Mine is yours? Using sentiment analysis to explore the degree of risk in the sharing economy

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A B S T R A C T

The sharing economy is a new business model of e-commerce that stimulates new thinking in different ways. However, security and privacy are the most critical problems in the sharing economy. Stakeholders in this area need to build trust through online reviews. It may be risky when most people make decisions by reading fewer reviews. This research considers the emotions of comments in online reviews, and discovers the positive-negative sentiment ratio based on sentiment analysis. The sentiment ratio matches the level of risk, and customers view it as being suitable decision-making. The results suggest that the selected rankings were different between the base sentiment ratio and the rating stars for accommodations. In addition, different generation customers may make different decisions when they are shown pictures, room information, and the sentiment ratio for online reviews. Generation Z (under 20) and Generation Y (21–34) paid more attention to reviews, cost, and cleanliness. Generation X (35–49) paid attention to cleanliness, reviews, and total stars. The three generations all indicated the importance of online reviews for decision-making. On the other hand, high-risk people are more likely to be affected by the negative reviews, and make different decisions.

1. Introduction

Economic shocks, the pursuit of sustainable development, and mobile technology have resulted in the emergence of a new business model called the sharing economy. The sharing economy is unique in that its products and tangible assets, such as money, land, and time, are not owned, but are rather rented, traded, shared, bartered, or gifted using technology (Botsman and Rogers, 2010). According to the U.K. company JustPark's statistics on different kinds of sharing economy companies around the world, there are currently five types of actions that sharing economy firms are involved with: borrowing, buying, hiring someone, sharing, and swapping. The most common one is borrowing, with 339 such firms, including Zipcar and Airbnb. In 2015, the scale of the sharing economy was US$15 billion and it is expected to reach US$335 billion by 2025 (PwC, 2015).

The rental business model has challenged traditional thinking, and information technology (IT), serving as the core of the sharing economy, has positive and negative impacts on a variety of business sectors. However, from another perspective, security and privacy are the most critical issues. If a consumer rents a stranger’s room via the Internet from Airbnb, he is restricted to looking at photos and reading the descriptions provided by the property owner. Thus, although the sharing economy has many benefits, there are still many risks to overcome.

With technological advances, the openness and opportunities for participation provided by Web 2.0 have resulted in a rapid increase in the amount of user-generated content (UGC), as well as an increase in user participation and sharing via websites (Kim et al., 2012). In 2016, BrightLocal conducted a survey of local consumer reviews and found that 91% of consumers regularly or irregularly read online reviews. For hotels or guesthouses, 68% of consumers read between one and six reviews before deciding, while only 10% of consumers were willing to spend the time researching or reading more than 10 reviews. Then, 58% of consumers paid the most attention to average star ratings. However, many people believed that the emotion and quality of reviews were more important, and they would have some doubt if only considering the star rating.

According to the research of Yang et al. (2016), the most important functions of reviews are to reduce the risk and uncertainty for the buyer and to allow the buyer to assess the product or service quality. Negative reviews may play a more important role and illustrate the importance of online reviews in customer purchasing decisions (Shen, 2010). The sharing economy is unique in that it...
uses online platforms to unite two parties, and it is distinct from a traditional trade, in that the consumer cannot see the physical product. Therefore, in a situation in which consumers cannot touch the products before purchasing, the risks of online trade may be greater than those in physical shops (Utz et al., 2012). The Leo Burnett Co. conducted a survey of American adults between 18 and 69, and noted that they believed that risk is the primary obstacle preventing participation in the sharing economy.

Malhotra and Van Alstyne (2014) researched the negative aspect of the sharing economy. In addition, when consumers read reviews, they generally begin by looking at the overall star rating, which is typically standardized as ranging between values of 1 and 5, with five stars being the highest ranking. However, some research has shown that although review content and star ratings are based mainly on the same experience, there are still occasional logical conflicts (Maks and Vossen, 2013). Wu et al. (2013) stated that online reviews play an important role in the e-commerce industry. Their study found that consumers’ willingness to buy is affected not only by product and seller reviews but by their own attitude toward risk. Then Casaló et al. (2015) also conducted a survey of risk. Their research showed that 78% of British consumers' purchasing behaviors were affected by online reviews and negative reviews were more likely than positive reviews to affect purchasing behaviors.

According to a 2016 survey by eMarketer, 59% of respondents expressed that, for both online and physical shops, online reviews affected their purchasing decisions. This finding is supported by numerous previous studies (Qu, 2009; Shen, 2010; Utz et al., 2012; Wu et al., 2013; Olabarri-Fernández et al., 2015). In this regard, the effects of negative reviews are especially important (Cui et al., 2012; Olabarri-Fernández et al., 2015; Casaló et al., 2015; Ballantine and Au Yeung, 2015). According to a 2014 survey by YouGov, Americans rely on online reviews to make purchasing decisions, but at the same time, do not believe that online reviews are true or fair. This study used positive and negative emotional words from online reviews as the basis for further understanding how reviews affect consumers’ decisions. The research questions of our study are: (1) what is the effect of the emotion of online reviews on consumer decision-making? (2) What is the link between the emotions in reviews and the degree of risk? By conducting the experiments across multiple generations of respondents, we discovered that Generations Z and Y paid more attention to reviews, cost, and cleanliness, while Generation X paid more attention to cleanliness, reviews, and overall star rating, and high-risk people were more likely to be affected by the negative reviews.

2. Literature review

2.1. The sharing economy

The sharing economy, which uses a model of renting instead of buying, is also called the collaborative consumption which is a new form of e-commerce. Kalakota and Whinston (1997) believe that e-commerce refers to the use of the Internet to engage in trade, and the purchase or sale of products or services. The concept of the sharing economy was first proposed by Selton and Spaeth (1978), who argued that collaborative consumption not only involved individuals sharing resources, but also expressions of willingness by individuals. In recent years, Botman (2010) has argued that the sharing economy represents a reshaping of traditional market behavior, whereby technology is used to rent, trade, share, and barter. Bell (2014) has stated that the sharing economy refers to people adjusting their acquisition and allocation of resources to collect fees or compensation. Other compensation-based definitions touch on non-monetary compensation, such as bartering. Allen (2015) has stated that the sharing economy is a new platform, and is a medium that exists between buyers and sellers, primarily used for the sharing of resources. Given the above definitions provided by organizations and academics, this study primarily uses Botman’s (2010) definition of the sharing economy.

Previous literature on the sharing economy has focused on the exploration of business models. Choi et al. (2014) proposed that sharing economy business models and the introduction of small to medium-size enterprises (SMEs) have increased the scale of the economy and additional revenue by utilizing idle resources and through cost savings. Winterhalter et al. (2015) argued that companies with traditional business models also have opportunities to respond to the demands of the sharing economy. According to a report by TechCrunch in 2015, the sharing economy unfolded at the same time that two-way reviews emerged. Sharing with strangers begins with trust, and trust is established based on reviews. The primary reason that the sharing economy has two-way reviews is to protect the interests of buyers and sellers. Two-way reviewing involving buyers and sellers reviewing one another; it establishes transparency and allows people to take responsibility and improve the process.

Today, because of the continuous development of the Internet, increasing numbers of consumers are shopping online. When shopping, different channels lead to different purchasing decisions. For example, because consumers can touch products in physical stores, they have a direct understanding of the products (McCabe, 2001). Deka (2016) argues that the process of consumer decision-making is complex and that consumer decisions involve their circumstances, background, and prior experience. Dillon and Reif (2004) used attitude, demographic characteristics, products, purchasing experiences, customer service, and consumer risk to study the factors that determine young peoples’ decisions to make online purchases. Their results showed that young people with online shopping experience had a more positive attitude to online shopping compared to young people without online shopping experience.

Previous studies have argued that online consumption is more price-sensitive than consumption in physical stores (Edgecliffe-Johnson et al., 2002). However, Park (2007) studied the decisions of consumers when purchasing a book online and offline, and found that there was no difference for price, habit, and review/recommendation. The reason for this result is related to the type of product. Because the sharing economy is a form of e-commerce, purchasing decisions in the sharing economy do not differ much from those in e-commerce. For high price products, product quality apparently is the most important deciding factor (PwC, 2015). Ert et al.’s (2016) study of Airbnb showed that consumer decisions are affected by product type (apartment size/location) and seller type (reputation, physical appearance). Accordingly, it is evident that product type affects purchasing decisions both in the sharing economy and in traditional physical stores, but that in the sharing economy, trust constitutes a currency, and is a factor that affects the decisions of consumers (Botman, 2012). Jøsang et al. (2007) indicated that the Internet can create effective systems for collecting information, as well as for generating trust and building reputations to support purchasing decisions and online product quality. Wu et al. (2016) studied the market for short-term rentals, and state that most ratings are near the top value and lack of many variations.

Thus, in addition to the similarities between sharing economy decision-making and traditional economy decision-making regarding product type and price, seller type (reputation, physical appearance) and trust are important factors for consumers in the sharing economy, and trust is established through reviews (Millwood, 2015). Utz et al. (2012) stated that verified ratings of
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