Liu Renming [1,] Dr. Mooi Wah Kian [2]

Research Article

# The Impact of Website Quality on Impulse Buying Behaviour in Social Commerce in the Context of COVID-19 Pandemic: Evidence from an Empirical Study in Shanghai

**Liu Renming [1] and Professor Dr. Mooi Wah Kian [2]**
[1] PhD Candidate, Infrastructure University Kuala Lumpur, Malaysia
[2] Senior Lecturer, Infrastructure University Kuala Lumpur, Malaysia

**Abstract:**
Revolutionary advances in e-commerce have given rise to a media-based shopping pattern known as social commerce (s-commerce). S-commerce leverages the social and commerce ecosystem to encourage shoppers to communicate and collaborate with others on media platforms to help sell goods or services. Although s-commerce is now morphing into an epidemic shopping channel, less literature has been devoted to examining the impact of s-commerce websites quality on consumers' impulse buying behaviour in the COVID-19 era. Drawing on cue utilization theory and WebQual approach, this paper aims to investigate the impact of external factors of website quality on impulse buying behaviour in s-commerce. A purposive sampling strategy was employed to collect empirical data from 282 s-commerce consumers in Shanghai via a questionnaire survey. Through the SPSS and AMOS analysis, we discovered that service interactivity, website usability and information quality all positively influence consumers' urge to buy impulsively and, in turn, impulse purchases. Based on our results, we recommend that s-commerce marketers should consider the externality dimension of site quality as it has a significant impact on motivating buyers to make impulse purchases. This study has contributed to the public's understanding of the theoretical relationship between website quality and impulse purchases in COVID-19.

**Key words:** Impulse Buying Behaviour; Website Quality; Social Commerce; COVID-19 Pandemic.

## 1. Introduction

The COVID-19 health crisis, which began in 2020, is still sweeping the world (Hossain et al., 2020), causing a continued slowdown in countries' GDP growth rates. Given the current steep rise in material costs and product prices, a large number of offline portals have closed and consumers have lost confidence and patience with brick-and-mortar shops. Under such pressure, s-commerce platforms such as WeChat, Xiaohongshu and Pinduoduo are increasingly becoming the preferred choice of consumers.

Through social networking sites (SNS), s-commerce leads consumers to actively share product or service content to reduce customer acquisition costs, while at the same time, s-commerce gains a premium from the upstream supply chain.

Derived from e-commerce, s-commerce is a media platform-based commercial model that specialises in the creation and sharing of user-generated content on SNS or in user communities (Hajli, 2015). However, unlike e-commerce, s-commerce centres primarily on multi-dimensional conversation interactions between individuals themselves, social communities and online businesses (San et al., 2020; Huang and Benyoucef, 2013). More specifically, consumers use community interaction and information exchange to perceive product and service cues to aid shopping, while media merchants use this 24/7 communication opportunity to enhance sticky connections with their audience (Khaled et al., 2019; Hajli, 2015). The industry report (PwC, 2016) indicated that 78% of people believe that s-commerce has influenced their shopping decisions and 43% tend to be immersed in interaction in social media.

S-commerce consumers often do not set clear spending goals, but external marketing cues such as website messages, advertising campaign and marketing stimuli during the social process may influence them to make unplanned purchases. This consumer behaviour is theoretically referred to as impulse buying and the three distinguishing features according to Chan et al. (2017) are stimulation by external cues, unplanned purchases and immediate purchases. Verhagen and van Dolen (2011) report that nearly half of online sales are contributed by impulsive consumers. Particularly in the now COVID-19 pandemic, the surge in online purchases was partly due to unplanned purchases (Thakur et al., 2020). Thus, it could be seen that impulsive purchases could effectively mitigate the global financial burden during COVID-19 (Zhang et al., 2020).

Recently, academicians have begun to investigate impulsive decision-making mechanisms in the COVID-19 era. For instance, Zhang et al. (2020) studied how mobile device factors (e.g., ease of use and visual appeal) influences impulse purchase behaviour. Regrettably, however, few works have focused on the impact of external features of websites quality on consumer impulse purchases in s-commerce. Given the gap in the literature, this study intends to propose a conceptual framework with the help of cue utilization theory and WebQual to analyse how three external attributes of s-commerce websites, namely information quality, website usability and service interactivity, affect consumers' online impulse purchases.

## 2. Theoretical Review and Hypothetical Development

**Cue Utilization Theory**

Cue utilisation theory, which is used to reveal consumers' evaluation of the quality of external things, has been gradually applied to the assessment of website quality in the last decade (Johnson and Wells, 2011). According to the theory, people often use some cues prompts to assess the quality of external things or a product or service (Richardson et al., 1994). The cues contain both confidence and predictive values, which reflect consumers' confidence in using the clues to judge the quality and their predictive judgments of the quality, respectively (Richardson et al., 1994). However, a common division nowadays is to subdivide both intrinsic and extrinsic cues based on the attributes of the product itself (Olson,

Liu Renming [1,] Dr. Mooi Wah Kian [2]

1972). Those factors that are not parts of the product, such as information and services, are regarded as extrinsic cues, while intrinsic cues, in contrast, are used to evaluate the attributes of the product itself. Johnson and Wells (2011) confirmed that consumers tend to rely on extrinsic cues to evaluate quality characteristics rather than intrinsic cues. So, based on Johnson and Wells (2011), this research will assess the impact of website quality on consumer buying behaviour from the perspective of external cues.

**Website Quality Assessment**

From the user's standpoint, website quality is the user's overall assessment of the functionality of the website they are exposed to. Consumers' purchase decisions often depend on an assessment of external cues to the quality of the website (Wells et al., 2011), and this assessment can even influence the occurrence of impulsive shopping behaviour (Chan et al., 2017). The WebQual 4.0, pioneered by Barnes and Vidgen (2005), is one of the approaches for assessing the impact of quality cues on consumer behaviour. It has recently been highlighted in research on the impact of website quality on consumer satisfaction (Bashir et al., 2020; Napitupulu, 2017) and user behavioural decisions (Frisdiantara, 2020). However, as far as we know, this approach has been applied less frequently to study the impact of website quality on consumers' impulse purchases in s-commerce in COVID-19.

The first dimension of WebQual 4.0 is website usability, where consumers judge the quality of an s-commerce website by some useful information such as navigation, ease of use, and visual cues. During the quarantine home shopping, websites with strong usability information not only influence consumers' attitudes to shop but also increase their willingness to buy. Previous work (Akram et al., 2017) has shown that website usability can have a significant impact on consumers' impulse purchases, even in COVID-19 (Zhang et al., 2020). Based on the past, we have formulated the first hypothesis:

*H1: During the COVID-19 epidemic, the usability of s-commerce websites significantly influenced consumers' urge to buy impulsively.*

The second one is service interactivity, which is the extent to which consumers perceive the quality of the services offered by the s-commerce website. When browsing an unfamiliar s-commerce site, consumers will assess the quality of the service based on the ability to communicate and collaborate, reputation for security, and personalised service. Prior research (Bressolles et al., 2007) has suggested that service interaction on websites can have an impact on impulse purchases. Based on the past, we make the second hypothesis:

*H2: During the COVID-19 epidemic, the service interactivity of s-commerce websites significantly influenced consumers' urge to buy impulsively.*

The final dimension to assess is the quality of information. Consumers will complete the assessment with reliable yet accurate site information and helpful site information prompts. Previous literature (Bressolles et al., 2007) has identified that information quality as an external factor in stimulating impulse purchases. Based on the predecessors' work, we, therefore, propose the third hypothesis:

*H3: During the COVID-19 epidemic, the information quality of s-commerce websites significantly influenced consumers' urge to buy impulsively.*

**Urge to Buy Impulsively and Impulse Buying**

Both academic term 'urge to buy impulsively' and 'impulse buying' are not identical but closely with each other. Impulse buying traditionally has been seen as an unplanned, sudden, on-the-spot purchase behaviour (Stern, 1962), where purchasers experience an urge to buy that lacks deliberation before making a purchase (Verhagen and van Dolen, 2011). It is a long-lasting and intense urge to buy that arises suddenly when a purchaser is exposed to external cue stimulus (e.g., website information) (Akram et al., 2017). In other words, the stimulus of external cues drives online buyers to make impulse purchases without making a purchase list (Chan et al., 2017). Experts (Verhagen and van Dolen, 2011) believe that the term 'urge to buy impulsively' has an emotional bent; it is an internal emotional signifier that precedes an impulse purchase. Whereas impulse buying is a real type of buying behaviour. Despite the semantic nuances between the two, Verhagen and van Dolen (2011) and Zhao et al. (2019) have suggested that urge to buy impulsively could prompt impulse buying. Therefore, we arrive at a final hypothesis:

*H4: During the COVID-19 epidemic, consumers' urge to buy impulsively significantly influenced consumers' impulse buying in s-commerce.*

In conclude, based on the literature review and research hypothesis, we propose the conceptualization framework for this paper, as follows.
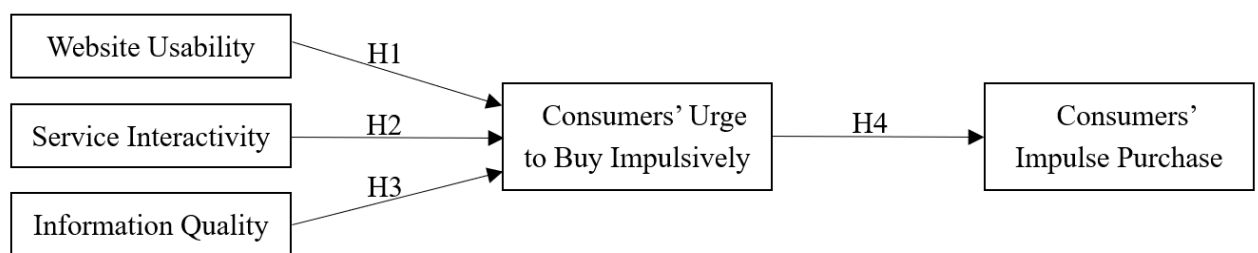


Figure 1. Conceptual Model

## 3. Research Method

A purposive sampling strategy was employed to distribute a 5-point Likert questionnaire to s-commerce buyers in Shanghai, China, via the WeChat and Xiaohongshu platforms. All items measured for the variables in this empirical study were taken from previous scholars' scales. Specifically, for website usability, we refer to Akram et al. (2017) and Napitupulu (2017), for information quality and service interactivity we refer to Napitupulu (2017), and the urge to buy impulsively and impulse buying is taken from Wells et al. (2011) and Zhao et al. (2019). Minor linguistic modifications have been made to suit the research context of the s-commerce in COVID-19.

We received a total of 324 questionnaires, but we excluded those that were not completed properly (e.g., missing or multiple choice). After screening, the valid questionnaires were 282, with a valid response rate of 87%. Of these (n=282), 51.4% were male and 48.6% were female, 77% of respondents were located between the ages of 18-30, 90% of respondents had a bachelor's degree or higher, and all questionnaire respondents had experience in s-commerce shopping in the period of COVID-19.

## 4. Data Analysis and Results

**Measurement Reliability and Validity**

Liu Renming [1,] Dr. Mooi Wah Kian [2]

We first evaluated the reliability and convergent validity of the questionnaire constructs through the SPSS (25.0 version) and AMOS (24.0 version). The results are displayed in Table 1. Cronbach value of all variables ranged from 0.878 to 0.983, which higher than the benchmark. Composite reliability values ranged from 0.874 to 0.948 and were also exceed the minimum line. In our results (see Table 1), the rotated factor loadings and the average variance extracted (AVE) were all above 0.8 and 0.6 respectively. In short, our reliability and convergent validity results are above the yardsticks recommended by Bagozzi and Yi (1988).

Table 1. Outcomes of Reliability and Convergent Validity

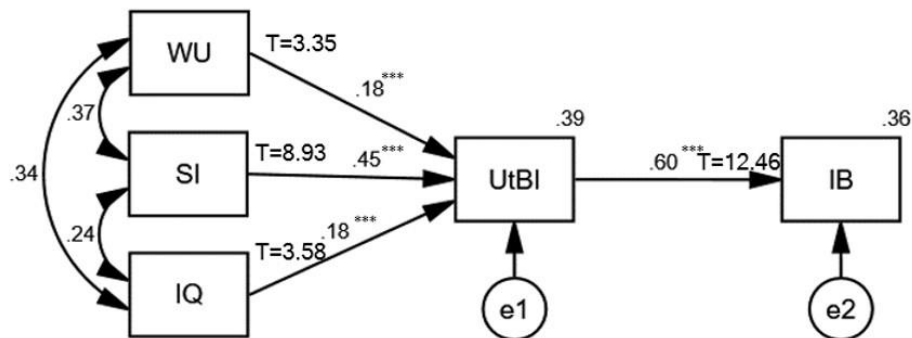| Constructs | Items | Rotated Factor Loading | Cronbach Value | KMO Value | Composite Reliability | AVE Value |
|---|---|---|---|---|---|---|
| Website Usability | UF1 | 0.933 | 0.965 | 0.756 | 0.948 | 0.860 |
| | UF2 | 0.935 | | | | |
| | UF3 | 0.915 | | | | |
| Service Interactivity | SIQ1 | 0.916 | 0.983 | 0.791 | 0.944 | 0.850 |
| | SIQ2 | 0.932 | | | | |
| | SIQ3 | 0.919 | | | | |
| Information Quality | IQ1 | 0.878 | 0.891 | 0.749 | 0.911 | 0.774 |
| | IQ2 | 0.873 | | | | |
| | IQ3 | 0.889 | | | | |
| Urge to Buy Impulsively | UtBI1 | 0.822 | 0.943 | 0.773 | 0.874 | 0.698 |
| | UtBI2 | 0.831 | | | | |
| | UtBI3 | 0.854 | | | | |
| Impulse Buying | IB1 | 0.843 | 0.878 | 0.743 | 0.876 | 0.703 |
| | IB2 | 0.859 | | | | |
| | IB3 | 0.813 | | | | |

Subsequently, we went on to use Fornell and Larcker's (1981) approach to evaluate discriminant validity. The results (see Table 2) demonstrated that the square root of the AVE for all variables located on the diagonal is greater than other inner construct correlation values. We, therefore, believed that the research model has good discriminant validity.

Table 2. Outcomes of the Discriminant Validity

| Constructs | | 1 | 2 | 3 | 4 | 5 |
|---|---|---|---|---|---|---|
| Website Usability | 1 | 0.927 | | | | |
| Service Interactivity | 2 | 0.367 | 0.921 | | | |
| Information Quality | 3 | 0.337 | 0.240 | 0.879 | | |
| Urge to Buy Impulsively | 4 | 0.402 | 0.560 | 0.347 | 0.835 | |
| Impulse Buying | 5 | 0.293 | 0.428 | 0.282 | 0.596 | 0.838 |

**Structural Model and Hypothesis Assessment**

Through the AMOS 24.0, we performed a confirmatory factor analysis (CFA) to examine whether our research model was statistically significant. The goodness-of-fit evidenced shown in Figure 2. The Chi-square=8.324, CMIN/DF=2.775, RMSEA=0.079, SRMR=0.034, TLI=0.948, GFI=0.988, CFI=0.984, NFI=0.976. All these indicators are within reasonable limits.



The Chi-Square = 8.324; The Degrees of Freedom = 3; CMIN/DF = 2.775; RMSEA = 0.079; SRMR = 0.034; TLI = 0.948; GFI = 0.988; CFI = 0.984; NFI = 0.976; AGFI = 0.942.

Figure 2. Amos Analysis Outcomes

The path analysis then led to several key findings. We found that website usability (WU: β-value=0.18, T-value=3.35, P<0.001), service interactivity (SI: β-value=0.45, T-value=8.93, p<0.001) and information quality (IQ: β-value=0.18, T-value=3.58, P<0.001) all significantly influence consumers' urge to buy impulsively. Thus, H1, H2 and H3 are substantiated in this paper. Moreover, we noticed that consumers' urge to buy impulsively significantly influenced their impulse buying (IB: β-value=0.60, T-value=12.46, P<0.001), which implies that H4 is accepted.

## 5. Discussions

Based on our outcomes, the current work has several original findings on the relationships between website quality and impulsive buying behaviour in s-commerce in the COVID-19 age. First of all, we confirmed that the quality characteristics of s-commerce websites, i.e., usability, service interactivity and information quality, all significantly influence consumers' urge to buy impulsively. Based on the standardized regression weights, we claim that service interactivity (β-value=0.45) has the greatest impact on consumers' urge to buy impulsively compared to the other two independent variables. In COVID-19, consumers became increasingly addicted to service interactions, communication and collaboration with s-commerce websites. Such interaction not only influences the consumer's purchase decision but in turn strengthens the relationship between the business and consumer. We thus highly recommend that s-commerce marketers improve the quality of their websites in terms of providing consumers with high-quality information and personalised service interactions to ultimately drive consumers' impulse buying behaviour. Next, we were surprised to find that consumers' internal urge to buy further influences their decision to make an impulse purchase. Although such a finding is similar to Verhagen and van Dolen (2011) and Zhao et al. (2019), the difference is that we tested their relationship in s-commerce in COVID-19. Finally, based on cue utilisation theory, we think that website quality of s-commerce is an external cue that cannot be ignored in stimulating the consumer's impulse

Liu Renming [1,] Dr. Mooi Wah Kian [2]

buying. The higher the level of website quality in s-commerce, whether in terms of functionality such as usability and informational, or in terms of interactivity such as service communication, the stronger the consumers' intrinsic urge to buy and the more likely they are to activate their impulse purchasing behaviour.

## 6. Limitations, Recommendations and Conclusions

S-commerce has created a mutually beneficial relationship between consumers and merchants, but little achievements have been devoted to drilling down on how websites quality affects impulse buying behaviour in s-commerce in COVID-19. Given the gap, we present a conceptualization framework to capture the relationship between website quality and impulse buying behaviour. We extend Barnes and Vidgen's (2005) WebQual to s-commerce in the context of COVID-19. This empirical study, which we completed in Shanghai, China, shows that all three dimensions of website quality included in this paper have a positive impact on consumers' impulse purchases behaviour.

Our empirical study fills some theoretical gaps, but the three weaknesses of this paper can be remedied in future research. Firstly, due to time constraints, we only collected a sample of s-commerce consumers in Shanghai, China. The results of the study may not be generalisable to other geographical areas. We, therefore, suggest that future research could investigate impulse buying behaviour in different cities or countries, and even in different cultural contexts. Secondly, the age of the respondents to our questionnaire was mainly between 18- 30 years old. We suggest that future work could studying impulse buying behaviour in different age groups. Thirdly, due to space constraints, we have only used cue utilization theory and the WebQual approach to help us capture the relationship between website quality and impulsive purchasing behaviour in s-commerce in COVID-19. For the future investigation, we strongly recommend that academics aim for the alternative theoretical lens.

## References

1. Akram, U., Hui, P., Khan, M. K., Saduzai, S. K., Akram, Z., & Bhati, M. H. (2017). The plight of humanity: Online impulse shopping in China. *Human Systems Management, 36*(1), 73-90.

2. Bagozzi, R. P., & Yi, Y. (1988). On the evaluation of structural equation models. *Journal of the Academy of Marketing Science, 16*(1), 74-94.

3. Barnes, S. J., & Vidgen, R. T. (2005). Data Triangulation in Action: Using Comment Analysis to Refine Web Quality Metrics. *Proceedings of the 13th European Conference on Information Systems, Information Systems in a Rapidly Changing Economy, ECIS 2005*, Regensburg, Germany, May 26-28, 2005. DBLP.

4. Bashir, M. A., Ali, M. H., Wai, L. M., Hossain, M. I., & Rahaman, M. S. (2020). Mediating Effect of Customer Perceived Value on the Relationship between Service Quality and Customer Satisfaction of E-Banking in Bangladesh. International Journal of Advanced Science and Technology. Vol. 29, No. 2, pp. 3590 – 3606

5. Bressolles, G., Durrieu, F., & Giraud, M. (2007). The impact of electronic service quality's dimensions on customer satisfaction and buying impulse. *Journal of Customer Behaviour.*

6.  Chan, T. K., Cheung, C. M., & Lee, Z. W. (2017). The state of online impulse-buying research: A literature analysis. *Information & Management, 54*(2), 204-217.

7.  Fornell, C., & Larcker, D. F. (1981). Structural equation models with unobservable variables and measurement error: algebra and statistics. *Journal of Marketing Research, 18*(1), 39-50.

*8.* Frisdiantara, C., Qamar, K., Ardian, Y., & Rahman, E. F. (2020). The Effect of Website Quality Using Webqual 4.0 Method on Student's Decision in Registering at University of Kanjuruhan Malang. *International Conference on Industrial Engineering and Operations Management.*

9.  Hajli, N. (2015). Social commerce constructs and consumer's intention to buy. *International Journal of Information Management, 35*(2), 183-191.

10. Hossain, M. I., Polas , M. R. H., Rahman, M. M., Islam, T., & Jamadar, Y. (2020). An Exploration of COVID-19 Pandemic and its Consequences on FMCG Industry in Bangladesh. *Journal of Management Info*, 7(3), 145-155. https://doi.org/10.31580/jmi.v7i3.1484

11. Huang, Z., & Benyoucef, M. (2013). From e-commerce to social commerce: A close look at design features. *Electronic Commerce Research and Applications, 12*(4), 246-259.

12. Johnson, N., & Wells, J. D. (2011). The Effect of Website Quality on Information Disclosure: A Cue Utilization Theory Perspective. In *AMCIS*.

13. Khaled, A. S., Ahmed, S., Tabash, M. I., Al-Homaidi, E. A., & Hossain, M. I.(2019). The Impact of Technological and Marketing Innovations on Retailing Industry: Evidence of India. *Journal of Reviews on Global Economics,* 8, 948-957

14. Napitupulu, D. (2017). Analysis of factors affecting the website quality (study case: xyz university). *International Journal on Advanced Science Engineering and Information Technology, 7*(3), 792-798.

15. Olson, J. (1972). *Cue Utilization in Quality Perception* (Doctoral dissertation, Dissertation, West Lafayette: Purdue University).

16. PwC. (2016). They say they want a revolution: total Retail 2016. Retrieved from. http://pwc.to/2kRAxYL.

17. Richardson, P. S., Dick, A. S., & Jain, A. K. (1994). Extrinsic and intrinsic cue effects on perceptions of store brand quality. *Journal of marketing, 58*(4), 28-36.

18. San, O. T, Teh, B. H, Kasbun,N. F.,  Mahroeian, H., Hossain, M. I. (2020).  Electronic Commerce Adoption among Malaysian SMEs. Journal of Critical Reviews. 7(19), 555-565.

19. Stern, H. (1962). The Significance of Impulse Buying Today. *Journal of Marketing, 26,* 59-62.

20. Thakur, C., Diwekar, A., Reddy, B. J., & Gajjala, N. (2020). A Study of the Online Impulse Buying Behaviour during COVID-19 Pandemic. *International Journal of Research in Engineering, Science and Management, 3*(9), 86-90.

21. Verhagen, T., & van Dolen, W. (2011). The influence of online store beliefs on consumer online impulse buying: A model and empirical application. *Information & Management, 48*(8), 320-327.

Liu Renming [1,] Dr. Mooi Wah Kian [2]

22. Wells, J. D., Parboteeah, V., & Valacich, J. S. (2011). Online impulse buying: understanding the interplay between consumer impulsiveness and website quality. *Journal of the Association for Information Systems, 12*(1), 3.

23. Zhang, W., Leng, X., & Liu, S. (2020). Research on mobile impulse purchase intention in the perspective of system users during covid-19. *Personal and Ubiquitous Computing*, 1-9.

24. Zhao, Z., Chen, M., & Zhang, W. (2019). Social community, personal involvement and psychological processes: a study of impulse buying in the online shopping carnival. *Journal of electronic commerce research, 20*(4), 255-272.