A mixed method investigation of sharing economy driven car-hailing services: Online and offline perspectives

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\textbf{ABSTRACT}

This exploratory research investigates factors affecting online and offline service quality with respect to a sharing economy driven car-hailing commerce. It further validates the relationships between service quality, satisfaction, and loyalty in the sharing economy driven business context. Building on relevant literature and 71 qualitative interviews, we identified information congruency, competence, and empathy as key factors in online service quality. Offline service quality factors include structural assurance and platform responsiveness. These five factors were included in a model for user loyalty investigation, which was tested on data from 294 questionnaires from Chinese mobile car-hailing service users. Attitudes towards the sharing economy were validated to moderate the relationship between service quality and loyalty. This study contributes to the theoretical development of service quality management, specifically in the context of emerging sharing economy driven car-hailing mobile markets.

\section{Introduction}

Originating from collaborative consumption, the sharing economy provides an economic-technological way for companies to reform, while bringing about new challenges for business model innovation (Belk, 2014). The sharing economy is defined as “peer-to-peer-based activity of obtaining, giving, or sharing the access to goods and services, coordinated through community-based online services” (Hamari, Sjöklint, & Ukkonen, 2016). Fuelled by information technology, peer-to-peer sharing activities facilitate interactions between peers and support value co-creation from the untapped potential of the possessions that are under-utilized by the owners (Belk, 2014; Hamari et al., 2016). Similar to traditional electronic markets, common types of resources include physical and nonphysical goods and services that are available in sharing economy based online platforms (Cheng, Fu, & Yin, 2017; Gordon, 2012). In this paper, we focus specifically on non-physical services shared through mobile commerce platforms.

The sharing economy is characterised by the blurring of lines between what used to be amateurs and professionals. Since service providers are not always professionally trained employees in sharing economy driven platforms, concepts regarding traditional service management have been challenged (Zervas, Proserpio, & Byers, 2017). For example, mobile ride-hailing is a typical business model adaptation driven by the sharing economy, which supports ride sharing services through mobile devices. During the process of riding services, several steps are conducted online, including reservation, electronic payment, and user reviews. The offline service starts when drivers pick up passengers in their personal cars. Thus, service management on sharing economy driven mobile ride-hailing covers two types of service: online e-services from the platform and offline services while riding in a car.

Up to now, there is a growing body of literature that recognizes the importance of service quality. Previous research on service is typically associated with website quality in electronic commerce (Chang & Chen, 2009; Liu & Arnett, 2000), platform responsiveness and assurance (Hartono, Holsapple, Kim, Na, & Simpson, 2014; Nathan, 2014), retail brands for online dealers (Das, 2014), or service content and delivery in e-government (Tan, Benbasat, & Cenfetelli, 2013). However, such studies focus merely on online services or offline services. To our best of knowledge, there are limited investigations that address online and offline service simultaneously (Pearson, Tadisina, & Griffin, 2012). Moreover, peer-to-peer marketplaces are different from traditional business settings since the offline service providers are amateurs in the sharing economy-driven platforms. Curiosity is widely proposed as an influencing factor of an individual’s motivation to utilize a sharing economy driven platform (Davidson, Habibi, & Laroche, 2018). However, it will be interesting to research whether users will remain loyal to...
the service once the feeling of freshness fades. Given the practical implication of service quality on user loyalty (Yang, Lu, Chau, & Gupta, 2017), and the lack of comprehensive studies to understand the influencing mechanisms in the sharing economy online-to-offline context, there is a need to conduct research on the issue of service quality on user loyalty in this new context.

Thus, based on the research gaps above, our research questions are as follows: (1) What are the influencing factors for online and offline service quality respectively? (2) How can service quality improve customer loyalty in the sharing economy driven online-to-offline context? To answer these questions, we use a mixed method approach comprised of qualitative and quantitative investigations. Specifically, we focus on the peer-to-peer marketplace for city transportation that includes both online and offline services during the car-hailing business.

The remainder of this paper is organized as follows: the next section provides the theoretical background of our research and a presentation of the study’s hypotheses are presented, followed by methodology and research design in the fourth section. Then we report on the data analysis results. Finally, we conclude with a discussion of the implications of our findings and directions for future research.

2. Theoretical background and hypotheses

2.1. Sharing economy

Sharing is a form of social exchange that is free or of very limited charge (Eckhardt & Bardhi, 2015). Information technology has brought out many innovations for sharing in the digital world. Evolving from peer-to-peer lending, swapping and donating, the sharing economy is an emerging economic-technological phenomenon that enables access over ownership (Hamari et al., 2016).

The sharing economy affords several perspectives including online interaction, social commerce features and ideological considerations (Hamari et al., 2016). The emergence of peer-to-peer marketplaces has enabled individuals’ collaborative consumption of under-utilized inventory (Zervas et al., 2017). Service providers have less market entry barriers, thus individuals can register as service providers easily. Service providers do not need to be the certificate holders from the government. Moreover, platforms also allow flexibility for individuals adjust their work hours and the availability of their services. Thus, the service provided by the sharing economy is non-standard and diversified.

Another hallmark of sharing economy driven platforms lies in the offline social interactions of the providers and consumers, and the entertainment attained from the offline services. Many online sharing economy platforms often label themselves as an emerging social service by connecting strangers together. As the nature of social exchange in the context of the sharing economy driven mobile markets, the requirement for service quality differs from what it is in traditional online markets.

Unlike traditional mobile commerce platforms, sharing economy driven services include online and offline activities to get the business done. Thus, our study extends the line of work on service quality in the new context, and addresses service management from both online and offline perspectives. Second, by addressing the new features of the sharing economy, we set out to investigate the influence of service quality on user loyalty in sharing economy driven platforms.

2.2. Service quality

Service quality refers to the results of comparing service expectation and experienced services (Parasuraman, Zeithaml, & Berry, 1988). Previous literature investigated service quality from many perspectives. The most widely applied instrument for service quality is SERVQUAL (Parasuraman et al., 1988), which states that service quality can be explained through five dimensions, including reliability, assurance, tangibles, empathy and responsiveness. Many studies validated the importance of the aforementioned factors on service quality. These studies proposed that situational settings may influence the factors of service quality as well and raised questions on whether these service quality dimensions were available in different research backgrounds (e.g. Lee & Lin, 2005; Kuo, Wu, & Deng, 2009). For example, SERVQUAL does not mention e-service quality and just focuses on the interpretation of business to customer relationships (Tan et al., 2013; Xu, Benbasat, & Cenfetelli, 2013).

In service quality research in electronic commerce, e-service quality is comprised of the following dimensions: website design (Hahn, Sparks, Wilkins, & Jin, 2017), information quality (Xu et al., 2013), and interface interactivity (Ku & Chen, 2015). According to literature review of e-service quality in the e-retailing industry (Collier & Bienstock, 2006), the dimensions of e-service quality were extended to include the delivery of the desired product or service, online process quality including functionality, information accuracy, design, privacy and ease of use, and service failure recovery. Taken together, there still is a lack of studies that focus on service quality dimensions in customer-to-customer (C2C) relationships. Given our focus on service quality of car-hailing services in sharing economy driven mobile commerce markets, the service providers are the registered drivers through the platform and the business relationship is C2C in nature. Thus, the current investigations on service quality might be challenged. In addition, mobile commerce enables transactions conducted in both online and offline settings. Yet, to the best of our knowledge, there are currently few studies that investigate online offline service simultaneously, which indicates another research opportunity for our study.

2.3. User loyalty and retention

User loyalty refers to individuals’ affective and cognitive commitment towards a service and reflects their dedication towards a service (Kim & Son, 2009). A customer’s continuous intention or behavior has always been an indicator of success (Salanova, Agut, & Peiró, 2005). Management and psychological theories of attitude formation and changes support the roles of service quality and satisfaction in shaping users’ loyalty (Baldi & Thaug, 2002; Harris, Rettie, & Cheung, 2005; Xu et al., 2013). For example, according to expectancy-disconfirmation theory, post adoption satisfaction is a function of expectations, perceived performance, and disconfirmation of beliefs (Hossain & Quaddus, 2012). Specifically in the context of sharing economy driven car-hailing mobile commerce, if the service outperforms expectations (positive disconfirmation), post-purchase satisfaction is likely to result, thus leading to user loyalty. Moreover, based on the theory of planned behavior, attitude towards behavior, subjective norms, and perceived behavioral control, together shape an individual’s behavioral intentions and ultimate behavior (Liao, Liu, Liu, To, & Lin, 2011; Wang & Chang, 2014; Yen & Lu, 2008).

Based on the theoretical lens and existing literature, user service, satisfaction, and loyalty are three frequently investigated constructs when investigating post usage behaviors. Service quality was proposed to directly influence loyalty, and satisfaction was validated to be a mediator between service quality and loyalty (Caruana, 2002; Orel & Kara, 2014). The positive relationship between satisfaction and user loyalty was validated in various studies in different contexts (Kumar, Dalla Pozza, & Ganesh, 2013; Lee, Moon, Kim, & Mun, 2015; Walsh, Evanschitzky, & Wunderlich, 2008), where some studies even proposed that satisfaction was the strongest indicator of loyalty intention (Zhao, Lu, Zhang, & Chau, 2012).

The relationships between these constructs have been extended and modified in various research contexts. For example, trust and commitment were proposed to interact with satisfaction for the relationship perceptions in business to business partnerships (Caceres & Paparoidamis, 2007). Switching cost and alternative attractiveness were validated to correlate with loyalty in retailer industry (Ghazali,
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