

The Impact of Herd Behavior on Purchase Behavior: The Moderating Role of Uncertainty

Research-in-Progress

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Abstract

Herd behavior has gained attention in recent IS literature. However, the relationship between herd behavior and buyers' purchase behavior in social commerce contexts is under-investigated. In order to fill this gap, we develop a research model to investigate how herd behavior influences buyers' purchase behavior in the context of social commerce. In addition, we also consider how seller and product uncertainty moderate the relationship between herd behavior and buyers' purchase behavior. Users in China who have purchase experience on social commerce platforms will be surveyed to test our hypotheses. The research design and potential theoretical and practical implications will be discussed.

Keywords: Social commerce, herd behavior, seller uncertainty, product uncertainty, purchase behavior

Introduction

In recent years, the use of social media has increased dramatically, and buyers are more inclined to obtain information about products or services through social media (Ho et al. 2011; Shen et al. 2019). Social commerce integrates social media to promote commercial activities based on social interactions (Farivar et al. 2017; Farivar et al. 2018). The popularity of social commerce is expected to grow and its global revenue will reach US\$80 billion by 2020 (Shen et al. 2019). However, prior research focused more on consumers' contributing and commenting behavior in social commerce (Arazy et al. 2016; Chen et al. 2019), while paying less attention to their purchasing behavior. Furthermore, online sellers in social commerce also face stiff competition because of buyers' low switching costs (Shen et al. 2019). Therefore, it is crucial for the online sellers to know why buyers are willing to make purchases in social commerce.

According to Chen et al. (2011), online social interaction affects buyers' decisions. In particular, buyers' evaluations and judgments of products or services are influenced by behavior-based social interaction (i.e., herd behavior) (Shen et al. 2016). Herd behavior reflects how individuals follow others by depending on others' information (Au and Kauffman 2003; Banerjee 1992; Duan et al. 2009). In other words, herd behavior highlights how buyers may observe or learn from others' purchase behavior in order to make their own decisions (Shen et al. 2016). Although herd behavior has been studied in contexts such as technology adoption (Sun 2013), online social stock (Al-Hasan 2018), online software adoption (Duan et al. 2009) and P2P lending (Jiang et al. 2018), it remains unclear how herd behavior affects buyers' purchase behavior in the context of social commerce, especially from a theoretical perspective. Given the above mentioned potential growth of social commerce market, it is necessary to pay attention to herd behavior in social commerce (we are only interested in studying the herd behavior of buyers (not all consumers) and we do not look at herd behaviors that do not involve buying). Therefore, our first research question is to investigate to what extent herd factors might prompt buyers' purchase behavior in social commerce.

Social commerce is similar to traditional e-commerce in the transaction because the characteristic of physical separation may exacerbate uncertainty (Bai et al. 2015; Chen et al. 2019). Adverse selection and moral hazard are two types of information problems that drive uncertainty during transactions (Akerlof 1978; Jensen and Meckling 1976). Thus, a large body of research has assumed that uncertainty leads to herd behavior (Haunschild and Miner 1997; Rao et al. 2001; Sun 2013). However, prior researchers also noted that the relationship between uncertainty and herd behavior is more complicated than is commonly assumed (Gaba and Terlaak 2013). Dimoka et al. (2012) distinguished product uncertainty from seller uncertainty in online markets. To the best of our knowledge, how product uncertainty and seller uncertainty may influence the impacts of herd factors on purchase behavior is unexplored. In order to address this limitation, our second research question is to examine the moderating effects of product and seller uncertainty on the relationship between herd factors and purchase behavior in social commerce.

To test the research model, we will collect data from social commerce users in China. Compared with western countries, the e-commerce institutional mechanisms in China are less perfect, and thus the uncertainty is high in social commerce, which has the potential to exaggerate the role of the herd effect (Chen et al. 2017).

This research contributes to the extant literature and practice in the following ways. First, our research enhances the current understanding of the relationship between herd factors and purchase behavior in the context of social commerce. Second, by establishing uncertainty as the moderator on the relationship between herd factors and purchase behavior, our research advances the current study on the effects of herd factors by specifying a boundary condition under which the herd factors vary. Third, unlike prior research that considers uncertainty in only one dimension, our research distinguishes product uncertainty from seller uncertainty and investigates their moderating effects separately. In terms of practical implications, our study suggests that for online sellers, they should create herding effects when buyers' perceived product and seller uncertainty are high.

Literature Review

Herd behavior

Herd behavior is defined as individuals doing what others are doing, even if their own information suggests that they should do something completely different (Au and Kauffman 2003; Banerjee 1992; Bikhchandani et al. 1992; Duan et al. 2009). Information cascade is a basic feature of a herd (Sun 2013). An information cascade occurs when people defer to predecessors' behavior without considering their private information after observing others (Anderson and Holt 1997; Bikhchandani et al. 1992; Çelen and Kariv 2004). In this case, an information cascade can explain herd behavior from the perspective of information (Sun 2013). The flow of information dissemination is from predecessors to followers with little new information being included, which suggests that low informativeness is a typical characteristic of herd behavior (Sun 2013). Accordingly, a herd can't represent the preferences of all its members (Banerjee 1992; Bikhchandani et al. 1992; Lieberman and Asaba 2006). Prior research indicated that decision uncertainty and observation of others' actions are

the two main conditions of herd behavior' occurrence (Shen et al. 2016; Sun 2013). On the one hand, individuals tend to herd if their uncertainty is high because of having incomplete information (Bikhchandani and Sharma 2000; Lieberman and Asaba 2006; Walden and Browne 2009). On the other hand, observation of others' actions is necessary for a person to join a herd (Shen et al. 2016; Sun 2013). When observing, the number and identity of predecessors are important (Bandura 1987; Rao et al. 2001; Shen et al. 2016).

Previous studies suggested that herd formation may be a less widespread outcome than predicted by theory when financial agents make decisions (Avery and Zemsky 1998; Hey and Morone 2004). On the one hand, herding concerns not only individuals' own private information but also their observations of the others' actions (Sun 2013). On the other hand, individuals subjectively decide to what degree they can discreetly make their decisions through depending on the actions/decisions of others (Sun 2013). Accordingly, following Sun (2013), herd behavior should include imitating others (IMI) and discounting one's own information (DOI). Hence, in this paper, we posit that imitating others describes the extent to which people make the same product choice as others when purchasing. Discounting one's own information reflects the degree to which individuals ignore their own information but will follow others when shopping online.

The existing research on herd behavior has mainly focused on the context of technology adoption and online social stock. For example, Al-Hasan (2018) found that information-based herding and reputation-based herding can lead to adverse investment performance in the context of online social stock picking. Similarly, Duan et al. (2009) indicated that users' decisions exhibit distinct changes with download ranking in the context of online software adoption. Furthermore, herding also plays an important role in the P2P lending market. Jiang et al. (2018) proposed that subsequent investors may follow their predecessors' actions when choosing which platform to invest. However, few studies have examined how herd behavior affects buyers' purchase behavior in the context of social commerce, despite the fact that recent researchers have highlighted the important role of herd behavior in buyers' adoption of online reviews (Shen et al. 2016).

Uncertainty

Prior studies have indicated that uncertainty is the main barrier that hinders buyers from engaging in an online transaction (Dimoka et al. 2012; Hallikainen and Laukkanen 2018). In the online shopping context, uncertainty means that it is difficult for buyers to predict the online shopping outcomes accurately due to information asymmetry about sellers and products (Dimoka et al. 2012; Pavlou et al. 2007). There are two types of information problems—adverse selection and moral hazard—that lead to uncertainty during transactions (Akerlof 1978; Jensen and Meckling 1976). Arrow (1963) indicated that hidden information and hidden action are more practical than adverse selection and moral hazard. Here, hidden information is defined as sellers providing false product information (product uncertainty) and the true attributes of the products are misrepresented prior to purchase (seller uncertainty) (Pavlou et al. 2007). Meanwhile, hidden action is defined as sellers' reducing the promised product quality (product uncertainty) and post-contractual shirking, contract default and fraud (seller quality uncertainty) (seller uncertainty) (Pavlou et al. 2007). Hence, seller uncertainty and product uncertainty are the primary uncertainties in buyer-seller relationships (Dimoka et al. 2012; Ghose 2009).

Seller uncertainty reflects that it is difficult for buyers to assess the true quality of online sellers and predict whether sellers will defraud them (Hong and Pavlou 2014; Pavlou et al. 2007). On the one hand, sellers in the online market vary greatly in their ability and integrity to perform contracts. On the other hand, sellers are unwilling to expose their true quality (Dimoka et al. 2012; Ghose 2009). Compared with the traditional online market, seller uncertainty in the social commerce context is more serious because it is more difficult for buyers to observe the social cues of personal interaction and the body language of sellers (Gefen et al. 2003).

Product uncertainty reflects that it is difficult for buyers to assess the true quality of products and predict whether products will perform well (Dimoka et al. 2012; Lee et al. 2015). Dimoka et al. (2012) stated that product uncertainty includes description uncertainty and performance uncertainty. Description uncertainty means that it is difficult for buyers to obtain true information about the products' quality due to sellers' imperfect description of the product. Performance uncertainty means

that it is difficult for buyers to evaluate the future performance of the products due to sellers' unawareness of the products' hidden defects (Huang et al. 2009; Liebeskind and Rumelt 1989).

Research Model and Hypothesis Development

Based on the literature review, we develop a research model (see Figure 1). We propose that herd factors have impacts on purchase behavior. In addition, we consider the moderating effects of seller uncertainty and product uncertainty on the relationship between herd factors and purchase behavior.

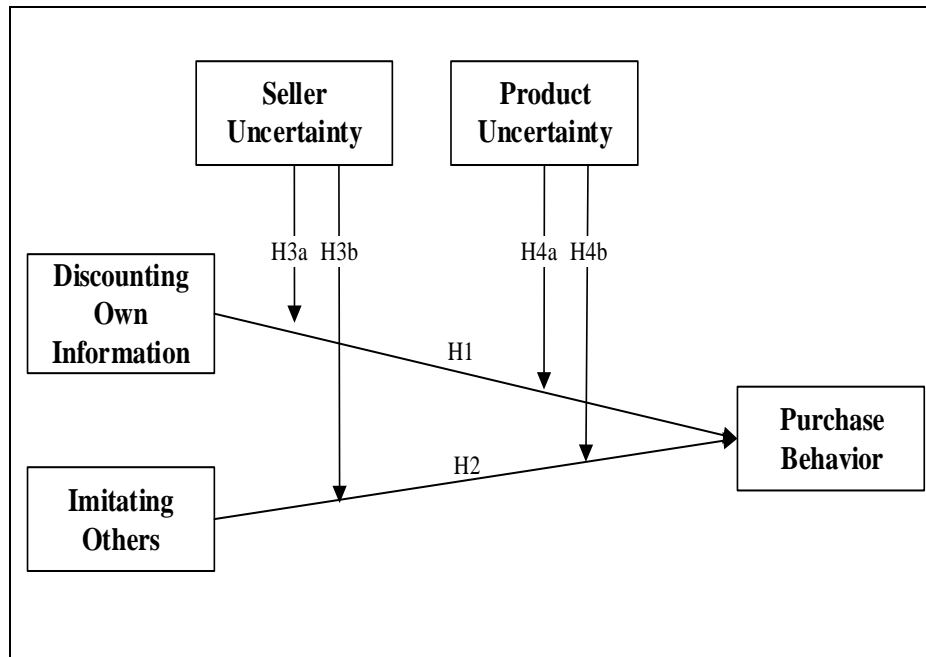


Figure 1. Research Model

Influences of herd factors

Information about products is overwhelming in the information era (Brynjolfsson and Smith 2000; Duan et al. 2009; Jones et al. 2004). When people's private information is imperfect or asymmetric, they tend to discount their own information and follow the crowd (Bikhchandani and Sharma 2000; Sun 2013; Walden and Browne 2009). Individuals believe that prior adopters' decision is the outcome of detailed research (Rao et al. 2001). When people discount their own information, they may overlook their own needs and compromise to the position of the herd. Thus, they will engage in purchase behavior. Therefore, we propose:

Hypothesis 1. Discounting one's own information in favor of herd information is positively associated with purchase behavior.

Prior research on compensation-based herding indicated that competitive disadvantages can prompt individuals to imitate others to avoid the worst situation by getting average compensation (Bikhchandani and Sharma 2000; Maug and Naik 2011). In such situations, individuals are likely to choose products that have bought by other buyers to obtain above-average advantages in the context of social commerce. In addition, reputation-based herding research suggested that imitating others can help people to maintain their reputation by avoiding being considered incompetent (Graham 1999; Scharfstein and Stein 1990). When individuals imitate others, they are more likely to purchase the products. Hence, we propose:

Hypothesis 2. Imitating others who are members of the herd is positively associated with purchase behavior.

The moderating role of seller uncertainty

As mentioned earlier, herding concerns not only individuals' own private information but also their observations of the others' actions (Sun 2013). Previous studies indicated that buyers tend to disregard the value of information which comes from uncertain sellers (Dimoka et al. 2012; Klein and Leffler 1981). Therefore, when seller uncertainty is high, buyers will need to search for other information to increase their confidence in making the right decisions.

On the one hand, buyers will realize the value of their own information when they make purchase behavior. Thus, under the circumstance of high seller uncertainty, buyers may make purchase behavior with more information discounting of their own.

Hypothesis 3a. Seller uncertainty positively moderates the relationship between discounting own information and purchase behavior.

On the other hand, buyers need to obtain more information by observing predecessors' behavior. Therefore, when seller uncertainty is high, imitating others is an effective strategy to make the right purchase behavior. Hence, we propose:

Hypothesis 3b. Seller uncertainty positively moderates the relationship between imitating others and purchase behavior.

The moderating role of product uncertainty

We posit that when product uncertainty is high, buyers' private information is more imperfect and asymmetric. Therefore, they are not confident in their private information and thus they choose to follow the crowd. In addition, under the circumstance of high product uncertainty, discounting their own information can help to prompt buyers' purchase behavior. Accordingly, we propose:

Hypothesis 4a. Product uncertainty positively moderates the relationship between discounting own information and purchase behavior.

When product uncertainty is high, buyers' confidence in choosing the right option will decrease. According to the literature of compensation-based herding (Bikhchandani and Sharma 2000; Maug and Naik 2011) and reputation-based herding (Graham 1999; Scharfstein and Stein 1990), in order to minimize the loss which is competitive disadvantages and being considered incompetent, buyers will be more willing to imitate others, thereby their purchase behavior can be enhanced. Thus, we propose:

Hypothesis 4b. Product uncertainty positively moderates the relationship between imitating others and purchase behavior.

Research Methodology and Analysis

Measurement development

To test the hypotheses, the survey method will be employed. All the measurement items of the constructs in our research model will be adapted from previous research. Some minor revisions will be made to better fit our research context. Some individual buyers/respondents may be more inclined to herd than others. Such an inclination can be measured (quite easily) and we can hypothesize that those who are more likely to herd will also be more likely to a) discount their own information and b) imitate others. Specifically, discounting own information is assessed with a three-item scale adapted from Sun (2013). Sample items include "If I don't know the popularity of the product or service, I may have chosen a different one". Imitating others is measured using a three-item scale adapted from Sun (2013). Sample items include "I follow others in purchasing this product or service". In addition, product uncertainty is assessed with a nine-item scale adapted from Dimoka et al. (2012). Sample items include "I feel that this product or service has not been thoroughly described to me on the website description". Seller uncertainty is measured using a nine-item scale adapted from Dimoka et al. (2012). Sample items include "I am doubtful that this seller has accurately portrayed his or her true characteristics". Finally, purchase behavior is assessed with a two-item scale adapted from (Guo and Barnes 2011). Sample items include "How much money do you spend on buying products each month from this seller?"

A 7-point Likert scale, ranging from 1 (“strongly disagree”) to 7 (“strongly agree”), will be used to measure all constructs. Given that the survey will be conducted in China, we will translate the questionnaire from English into Chinese according to the translation panel approach (Van de Vijver et al. 1997). In addition, we will hire a professional translator who is unfamiliar with our study to translate the questionnaire from Chinese back to English to avoid the problem of semantic discrepancies.

Data collection

In order to ensure the respondents of our survey is appropriate. We will invite Chinese users who have purchase experience on social commerce platforms to participate in our survey.

Data analysis

The hypotheses will be tested by using ordinary least squares (OLS) regression because it is more suitable for research models with multiple moderating effects. We will minimize potential multicollinearity based on the approach of Friedrich (1982). We will include the control variables in step 1, then the independent variables and moderators will be included in step 2. The interaction effects will be added in step 3.

Conclusions and Expected Implications

The present research aims to explore the relationship between herd factors and purchase behavior in Chinese social commerce. Besides, we differentiate product uncertainty from seller uncertainty and examine their moderating effects on the relationship between herd factors and purchase behavior.

This research is expected to have several theoretical implications. First, our research provides a new understanding of the relationship between herd factors and purchase behavior by considering the context of social commerce in China. Second, the existing studies have largely ignored the boundary conditions under which the effects of herd factors vary (Hong et al. 2017; Shen et al. 2016). The present research aims to fill this gap by investigating the moderating role of uncertainty in the relationship between herd factors and purchase behavior in China. Third, different from previous research that considers uncertainty in only one dimension, our research distinguishes product uncertainty from seller uncertainty and investigates their moderating effects separately.

This study also has practical implications for both buyers and sellers. The potential findings will provide sellers with practical guidelines on how to take advantage of herd behavior to prompt buyers to make a purchase, especially when buyers’ perceived uncertainty is high. In addition, this study suggests that buyers prefer to herd by purchasing online in order to justify the preferences (i.e., herding).

This study has a major limitation that provides an opportunity for future research. In particular, the current research looked only at the seller’s perspective, but not the buyers’ perspective. Future research should take both sellers’ and buyers’ perspectives into account.

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