12-15-2019

Impact of Social Interaction on Live-streaming Shopping Websites

Jinqi Men
University of Science and Technology of China, menjinqi@mail.ustc.edu.cn

Xiabing Zheng
University of Science and Technology of China, is.xzheng@gmail.com

Follow this and additional works at: https://aisel.aisnet.org/sighci2019

Impact of Social Interaction on Live-streaming Shopping Websites

Research in Progress

Jinqi Men
University of Science and Technology of China
menjinqi@mail.ustc.edu.cn

Xiabing Zheng
University of Science and Technology of China
is.xzheng@gmail.com

ABSTRACT

Social interaction (via electronic word of mouth and observational learning) is an essential factor for successful online commerce. The new technology of live-streaming changes how social interaction affects consumers. This ongoing research investigates how instant electronic word of mouth and observational learning influence consumers' perceptions of a live-streaming shopping website. This study also regards the perceived credibility of the seller and swift guanxi as an initial relationship state and an enhanced relationship state, respectively. Results will contribute toward IS literature by improving our understanding of social interaction and its effect on consumers' perceptions and behaviors in a live-streaming shopping website. Furthermore, such findings can be leveraged to promote live-streaming technology among retailers planning to stimulate consumers' purchase behavior.

Keywords

Live-streaming shopping, instant electronic word of mouth, instant observational learning, swift guanxi

INTRODUCTION

Communication is regarded as the key winning factor in the ongoing battle among online shopping retailers (Donna and Novak, 1997). Many customers hope to communicate with sellers and other consumers because of utilitarian (e.g., advice and time savings) and social benefits (Reynolds and Beatty, 1999). These consumers want increased social interaction to gain considerable benefit from sellers. The rapid development of technology results in a growth of communication formats. For example, live-streaming, an Internet-based multimedia entertainment for viewers to interact, was established in 2011 (Chen and Lin, 2018). An iResearch report indicated that China's live-streaming market was valued at USD 3 billion in 2016, with a 180% increase from 2015, and at USD 63.8 billion in 2017[1]. With the increasing popularity of live-streaming, marketers adopt this strategy as a new way to expand market competition. iResearch suggested that the market income of live-streaming shopping websites accounts for the increased Internet traffic in China from 1.3% in 2015 to 18.4% in 2017[1]. Moreover, among all the viewers on live-streaming shopping websites, 64% of viewers had the purpose of consuming while watching[1]. However, despite the great influence of such websites, limited research examined this phenomenon. Due to the increasing popularity of live-streaming shopping websites, experts and managers should understand how consumers behave while viewing live-streaming shopping websites.

A live-streaming shopping website is defined as a platform that has the "attributes of social commerce that integrates real-time social interaction into e-commerce" (Cai et al., 2018). Buyers can post their comments via Danmaku (a type of comment scrolled across the screen in real time) to interact with sellers. At the same time, sellers display their wares and introduce the products. Consumers could communicate with the seller and other buyers instantly and obtain the required information about the quality of products on live-streaming shopping websites. In comparison with sellers' recommendation, buyer-created information is regarded as more credible for consumers (Park et al., 2007). Consumers could learn from others' comments and/or actual purchase behaviors. These phenomena are generalized as online social interaction, which included electronic word of mouth (eWOM) and observational learning (OL) (Chen et al., 2011).

Recent technological advances changed the mechanism of social interactions. For example, on a live-streaming shopping website, the content of real-time Danmaku, which is related to the evaluation of the product or service, is viewed as instant eWOM. Moreover, observing other buyers' real-time purchase actions is regarded as instant OL on live-streaming shopping websites. In contrast to social interaction in the traditional online context (Wang and Yu, 2017), social interaction on live-streaming shopping websites is instantaneous.

In comparison with eWOM in other platforms, instant eWOM on live-streaming shopping websites is more customized. Such characteristic usually occurs because of the inquiry of other "new" buyers and "information fit to task" could reduce the information load and increase

---

[1]http://report.iresearch.cn/report/201803/3180.shtml

shopping efficiency. Instant OL information, another special social interaction on live-streaming shopping websites, give consumers a feeling described as "get it while it lasts;" it then generates a sense of urgency and encourages consumers to purchase (Peng et al., 2019). However, in spite of the vital impacts of instant eWOM and instant OL on live-streaming shopping websites, no research studied these phenomena. Hence, this study attempts to address the effect of such "new" social interaction in consumers' perceptions and behaviors on live-streaming shopping, thereby enriching the understanding of such social interaction.

This study adopts eWOM and OL theories to explore consumers' "add to cart behavior" on a live-streaming shopping website. The structure of the remaining sections of this work is as follows. Section 2 briefly reviews the related literature. Section 3 presents the theoretical foundation and introduces the hypotheses. Sections 4 and 5 introduce the anticipated research design and expected contribution.

LITERATURE REVIEW

Social interaction refers to the actions taken by an individual who is not the seller but exerts an effect on other individuals' evaluation of products or services (Godes et al., 2005). Such interaction is divided into two aspects, namely, opinion- and behavior-based social interactions (Cheung and Thadani, 2012). In contrast to social interaction in the traditional online context (Wang and Yu, 2017), social interaction on live-streaming shopping websites is instantaneous. Therefore, we defined instant eWOM and OL as instant opinion- and behavior-based social interaction, respectively.

Electronic Word of Mouth

According to Chen et al. (2011), WOM can be regarded as "the dissemination of information (e.g., opinions and recommendations) through communication among people." People who experienced using the product could share information as a reference to other users. Relative to the information provided by sellers, consumer-created information is regarded more credible (Dellarocas, 2003). Sellers who want to convince consumers and induce them to buy a product tend to present incomplete information and emphasize the good aspects of the product (Park et al., 2007). By contrast, consumers are likely to provide complete information about the product (including good and weak aspects) and could provide an effective basis for other consumers to evaluate the product (Park et al., 2007). In addition, consumer-created information is acceptable for other consumers because it is based on the buyers' own experience of using the product (Chen and Xie, 2008). Therefore, to a certain extent, eWOM could reduce product uncertainty, which is considered a major barrier to online transactions (Luo et al., 2012).

How buyers gain recommendations or opinions (eWOM) on live-streaming shopping websites differs from that on other platforms. Prior to purchase, buyers on a live-streaming shopping website may ask the "reference" buyers about the quality of the product. If the buyers receive positive product evaluation from the "reference" buyers, then they are likely to have purchase intention. Otherwise, the buyers will not purchase the product. Additionally, the instant feedback information is "fit to the task" and could reduce searching cost. The instant communication about the product recommendation between two buyers could increase purchase efficiency and enhance the relationship among the buyers, sellers, and other buyers.

Observational Learning

OL, which originated from social learning studies in psychology, is defined as learning other individuals' behavior (Bandura, 1977) without seeking the reason behind their behavior (Chen et al., 2011). When OL occurs, people care about others' behavior and ignore their initial need. OL is associated with consumers' purchase behavior (Chen et al., 2011). It could reduce the problem of information redundancy and simplify the decision-making process (Wang and Yu, 2017). Moreover, on a live-streaming shopping website, the purchase behavior of others is presented instantly, a feature which gives buyers the illusion that they would miss the opportunity to purchase if they do not do it immediately. This situation will urge buyers to display purchase behavior (Peng et al., 2019).

EWOM and OL were regarded by a prior study as essential factors for the success of online commerce (Wang and Yu, 2017). Thus, this study examined the effect of "new" social interaction (instant eWOM and instant OL) on consumers' "add to cart" behavior.

Interactivity and Swift Guanxi

Media richness theory (MRT) argues that "task performance will be improved when task information needs are matched to a medium's information richness" (Dennis et al., 2008). Ou et al. (2014) extended this theory to the online context and proposed that the use of computer-mediated communication (CMC) tools could facilitate buyer-seller communication and repeat buyer-seller transactions. In their study, CMC enriched the medium information and improved the sellers' "task performance" (Ou et al., 2014). The present work views Danmaku as a form of CMC tool and one that helps buyers interact with sellers. Through real-time and interactive communication, buyers and sellers could resolve information asymmetry and reach a mutually satisfactory outcome. This collaboration is an interactive process that could help build swift guanxi between buyers and sellers.

Swift guanxi was defined by Ou et al. (2014) as "a buyer's perception of a swiftly-formed interpersonal relationship with a seller." On a live-streaming shopping website, buyers raising a question through Danmaku could obtain the answers from the sellers' body, facial, and sound cues, thereby enhancing the interaction between sellers and

buyers and providing a suitable context to easily build swift guanxi. Furthermore, buyers in a live-streaming shopping website could observe other buyers' interaction with sellers, a circumstance which also helps buyers to further know and form an interpersonal relationship (swift guanxi) with sellers. Swift guanxi is divided into three dimensions, namely, mutual understanding, reciprocal favors, and relationship harmony (Ou et al., 2014). Mutual understanding refers to "buyers' and sellers' appreciation of each other's needs" (Ou et al., 2014). Reciprocal favors denote the "positive benefits from buyers' and sellers' interactions" (Ou et al., 2014). Relationship harmony indicates "mutual respect and conflict avoidance" (Ou et al., 2014).
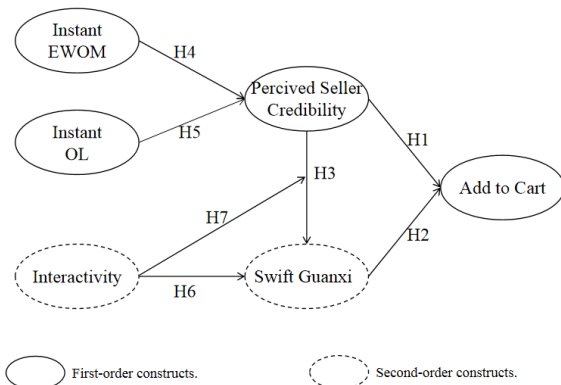
HYPOTHESES DEVELOPMENT
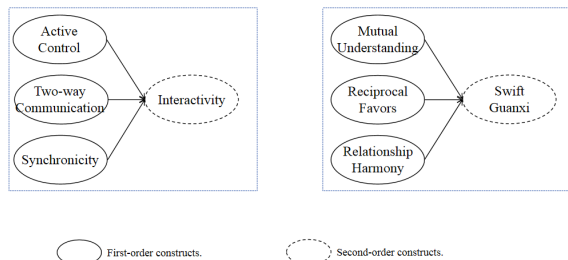

Figure 1. Research Model

Figure 2. Second-order constructs

Figure 1 shows the theoretical model. This study intends to examine the effects of instant OL, instant eWOM, and interactivity on consumers' different perceptions (perceived seller credibility and swift guanxi). Moreover, it aims to further investigate the relationships among perceived seller credibility, swift guanxi, and consumers' "add to cart" behavior. Interactivity is conceptualized as a second-order factor that includes the three first-order factors of active control, two-way communication, and synchronicity. Swift guanxi is another second-order factor that includes three first-order factors, namely, mutual understanding, reciprocal favors, and relationship harmony. See Figure 2.

Rogers and Shoemaker (1971) defined credibility as the extent to which the receivers perceived the trustworthiness of the information source. When the information source is regarded credible, individuals are likely to be persuaded and will increase the intention to purchase the product (Grewal and Gotlieb, 1994). Prendergast et al. (2014) confirmed that salesperson credibility (specifically, trustworthiness and attractiveness) significantly mediates the impact of salesperson gender on consumers' intention to purchase. Lu et al. (2016) examined the relationship between trust in sellers (perceived seller credibility) and consumers' intention to purchase in the social commerce context. Therefore, we propose the following hypothesis:

H1: Perceived seller credibility positively affects consumers' "add to cart" behavior.

The explanation of the effects of swift guanxi is rooted from social exchange theory (Lin et al., 2019). The theory holds that if one party obtained something valuable from another party, then the former would also try to do something valuable to "reciprocate" the efforts of the latter (Cropanzano and Mitchell, 2005). In the live-streaming shopping website, buyers who build swift guanxi with the seller will post positive comments through Danmaku and purchase something from the sellers to reciprocate the latter's valuable work (i.e., giving buyers' discount and replying to buyers' questions immediately). Lin et al. (2019) demonstrated that swift guanxi was the main driver of users' intention to purchase on social commerce sites. Therefore, we posit the following hypothesis:

H2: Swift guanxi positively affects consumers' "add to cart" behavior.

Credibility is viewed as an essential factor of building guanxi (Wang, 2007). This relationship was also examined by Dunfee and Warren (2001), who proposed that "the individuals must interact, exchange some favors, build trust and credibility, and work over time to establish and maintain the relationship." In this study, we infer that buyers are likely to build mutual understanding and harmonious relationship with the seller they perceived to be trustworthy. Ou et al. (2014) verified the relationship between trust and swift guanxi. Therefore, we raise the following hypothesis:

H3: Perceived seller credibility positively affects consumers for building swift guanxi with sellers.

Social interaction influences individual's perceptions and purchase decisions (Godes et al., 2005). People are affected by other individuals' opinions and/or others' actual buying behavior. Such an observation is especially true in the online context because of the spatial and temporal separation among buyers and sellers, and the buyer perceives information as asymmetrical (Pavlou et al., 2007). Prior studies found that consumers perceived WOM as trustworthy (Cheung and Thadani, 2012) as WOM was posted by individuals who experienced using the product. Therefore, if buyers state that the product recommended by the seller is valuable to buy, then other buyers would regard

the seller credible and would likely purchase the product recommended by sellers. Similarly, according to information cascade theory (Bikhchandani et al., 1992), if a buyer observed other consumers' instant purchase actions on a live-streaming shopping website, then they would also purchase the product recommended by the seller and form a positive attitude toward the seller (e.g., perceived seller credibility). Ye and Fang (2013) supported this statement by confirming that eWOM reflects a seller's overall reputation (perceived seller credibility) and purchase history records which represented choices made by previous customers could reflect the seller's reputation (perceived seller credibility). Therefore, we propose the following hypotheses:

H4: Instant eWOM positively affects consumers' perceived seller credibility.

H5: Instant OL positively affects consumers' perceived seller credibility.

Interactivity refers to "the buyer's subjective perception of high-quality interaction with a seller" and is divided into three parts, namely, active control, two-way communication, and synchronicity (Ou et al., 2014). It is viewed as an essential part of high-quality communication. On a live-streaming shopping website, information (such as product features, product evaluations, and small talk) will be presented through Danmaku during the communication process. Information exchange will help buyers understand the transaction details clearly. Prior studies stated that interactivity among individuals was crucial in building swift guanxi (Lin et al., 2019; Ou et al., 2014). Therefore, we propose the following hypothesis:

H6: Interactivity positively affects the formation of swift guanxi between consumers and sellers.

Relationships are dynamic in nature as customers moved across relationship states (Zhang et al., 2016). For most frameworks, relationships started with low interpersonal relationships and had minimal relational bonding. Later, some of the consumers tended to improve the relationships aiming at improving their performance (Zhang et al., 2016). In this study, we regard perceived credibility in sellers as the first stage with minimal relational bonding. With the increasing interactivity between sellers and buyers, the buyer-seller relationship state changes from weak to fairly strong. The literature on interactivity supported this remark by positing that "human communication processes and outcomes vary systematically with the degree of interactivity that is afforded and/or experienced" (Burgoon et al., 2000). Therefore, we propose the following hypothesis:

H7: Interactivity strengthens the positive relationship between perceived seller credibility and swift guanxi.

PROPOSED METHODOLOGY

This study will conduct a laboratory experiment to test the proposed hypotheses. Taobao live-streaming website is the most popular live-streaming shopping website in China. To decrease participants' website identification, we will design a shopping live-streaming website that is similar to Taobao live-streaming website to conduct the experiment and select apparel as the presented products. As watching live-streaming shopping websites for shopping is common among most students, the task of watching and considering purchase of apparel represents a realistic scenario for student subjects. This study will implement a 2 (presence versus absence of instant eWOM) × 2 (presence versus absence of scroll bar) between-subject experimental design. Participants could ask sellers questions about the product through the Danmaku. This work will manipulate the instant eWOM condition through the Danmaku. By contrast, the control condition will not show the manipulation of the instant eWOM. In the treatment condition for the manipulation of instant OL, this research will adopt a scroll bar (which shows how many items people have bought) on the screen. Conversely, the control condition will not show a scroll bar.

Participants will be recruited from a university in China. The students will be assigned randomly to an experimental condition and asked to fill in a questionnaire, with their demographic information as the prequestionnaire. Then, they will have several minutes to become familiar with a live-streaming website. Their entire search process will be captured by Camtasia Studio, a software application that can record users' page browsing behavior. After this stage, viewers will complete a post-experiment questionnaire that measures their experience and perceptions. Each participant will receive approximately USD 7 as a reward. All constructs will be obtained from prior studies. SPSS and partial least squares are likely to be used for analysis of the collected data.

CONCLUSION

This study is expected to make three major contributions. First, the development of the technology of Web 2.0 changes how social interaction (eWOM and OL) affects consumers. For example, a live-streaming shopping website, which combines the function of e-commerce and social media, create new opportunities for sellers to effectively facilitate eWOM and OL. This work hopes to examine instant eWOM and instant OL and their effects on consumers' perceptions and behaviors. Second, given the dynamic nature of the buyer-seller relationship, we adopt perceived sellers' credibility and swift guanxi to measure the movement of the buyer-seller relationship state on a live-streaming shopping website. Finally, this research will provide practical implications for online retailers to stimulate consumers' purchase behavior.

REFERENCES

1. Burgoon, J. K., Bonito, J. A., Bengtsson, B., Cederberg, C., Lundeberg, M., and Allspach, L. (2000) Interactivity in human–computer interaction: A

study of credibility, understanding, and influence, *Computers in Human Behavior*, 16, 6, 553-574.

2. Bikhchandani, S., Hirshleifer, D., and Welch, I. (1992) A theory of fads, fashion, custom, and cultural change as informational cascades, *Journal of Political Economy*, 100, 5, 992-1026.

3. Bandura, A., and Walters, R. H. (1977) *Social learning theory* (Vol. 1). Englewood Cliffs, NJ: Prentice-hall.

4. Chen, C. C., and Lin, Y. C. (2018) What drives live-stream usage intention? The perspectives of flow, entertainment, social interaction, and endorsement, *Telematics and Informatics*, 35, 1, 293-303.

5. Cai, J., Wohn, D. Y., Mittal, A., and Sureshbabu, D. (2018) Utilitarian and hedonic motivations for live streaming shopping, In *Proceedings of the 2018 ACM international conference on interactive experiences for TV and online video,* 81-88.

6. Chen, Y., Wang, Q., and Xie, J. (2011) Online social interactions: A natural experiment on word of mouth versus observational learning, *Journal of Marketing Research*, 48, 2, 238-254.

7. Cheung, C. M., and Thadani, D. R. (2012) The impact of electronic word-of-mouth communication: A literature analysis and integrative model, *Decision Support Systems*, 54, 1, 461-470.

8. Chen, Y., and Xie, J. (2008) Online consumer review: Word-of-mouth as a new element of marketing communication mix, *Management Science*, 54, 3, 477-491.

9. Cropanzano, R., and Mitchell, M. S. (2005) Social exchange theory: An interdisciplinary review, *Journal of Management*, 31, 6, 874-900.

10. Dellarocas, C. (2003) The digitization of word of mouth: Promise and challenges of online feedback mechanisms, *Management Science*, 49, 10, 1407-1424.

11. Dennis, A. R., Fuller, R. M., and Valacich, J. S. (2008) Media, tasks, and communication processes: A theory of media synchronicity, *MIS Quarterly*, 32, 3, 575-600.

12. Dunfee, T. W., and Warren, D. E. (2001) Is guanxi ethical? A normative analysis of doing business in China, *Journal of Business Ethics*, 32, 3, 191-204.

13. Donna, L., and Novak, H. T. P. (1997) A new marketing paradigm for electronic commerce, *The Information Society*, 13, 1, 43-54.

14. Godes, D., Mayzlin, D., Chen, Y., Das, S., Dellarocas, C., Pfeiffer, B., ... and Verlegh, P. (2005) The firm's management of social interactions, *Marketing Letters*, 16, 3-4, 415-428.

15. Grewal, D., Gotlieb, J., and Marmorstein, H. (1994) The moderating effects of message framing and source credibility on the price-perceived risk relationship, *Journal of Consumer Research*, 21, 1, 145-153.

16. Luo, J., Ba, S., and Zhang, H. (2012) The effectiveness of online shopping characteristics and well-designed websites on satisfaction, *MIS Quarterly*, 36, 4, 1131-1144.

17. Lu, B., Fan, W., and Zhou, M. (2016) Social presence, trust, and social commerce purchase intention: An empirical research, *Computers in Human Behavior*, 56, 225-237.

18. Lin, J., Luo, Z., Cheng, X., and Li, L. (2019) Understanding the interplay of social commerce affordances and swift guanxi: An empirical study, *Information & Management*, 56, 2, 213-224.

19. Ou, C. X., Pavlou, P. A., and Davison, R. (2014) Swift guanxi in online marketplaces: The role of computer-mediated communication technologies, *MIS Quarterly*, 38, 1, 209-230.

20. Park, D. H., Lee, J., and Han, I. (2007) The effect of on-line consumer reviews on consumer purchasing intention: The moderating role of involvement, *International Journal of Electronic Commerce*, 11, 4, 125-148.

21. Paul Prendergast, G., Sze Li, S., and Li, C. (2014) Consumer perceptions of salesperson gender and credibility: An evolutionary explanation, *Journal of Consumer Marketing*, 31, 3, 200-211.

22. Pavlou, P. A., Liang, H., and Xue, Y. (2007) Understanding and mitigating uncertainty in online exchange relationships: A principal-agent perspective, *MIS Quarterly*, 31, 1, 105-136.

23. Peng, L., Zhang, W., Wang, X., and Liang, S. (2019) Moderating effects of time pressure on the relationship between perceived value and purchase intention in social E-commerce sales promotion: Considering the impact of product involvement, *Information & Management*, 56, 2, 317-328.

24. Rogers, E.M. and Shoemaker, F.F. (1971) Communication of Innovation, The Free Press, New York, NY, pp. 244-245.

25. Reynolds, K. E., and Beatty, S. E. (1999) Customer benefits and company consequences of customer-salesperson relationships in retailing, *Journal of Retailing*, 75, 1, 11-13.

26. Wang, Y., and Yu, C. (2017) Social interaction-based consumer decision-making model in social commerce: The role of word of mouth and observational learning, *International Journal of Information Management*, 37, 3, 179-189.

27. Wang, C. L. (2007) Guanxi vs. relationship marketing: Exploring underlying differences, *Industrial Marketing Management*, 36, 1, 81-86.

28. Ye, Q., and Fang, B. (2013) Learning from other buyers: The effect of purchase history records in online marketplaces, *Decision Support Systems*, 56, 502-512.

29. Zhang, J. Z., Watson Iv, G. F., Palmatier, R. W., and Dant, R. P. (2016) Dynamic relationship marketing, *Journal of Marketing*, 80, 5, 53-75