	
	NEED3	...the functionalities of the service were not useful to me anymore.	
Post-Discontinuance Satisfaction: Looking back, how do you feel about your overall experiences with the service used (semantic differential scale):			
Post-Discontinuance Satisfaction	PDSAT1	Very dissatisfied / Very satisfied	Bhattacharjee (2001)
	PDSAT2	Very displeased / Very pleased	
	PDSAT3	Absolutely terrible / Absolutely delighted	
Post-Discontinuance WOM Valence			
Post-Discontinuance WOM Valence	PDWOM	Since I stopped using (LBS stated), my expressed opinion about the service has been/would be... Very negative / Very positive	de Matos and Rossi (2008)

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