

Understanding the Antecedents and Consequences of Live-Chat Use in E-Commerce Context

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Abstract. Online shopping has progressed from having consumers passively browse through web pages of products to having them proactively engage in communication dialogs with product sellers via Live-Chat. Through Live-Chat, consumers can directly contact the sellers and inquire about their products of interest. This study extends the conceptual framework of motivation, opportunity, and ability (MOA) to understand the antecedents and consequences of Live-Chat usage in consumers' online shopping process. Our survey involving 222 online consumers validated the proposed conceptual model and confirmed most of our assumptions. For antecedents, we found that MOA factors generally influence the Live-Chat usage of consumers in their shopping process. Specifically, perceived information asymmetry, fears of seller opportunism and perceived personal expertise have strong positive effects on Live-Chat usage. For consequences, Live-Chat usage positively affects consumers' perceived interactivity, thereby reducing their uncertainty in transaction. Our findings contribute to the understanding of real-time communication technology in specific and digital service for e-commerce in general.

Keywords: Motivation-Opportunity-Ability Framework, Live-Chat, E-Commerce.

1 Introduction

Present-day consumers expect more from sellers, particularly in the electronic commerce (e-commerce) context. The mere act of passively browsing through the web pages of products is no longer deemed adequate. Furthermore, the lack of engagement or interaction with sellers, a typically offline marketplace feature, has dampened consumers' purchase inclinations (Jiang et al. 2010; Qiu and Benbasat 2005). Empirical evidence has shown that engaging in communication dialogues with consumers is important in establishing product brand loyalty and sustaining positive customer relationships (Guo et al. 2010). A more recent effort among many website operators is to embed the Live-Chat feature on the shopping platform, which could

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provide one-to-one instant responses to consumer questions (Andrews et al. 2002). These website operators include large online retailers such as Amazon (United States) and “Taobao” (Mainland China).

Despite the increasingly prevalent Live-Chat medium, which is embedded on shopping websites, research on Live-Chat usage by consumers is limited. Our primary knowledge on computer-mediated communication (CMC) has predominately focused on supporting asynchronous communication among consumers (Adjei et al. 2010), or allowing sellers to post additional product information through social platforms such as forums (Flanagin 2007). The investigation on synchronous communication, such as the Live-Chat medium, is limited. Thus, the current research aims to identify the antecedents and consequences of consumers’ usage of the Live-Chat medium, a form of synchronous communication tool with sales representatives in online shopping.

We adopted the conceptual framework of motivation, opportunity, and ability (MOA) (MacInnis and Jaworski 1989; MacInnis et al. 1991) to identify and model the MOA factors influence consumer’s Live-Chat usage. The framework argues that individuals’ engagement in medium usage is influenced by their motivation, opportunity, and ability, which enable them to undertake preferred behavior. After understanding the key antecedents of Live-Chat usage, this study also aims to explore how Live-Chat usage impacts consumer’s online purchase. Consistent with prior CMC literature, we propose that Live-Chat use contributes to improving consumer perception of interactivity because of its bidirectional and synchronized characteristics (Jiang et al., 2010; Merrilees, 2002). With the increased perception of interactivity, consumers feel the helpfulness of e-commerce websites, and thus reduce their uncertainty in e-commerce transactions (Pavlou et al. 2007). A survey was subsequently conducted to examine the relationships among the MOA factors, Live-Chat use, and the consequences.

2 Theoretical Foundation

2.1 Live-Chat Medium in E-Commerce Websites

Live-Chat is a shopping website-embedded communication tool that facilitates a consumer to engage in synchronous text-based one-to-one communication with a designated seller to obtain product and service information that may not be readily available on a product description web page (Ou and Davison 2009). The Live-Chat medium is typically placed on the product-listing page, which can be clicked by consumers when they need more information about a product.

From a seller’s perspective, the use of Live-Chat extends traditional customer service channels by providing personalized service for consumers through formulating one-to-one relationships between sellers and consumers. Having the tool allows e-commerce websites to mimic a physical store shopping experience (Goes et al. 2011). Consumers have a channel to communicate with the sales representatives and express their product expectations. Compared to telephone and traditional email services, communication through the Live-Chat medium is immediate, interactive, and efficient (Tezcan 2011).

From the consumer's perspective, he/she can obtain real-time help from sellers, and facilitate his/her information gathering process (Jiang et al. 2010). Such synchronized communication facilitates consumers' information gathering and therefore reduces their concerns about the transaction before making the purchase decision. More importantly, consumers actively engage in the generation of the seller's information disclosure. Ou, Davison, Pavlou, & Li (2008) examined the role of Live-Chat in consumers' purchase processes using survey methodology, and found that the medium enhanced consumer perception of interactivity and presence, thus leading to improvements in trust, relationship between buyer and seller, and repeated transaction intentions. In the following section, we review the MOA framework, which serves as the theoretical foundation for our research, focusing on the consumer's perspective.

2.2 Motivation, Opportunity, and Ability (MOA) Framework

The MOA framework is adopted in this study to identify consumers' antecedents of the Live-Chat medium use. The essential thesis of the theory is that individuals' behavior is determined by three main sets of factors, namely motivation, opportunity, and ability. Traditionally originating from the social marketing literature (MacInnis and Jaworski 1989; MacInnis et al. 1991), the MOA framework proposes that the behavior of consumers is determined by their motivation, opportunity, and ability (Gruen et al. 2007). This theoretical framework has been applied to examine the antecedents of consumer's advertisement information processing (MacInnis et al. 1991), knowledge-sharing behavior among employees (Siemens et al. 2008), and customer-to-customer information exchange (Gruen et al. 2007; Tseng et al. 2012). In information systems (IS) research, Strader and Hendrickson (1999) adapted this theory to guide the electronic market research.

The usefulness of MOA is evaluated as a theoretical approach by linking individuals' attitudes toward Live-Chat usage. An understanding of individuals' MOA factors may help e-commerce researchers to better understand how consumers use customer service (e.g., Live-Chat) to facilitate their online purchase. Moreover, we further broaden the boundary of the MOA theory by extending this theory to observe the antecedent of Live-Chat usage in e-commerce websites.

3 Research Model and Hypotheses

3.1 Motivation Factors

We define motivation as a consumer's desire or willingness to use the Live-Chat. Motivation represents a force that leads individuals toward the target (MacInnis and Jaworski 1989). Extending to the Live-Chat use, motivation factors address the uncertainty resulting from online shopping, which refers to the degree to which consumers fail to accurately predict the outcomes of a transaction due to seller-, product-, and process-related issues (Chatterjee and Datta 2008; Pavlou et al. 2007).

Two factors are identified as the motivational factors of Live-Chat medium usage, namely perceived information asymmetry and fears of seller opportunism.

Perceived information asymmetry is defined as the extent to which consumers perceive sellers to have more information about a product and the transaction process (Pavlou et al. 2007). Physical separation renders consumers unable to assess the quality of a product through touching and observing it directly on e-commerce websites. The provision of information on websites, such as images, descriptions, product reviews, and the purchasing process, is limited, and thus may not convey the information desired by consumers (Chiu et al. 2005). Dimoka et al. (2012) extended information asymmetry literature by proposing that buyers have difficulty in predicting the outcomes of online transactions due to information asymmetry, which was also confirmed by Pavlou et al. (2007). Two-way communication via the Live-Chat medium enables consumers to control the form and content of information exchanged and accelerates the economic negotiation (Chiu et al. 2005; Peterson et al. 1997). Thus, perceived information asymmetry, which dampens consumer confidence in a product's quality as well as the order fulfillment quality, encourages consumers to use the Live-Chat medium. We thus posit:

H1: Perceived information asymmetry (PIA) has a positive effect on Live-Chat medium usage (LCMU).

Fears of seller opportunism refer to buyers' concern about that sellers try to exploit the situation to maximize their profits (Pavlou et al. 2007). Because of the isolation between purchase and delivery process, online buyers have no opportunity to physically check the products when they make the purchase decision. In this situation, sellers could maximize their profit by providing low quality or fake products (i.e., lemons). Buyers seek for different methods to control and avoid seller opportunism. For instance, buyers use the online reviews to gain enough information of the products for their purchase decision. Live-Chat medium contributes for buyers to reduce their perceived fears of seller opportunism by recording the buyer-to-seller communication. Live-Chat medium enables buyers to easily confirm the product features and related selling policies by asking the relevant questions to seller. For instance, many buyers confirm the delivery policy with the sellers through Live-Chat medium. Seller's response is recorded by the Live-Chat functions. If sellers violate the agreements, the record of Live-Chat could serve as the evidence for the arbitration. Thus, we posit:

H2: Fears of Seller Opportunism (FSO) have a positive effect on Live-Chat medium usage (LCMU).

3.2 Ability and Opportunity Factors

Given that consumers have the motivation to conduct Live-Chat communication, the next issue is whether they have the ability to do so. Ability refers to consumers' related skills or knowledge that supports the technology usage. Ability, such as personal expertise and proficiency, influences consumer utilization of a given tool (Thompson et al. 1994). Personal technological expertise has been recognized as a

major ability factor of technology usage, which refers to how individuals perceive themselves to be knowledgeable, competent, trained, and experienced in a particular domain (Adjei et al., 2010). Fulk (1993) included expertise variables in his model of communication technology usage, and stated that individuals' experience should facilitate their technology assessments, which influence their utilization. Users' perceived personal expertise affects individuals' assessments and mastery of the Live-Chat medium as a form of technology (Schmitz and Fulk 1991). Consumers equipped with such expertise are likely to perceive the advantages of using the medium, including gaining access to needed information without the need to exert significant effort in learning about the medium. Therefore, perceived personal expertise is expected to have a significant impact on consumers' Live-Chat medium usage. Thus, we hypothesize:

H3: Perceived personal expertise (PPE) has a positive effect on Live-Chat medium usage (LCMU).

Opportunity is defined as the extent to which an environment or situation is conducive to achieving a goal. From a positive view, opportunity could be manifested in the form of a conducive context, or the low costs required for the action (Gruen et al. 2005). As a necessary condition for technology usage, the Live-Chat medium provided by e-commerce websites offers consumers the opportunity to directly interact with the sellers. As an exogenous factor, technology support (i.e., opportunity) is considered as a contextual and situational constraint relevant to Live-Chat usage in this research (Hughes 2007; MacInnis and Jaworski 1989). "Taobao," the largest e-commerce website in China, provides an embedded communication tool, called "WangWang," on every seller's web page. Such provision allows consumers to directly interact with the sellers before making the purchase decision. Consistent with the suggestion of Strader and Hendrickson (1999), we propose that the existence of the Live-Chat support, as an opportunity factor, influences consumers' Live-Chat medium usage.

3.3 Consequences of Live-Chat Usage

As a CMC tool, Live-Chat medium usage contributes to the improvement of consumers' perceived interactivity in their online shopping process. Perceived interactivity refers to the degree to which a communicator considers the dialogue with another person to be bi-directional and occurring in real-time. Compared to other customer service technologies (e.g., email), Live-Chat more closely resembles face-to-face communication because of its real-time, on-demand availability, and short waiting time (Zhu, Benbasat, & Jiang, 2010). To understand how interactivity can impact consumers' online shopping, Jiang et al. (2010) controlled the reciprocal communication function (i.e., Live-Chat feature) of websites and regarded communication as an important factor of website interactivity design. The results suggested that consumer perception of interactivity was determined by whether a Live-Chat feature was available on websites. Such synchronized interactions improve consumer ability to obtain the desired information in real-time and create a sense of closeness with the sellers. Perceived interactivity is reflected in terms of several aspects, such as bi-directional communication, personalization ability, control ability,

and total website shopping experience (Merrilees, 2002; Ou et al., 2008). Live-Chat, as a synchronous communication tool, allows consumers to control the information seeking process and change their information seeking method from passively reading product descriptions to actively addressing related questions concerning the relevant products. Thus, we posit:

H4: Live-Chat medium usage (LCMU) has a positive effect on consumers' perceived interactivity (INT).

Consumers experience uncertainty during their online shopping experiences, and this could be the result of the lack of information about the seller (i.e., seller identity anonymity), inadequate product information, and insufficient knowledge about the purchase process (Chatterjee and Datta 2008; Dimoka, Benbasat, et al. 2012). In other words, uncertainty generally often arises due to the lack of information, which makes it difficult for consumers to make decisions (Achrol and Stern 1988). An interactive website design (e.g. the Live-Chat medium) alleviates consumers' uncertainty perceptions by enhancing their ability to get information (Weathers et al. 2007).

Customer support denotes the interactivity aspect most frequently used by consumers. As we mentioned previously, a consumer's perception of interactivity refers to the degree in which consumers can communicate directly with sellers at anytime and anywhere. The perception of interactivity makes customers feel that they are enabled to receive help from sellers during an online shopping process. In the research context, it is built upon Live-Chat medium usage and reduces consumers' uncertainty through enhancing their ability to obtain the desired information. A high degree of perceived interactivity implies that consumers can get their desired information in real-time, and this perception reduces their purchase uncertainty (Adjei et al. 2010, Weiss et al. 2008, Berger and Calabrese 1975). Hence, Live-Chat medium usage enhances consumers' sense of interactivity, which leads to uncertainty reduction. Thus we posit:

H5: Perceived interactivity (INT) is positively related to perceived uncertainty reduction (UR).

H6: Live-Chat medium usage (LCMU) has a positive effect on consumers' uncertainty reduction (UR).

4 Research Methodology

4.1 Sample and Data Collection

Our research focuses on the Live-Chat medium. We developed a questionnaire to test the theoretically driven hypotheses in "Taobao" website, which captures 79.2% of the entire online shopping market in China (You et al. 2011). Existing validated scales were adopted where possible. Based on our research context and prior measurements of technology usage, we developed three items to assess consumers' Live-Chat usage based on the following scale: "frequently used it to communicate with sellers," "frequently used it to communicate with the sellers before I made a purchase decision," and "frequently used it to communicate with a seller after the transaction."

We adapted items from Pavlou et al. (2007) to measure perceived information asymmetry and fears of seller opportunism. To measure perceived personal expertise, we adapted scales from Adjei et al. (2010) in consideration of our online communication context. Interactivity was adapted to our research context from Ou et al. (2008) and Liu (2003). To assess uncertainty reduction, we adapted items from Achrol and Stern (1988). Respondents were asked to respond to a questionnaire based on a seven-point Likert scale (1=strongly disagree; to 7=strongly agree). Finally, 222 complete and valid responses were collected. Conducting the t-tests of demographics in early and late responders enabled us to determine that non-response bias was not a serious problem in our research. Thus, we can argue that the survey process is adequately designed.

4.2 Measurement Model and Preliminary Analyses

The measurement model was tested by assessing the reliability, convergent validity, and discriminant validity. We calculated Cronbach’s alpha (from 0.868 to 0.925) and composite reliability (from 0.920 to 0.944) to confirm the reliability of measurements.

Table 1. Correlations between Constructs

	Mean	S.D	LCMU	PPE	PIA	FSO	INT	UR
LCMU	4.856	1.749	0.892					
PPE	4.078	1.586	0.328	0.904				
PIA	5.725	1.395	0.223	0.111	0.908			
FSO	4.707	1.257	0.238	0.100	0.357	0.869		
INT	5.122	1.368	0.584	0.353	0.329	0.255	0.843	
UR	4.225	1.372	0.322	0.524	0.234	0.018	0.440	0.921

Note: The diagonal elements are the square roots of the AVEs; off-diagonal elements are the correlations between constructs.

Table 1 displays the means and standard deviations of all variables in the research model, along with the correlations among the variables. To assess the convergent and discriminant validity of the constructs, the AVEs of the constructs were also computed. The AVEs of all constructs were larger than 0.5. Thus, we deemed that the convergent validity for the variables was supported by the analysis. In addition, the convergent validity is also confirmed by the high level of item loading. The discriminant validity of the measurement model was further confirmed as the results showed the square root of the AVEs of all the constructs was greater than the correlations between constructs. In addition, the correlations among all variables were well below 0.6, suggesting that all the constructs were distinct from each other.

The single survey method of collecting data may cause common method variance (CMV) in our research. We used the method suggested by Liang, Saraf, Hu, & Xue (2007) to examine CMV. The substantive factors explained approximately 78% of the variance, whereas the method factor only explained approximately 0.5% of the variance. The results suggested that our data did not suffer from high CMV.

4.3 Hypothesis Testing Using PLS

The PLS results for the structural model are illustrated in Figure 1, in which the relationships between perceived information asymmetry and Live-Chat medium usage ($\beta=0.135$, $p<0.05$) and fears of seller opportunism and Live-Chat medium usage ($\beta=0.163$, $p<0.05$) are significant, thus supporting the hypotheses regarding the motivation factors. The results also indicate that ability factor (i.e., perceived personal expertise) significantly influences Live-Chat medium usage ($\beta=0.17$, $p<0.001$); thus, the positive impact of ability on usage is supported. The results from the inclusion of control variables and MOA factors as predictors explain 23.0% of the variance in Live-Chat medium usage.

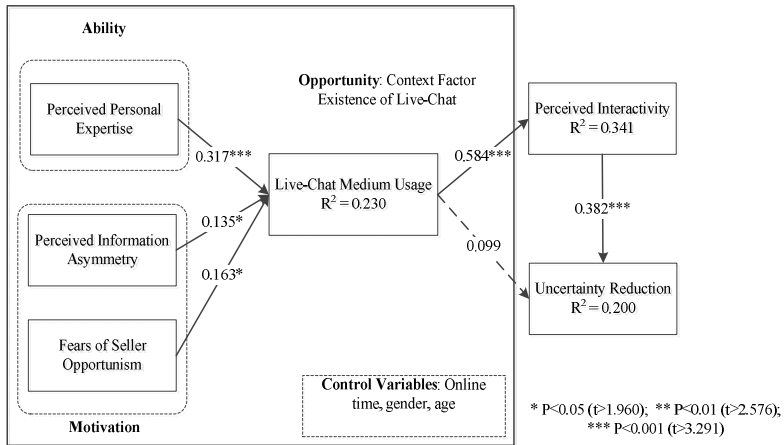


Fig. 1. PLS Results of the Proposed Research Model

For consequences, the results also suggest that Live-Chat medium usage has a positive effect on consumers' perceived interactivity ($R^2=0.341$, $\beta=0.584$, $p<0.001$), which in turn significantly increases their uncertainty reduction ($R^2=0.200$, $\beta=0.382$, $p<0.001$). The results of mediation effect test also confirm that the impact of Live-Chat media usage on uncertainty reduction is mediated by users' perceived interactivity. Thus, all proposed conceptual hypotheses are proposed.

5 Discussion

5.1 Limitations and Directions for Future Research

Before discussing the contributions of this study, we first state several limitations in this research, which are considered as opportunities for future research. First, this research only focuses on a subset of MOA antecedents of the Live-Chat medium in the model. Second, the interaction effects among MOA factors are not examined in our research. Inconsistent with prior MOA literature, we propose the sub-dimension constructs to present the MOA factors. Therefore, we could not simply evaluate their

interdependent relationships in our study. Third, our research is based on “Taobao” website. Customers may exhibit different behaviors when the Live-Chat medium is used on other websites (i.e., Amazon), which may cause bias in the analysis of the gratification factors. Therefore, extending this study to other cultures, such as the Western websites, will be interesting.

5.2 Theoretical Contributions and Implications

Our study contributes to the research in technology use, with a focus on the Live-Chat medium, a relatively new customer support technology that is gaining popularity on current online shopping websites. The theoretical implications of this study are as follows. First, it offers a new explanation for CMC media usage in e-commerce websites, a topic that has not yet been completely explored in the IS literature. Our research sheds further light on CMC studies by considering the interactive Live-Chat medium usage. Existing Live-Chat medium literature has mainly focused on the interface design (Qiu and Benbasat 2005) rather than on the perspective of the underlying rationale of consumer usage. We believe that this study represents an effort to investigate CMC medium usage in consumers’ online shopping process, which is important for e-commerce research.

Second, based on the MOA theory, we explore the motivation, opportunity, and ability antecedents of Live-Chat medium usage in consumers’ online shopping process. Our research extends the MOA framework to explore the sub-dimensions of the three general factors. We conceptualize that two motivation constructs and one ability construct positively affect consumers’ Live-Chat medium usage. Although prior studies have shed some light on the MOA factors (Gruen et al. 2007; Siemsen et al. 2008), they did not propose specific sub-dimensions and empirically test how the constructs of MOA factors separately influence technology use in an e-commerce environment.

Third, the research results contribute in presenting the impacts of Live-Chat usage in the e-commerce context. Consumers’ perceived interactivity is enhanced through Live-Chat. This premise suggests that the synchronized nature of Live-Chat is seen to benefit users by providing immediate information, which may also improve consumers’ intention to transact on e-commerce websites. Although prior literature provides a rich understanding of how perceived interactivity influences consumers’ online purchase, limited research has explained how interactivity influences consumers’ uncertainty reduction in e-commerce websites. Our research suggests that the impact of Live-Chat medium usage on uncertainty reduction is mediated by their perceived interactivity.

5.3 Practical Contributions and Implications

This study also has practical implications for website designers and sellers to improve their service quality through CMC media in the e-commerce context. In view of the need for e-commerce websites to facilitate online shopping, this study offers practical implications by identifying the antecedents and consequences for consumers’ usage of the Live-Chat medium. This medium is widely adopted by e-commerce websites in which consumers experience a high level of uncertainty when they conduct business

transactions with strangers. Human-to-human interaction enhances purchasing and renders the purchase process similar to a physical store encounter. Our empirical findings can provide insights for Live-Chat medium implementation. Furthermore, our findings suggest that motivation, opportunity, and ability factors are the key determinants of consumer Live-Chat medium usage. If consumers perceive a high level of information asymmetry and fears of seller opportunism in the shopping process, the Live-Chat medium can be adopted to facilitate purchase decision making. Website designers should also provide the necessary training for their consumers to improve their skills on using the related tools, such as Live-Chat. Furthermore, website designers should promote the use of the medium by consumers. Understanding what consumers want from Live-Chat use is vital for sellers. Sellers can serve their customers better only if they understand their goals and needs. For instance, this study indicates that consumers use Live-Chat to perceive interactivity. This finding cautions sellers to quickly answer consumers' questions and provide them with the feeling of companionship with other customers. In addition, improving consumers' perceived interactivity could significantly reduce their uncertainty in online transaction.

6 Conclusions

Building on the MOA framework, this study investigates consumers' antecedents and the consequences of Live-Chat usage in e-commerce websites. Our empirical findings suggest that motivation factors (e.g., information asymmetry and fears of seller opportunism), opportunity factors (e.g., existence of Live-Chat support), and ability factors (e.g., personal expertise) influence the Live-Chat usage of consumers in their online shopping process. The findings also imply that Live-Chat use improves consumers' perception of interactivity, which in turn reduces their uncertainty in online shopping. This research reinforces the understanding of the utility of computer-mediated communication in the e-commerce environment, and motivates website designers to offer better support of consumer behavior in information seeking.

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References

1. Achrol, R.S., Stern, L.W.: Environmental Determinants of Decision-Making Uncertainty Marketing Channels. *Journal of Marketing Research* 25(1), 36–50 (1988)
2. Adjei, M.T., Noble, S.M., Noble, C.H.: The Influence of C2C Communications in Online Brand Communities on Customer Purchase Behavior. *Journal of the Academy of Marketing Science* 38(5), 634–653 (2010)
3. Andrews, C.C., Haworth, K.: Online Customer Service Chat: Usability and Sociability Issues. *Journal of Internet Marketing* 2(1), 1–20 (2002)

4. Chatterjee, S., Datta, P.: Examining Inefficiencies and Consumer Uncertainty in E-Commerce. *Communications of the Association for Information Systems* 22(29), 525–546 (2008)
5. Chiu, H.C., Hsieh, Y.C., Kao, C.Y.: Website Quality and Customer's Behavioural Intention: An Exploratory Study of the Role of Information Asymmetry. *Total Quality Management* 16(2), 185–197 (2005)
6. Dellaert, B.G.C., Stremersch, S.: Marketing Mass-Customized Products: Striking a Balance Between Utility and Complexity. *Journal of Marketing Research* 42(2), 219–227 (2005)
7. Dimoka, A., Benbasat, I., Davis, F.D., Dennis, A.R., Gefen, D., Weber, B.: On the Use of Neurophysiological Tools in IS Research: Developing a Research Agenda for NeuroIS. *MIS Quarterly* 36(3), 679–702 (2012)
8. Dimoka, A., Hong, Y., Pavlou, P.A.: On Product Uncertainty in Online Markets: Theory and Evidence. *MIS Quarterly* 36(2), 395–426 (2012)
9. Flanagin, A.J.: Commercial Markets as Communication Markets: Uncertainty Reduction through Mediated Information Exchange in Online Auctions. *New Media & Society* 9(3), 401–423 (2007)
10. Fulk, J.: Social Construction of Communication Technology. *The Academy of Management Journal* 36(5), 921–950 (1993)
11. Goes, P., Ilk, N., Yue, W.T., Zhao, J.L.: Live-Chat Agent Assignments to Heterogeneous E-Customers under Imperfect Classification. *ACM Transactions on Management Information Systems* 2(4), 24:1–24:15 (2011)
12. Gruen, T.W., Osmonbekov, T., Czaplewski, A.J.: How E-communities Extend the Concept of Exchange in Marketing: An Application of the Motivation, Opportunity, Ability (MOA) Theory. *Marketing Theory* 5(1), 33–49 (2005)
13. Gruen, T.W., Osmonbekov, T., Czaplewski, A.J.: Customer-to-customer Exchange: Its MOA Antecedents and Its Impact on Value Creation and Loyalty. *Journal of the Academy of Marketing Science* 35(4), 537–549 (2007)
14. Guo, Z., Tan, F.B., Cheung, K.: Students' Uses and Gratifications for Using Computer-Mediated Communication Media in Learning Contexts. *Communications of the Association for Information Systems* 27, Article 20 (2010)
15. Hughes, J.: The Ability-Motivation-Opportunity Framework for Behavior Research in IS. In: *Proceedings of the 40th Annual Hawaii International Conference on System Sciences*, pp. 1–10 (2007)
16. Jiang, Z., Chan, J., Tan, B.C.Y., Chua, W.S.: Effects of Interactivity on Website Involvement and Purchase Intention. *Journal of the Association for Information Systems* 11(1), 34–59 (2010)
17. Liang, H., Saraf, N., Hu, Q., Xue, Y.: Assimilation of Enterprise Systems: the Effect of Institutional Pressures and the Mediating Role of Top Management. *MIS Quarterly* 31(1), 59–87 (2007)
18. Liu, Y.P.: Developing a Scale to Measure the Interactivity of Websites. *Journal of Advertising Research* 43(2), 207–216 (2003)
19. Lowry, P.B., Romano, N.C., Jenkins, J.L., Guthrie, R.W.: The CMC Interactivity Model: How Interactivity Enhances Communication Quality and Process Satisfaction in Lean-Media Groups. *Journal of Management Information Systems* 26(1), 155–196 (2009)
20. MacInnis, D.J., Jaworski, B.J.: Information Processing from Advertisements: Toward an Integrative Framework. *The Journal of Marketing* JSTOR 53(4), 1–23 (1989)

21. MacInnis, D.J., Moorman, C.M., Jaworski, B.J.: Enhancing and Measuring Consumers' Motivation, Opportunity, and Ability to Process Brand Information From Ads. *The Journal of Marketing* 55(4), 32–53 (1991)
22. Merrilees, B.: Interactivity Design as the Key to Managing Customer Relations in E-Commerce. *Journal of Relationship Marketing* 1(3-4), 111–126 (2002)
23. Ou, C.X.J., Davison, R.M.: Why eBay Lost to TaoBao in China: The Global Advantage. *Communications of the ACM* 52(1), 145–148 (2009)
24. Ou, C.X.J., Davison, R.M., Pavlou, P.A., Li, M.Y.: Leveraging Rich Communication Tools: Evidence of Online Trust and Guanxi in China. In: *ICIS 2008 Proceedings* (2008)
25. Pavlou, P.A., Liang, H., Xue, Y.: Understanding and Mitigating Uncertainty in Online Exchange Relationships: A Principal-Agent Perspective. *MIS Quarterly* 31(1), 105–136 (2007)
26. Peterson, R.A., Balasubramanian, S., Bronnenberg, B.J.: Exploring the implications of the Internet for consumer marketing. *Journal of the Academy of Marketing Science* 25(4), 329–346 (1997)
27. Qiu, L., Benbasat, I.: Online Consumer Trust and Live Help Interfaces: The Effects of Text-to-Speech Voice and Three-Dimensional Avatars. *International Journal of Human-Computer Interaction* 19(1), 75–94 (2005)
28. Schmitz, J., Fulk, J.: Organizational Colleagues, Media Richness, and Electronic Mail: A Test of the Social Influence Model of Technology Use. *Communication Research* 18(4), 487–523 (1991)
29. Siemsen, E., Roth, A., Balasubramanian, S.: How motivation, opportunity, and ability drive knowledge sharing: The constraining-factor model. *Journal of Operations Management* 26(3), 426–445 (2008)
30. Teo, H.-H., Oh, L.-B., Liu, C., Wei, K.-K.: An Empirical Study of the Effects of Interactivity on Web User Attitude. *International Journal of Human-Computer Studies* 58(3), 281–305 (2003)
31. Tezcan, T.: Design and Control of Customer Service Chat Systems. Working Paper (2011)
32. Thompson, R.L., Higgins, C.A., Howell, J.M.: Influence of Experience on Personal Computer Utilization: Testing a Conceptual Model. *Journal of Management Information Systems* 11(1), 167–187 (1994)
33. Tseng, C., Chang, M., Chen, C.: Human Factors of Knowledge Sharing Intention among Taiwanese Enterprises: A Preliminary Study 22(4), 328–339 (2012)
34. Weathers, D., Sharma, S., Wood, S.L.: Effects of online communication practices on consumer perceptions of performance uncertainty for search and experience goods. *Journal of Retailing* 83(4), 393–401 (2007)
35. You, W., Liu, L., Xia, M., Lv, C.: Reputation Inflation Detection in a Chinese C2C Market. *Electronic Commerce Research and Applications* 10(5), 510–519 (2011)