

Online Consumer Behavior: Framing Effects, Social Presence Theory and Flow Experience under E-commercial Environment

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Abstract: The rapid development of Internet has propelled commerce into an electronic age, changing the way of how consumers buy products and services. However, internet purchase behavior does not always resemble the traditional consumer purchase behavior as there are significant distinctions between the two that warrant a distinguishing conceptualization. In a virtual environment, the limited accessibility to comprehensive and accurate product information increases the likelihood of risky decision-making (e.g., impulsive buying) with the presentation of cognitive biases. Noticing the limited published studies focusing exclusively on online purchasing behavior, this essay intends to understand the extent of which the present psychological theories (i.e., framing effects, social presence theory, and flow theory) contribute to an understanding of online consumer behavior and the decision-making process, when taking account of the specific and distinct characteristics of the Internet. This research is helpful to theoretically understand consumer behavior under the e-commercial environment and provides insights to develop effective market strategies to promote consumptions.

Keywords: e-commerce, online purchasing behavior, framing effects, social presence, flow

1. Introduction

Humans make a variety of decisions daily, from trivial choices to complex decisions that require careful consideration. Consumer's decision-making is a complex process involving all the stages from problem recognition to post purchase activities when buying economic goods or services. Consumers search and gather information of products and services after recognizing their own needs and process the received information to form an evaluation for products and services according to their own personality characteristics and previous experience. Purchase behavior is generated by evaluating different alternatives. In the end, the individual will feed back the experience results during the purchase process to the brain, store it as his own experience, and provide reference for future purchase behavior.

The rapid development of Internet has propelled commerce into an electronic age, changing the way of how consumers buy products and services. Since the year of 2014, the number of global online shoppers has considerably increased, climbing from 1.32 billion to 2.14 billion in 2021[1]. In particular, the spread of COVID-19 pandemic has generated a dramatic rise in online shopping,

showing a 27.6% global growth in e-commerce sales, and it is predicted to maintain a significant upward trend without signs to slow down in the future [2].

However, internet purchase behavior does not always resemble traditional consumer purchase behavior as there are significant distinctions between the two that warrant a distinguishing conceptualization. For instance, online consumers rely on limited set of product representations like images and written descriptions to make purchases as they are unable to depend on all five senses. Besides, the social and work environment of online consumers differ significantly from those of the offline consumers which involves an interaction with the computer system [3]. Consequently, these have a potential impact on the ability to access comprehensive and accurate product information with an increased likelihood of risky decision-making (e.g., impulsive buying) [4]. Heuristics and biases are frequently used to reduce the cognitive load that comes with decision making. Therefore, the specific characteristics of Internet and the underlying psychological process influencing how people make rational decisions in e-commercial environment is of considerable interests of research. Noticing the limited published studies focusing exclusively on online purchasing behavior, this essay intends (1) to present a thorough review of up-to-date body of literature, (2) to understand the extent of which the existing papers help to understand online consumer behavior, and (3) to identify the current psychological theories underlying the online consumer behavior and decision-making. The remaining part of this paper will be arranged as follows: part 2 to 4 will briefly introduce framing effects, social presence theory, and flow theory respectively; part 5 will summarize the key takeaways from this paper.

2. Framing Effects

2.1. Theoretical Principal

Traditionally, standard preference theory suggested that preferences are constant regardless of alterations in how the options are described and are independent of the specific method in which preferences are measured [5]. However, these assumptions have been violated due to the imperfection of human perceptions. This can be understood through the concept of “framing effects”, which states that trivial variations in wording of options can occasionally result in significant changes of preferences [6].

Framing effect can be explained by the prospect theory proposed by Kahneman and Tversky [7]. Two distinct phases are involved in a choice process, namely editing and evaluation. Specifically, in the editing stage, an initial analysis is conducted by interpreting the results as gains or losses with respect to the neutral reference point. In terms of evaluation stage, choices are determined by a s-shaped value function with a reference point. The shape of the function implies that changes in outcomes have greater impacts nearer the reference point than moving farther away from the point (i.e., diminishing sensitivity), and the pain from losses has stronger impact than pleasure from the equivalent gains (i.e., loss aversion), as demonstrated in Figure 1 [8].

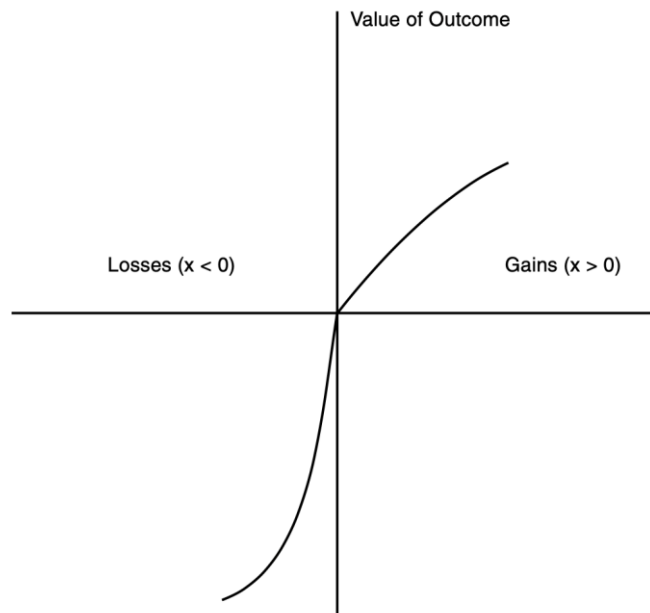


Figure 1: The valuation of outcomes in prospect theory.

Source: 5. Camerer, C. F., Loewenstein, G., & Rabin, M. (Eds.). (2004). *Advances in behavioral economics*. Princeton university press.

2.2. Framing Effects and Consumer Decision Making

Previous research has suggested that traditional consuming decision-making process is often influenced by the framing effect under different occasions. Although the existing literature did not provide great details about whether there are different impacts on online purchasing behavior, it is reasonable to assume that framing effect of online environment would have other significant impact on purchasing behaviors and decision-making. For instance, “message framing” is a one of the commonly used communication tactics, swaying opinions, attitudes, and behaviors through framing equivalent appeals as either the advantages gained of purchasing goods or services (i.e., positive framing) or the negative results of rejecting to purchasing goods or services (i.e., negative framing) [9].

Previous studies have demonstrated somewhat contradictory and inconsistent research findings. For instance, Van de Velde et al. suggested that a positively framed message focusing on the potential solutions (e.g., an alternative use of environmentally friendly energy sources) is more effective to prevent and reduce environmental problems compared to negatively framed messages strengthening the severity of the problem by showing the detrimental effects [10]. However, Moon et al. found that emphasizing the negative impact of continuing to use gasoline (e.g., air pollution) rather than highlighting the positive consequence facilitates the biofuel adoption [11]. Likewise, Shan et al. demonstrated that negatively framed message significantly enhances the effectiveness of advertising by showing more favorable attitudes and higher purchase intentions compared to positively framed message [12].

It has been argued that the reason for the mixed results is because previous studies have employed various operational definitions of framing which tapped into different underlying processes and would significantly change consumers' purchasing intention [13]. Particularly, positive descriptions can stimulate consumers' purchase intention under the attributed framing effect, while information that emphasizes undesirable outcome or detrimental consequences of not taking an action is perceived as more persuasive than information that emphasizes the benefits or advantages under the goal

framing effect [14]. However, the effect of a particular framing type is too complex to predict since it depends heavily on the research topic and situational variables, such as types of health behavior, involvement of participants as well as is affected by individual differences [15]. For instance, increased consumer's product knowledge promotes effective and accurate information processing, thereby weakening framing effect and helping to form stable preferences and purchase intention [16]. In contrast, consumers with less knowledge tend to purchase according to inadequate experience and incomplete information processing, and in turn become more susceptible to framing effect [17].

3. Social Presence Theory

3.1. Theory Principal

Social presence is grounded in the information richness theory and some academics define it as the degree of perception of contact with others when use media to communicate [18]. From a psychological perspective, social presence is closely correlated with intimacy [19].

3.2. The Impact of Social Presence on Consumer Purchase Intention

The perception of social presence significantly affects consumer's attitude, behavioral intentions, and actual purchasing behavior on a commercial website. Specifically, the perceived social presence contributes to positive emotions during shopping experience, which are associated with a number of desirable consequences, including longer shopping time, higher spending in-store, and more unplanned purchasing behavior [20]. Meanwhile, social presence usually plays an important role in influencing online trust, which has been recognized as a key concept of e-commerce due to its significant role in reducing the perception of uncertainty and risk and facilitating online transactions [21]. Particularly, the perceived social presence positively influences the perceived usefulness, online trust, and shopping enjoyment within the business to commercial online services link, leading to higher customer loyalty towards e-services website, but that the relationship between perceived social presence and online purchasing intention is moderated by the type of online product [22]. For instance, the perception of social presence does not exhibit positive effects on websites selling headphones where consumers primarily seek comprehensive product information, while benefits websites selling apparel where consumers seek enjoyment and entertainment during shopping experience [23]. In contrast, the absence of genuine social connection and product information when shopping online leaves consumers' decision-making process highly vulnerable to uncertainty, which may have an undesirable impact on consumer purchase intention [24].

In an e-commercial environment, the perceived social presence could be established via virtually re-embedding social cues to mimic face-to-face communication. It is achieved either through real interactions with others or by promoting imaginary interactions via technology [19]. Particularly, actual interactions with other humans may be implemented synchronously or asynchronously in the context of online purchasing through means like online chats, virtual communities, and human web assistants [25]. On the other hand, simulated interactions can be generated automatically by a computer without any direct human involvement, such specifically designed website features, which includes rich text, personalized greetings, message boards, and recommendation/intelligent agents [26, 27]. For instance, Hassanein and Head suggested that social presence could be instilled into the online links via socially rich descriptions and figures of human, which in turn increases perceived usefulness, online trust, and enjoyment of commercial online links [24].

4. Flow Theory

4.1. Theory Principal

The flow theory is generally referred to as “optimal experience while acting with entire involvement” [25]. Hoffman and Novak firstly extended its general definition [26]. A theoretical model of flow has been subsequently developed within the hypermedia environment of the websites, as demonstrated in Figure 2.

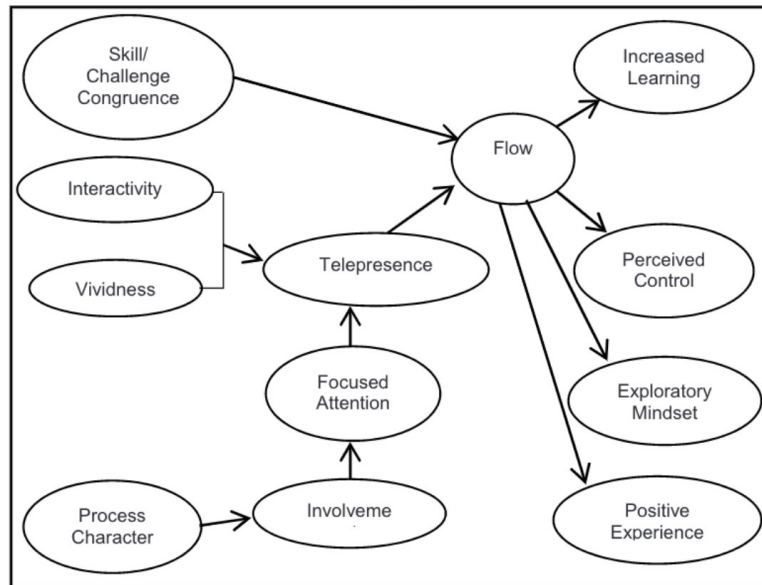


Figure 2: A model of flow within a hypermedia environment
Photo credit: Original

According to Csikszentmihalyi's research, the primary antecedents to flow are challenges, skills, and focused attention [27]. 2 secondary antecedents are added subsequently which are interactivity and telepresence respectively. The telepresence has been defined as "the degree to which one feels present in a hypermediated environment, instead of within the immediate physical world" and identifies vividness and interactivity as content characteristics that directly influence telepresence within a particular technology [28]. At the same time, the construct of involvement (i.e., intrinsic motivation and self-reliance) is added to the model which is influenced by two process characteristics (i.e., goal-directed, or experiential activity). Specifically, consumers who experience flow are completely immersed in the process of online navigation and focus exclusively on the interaction such that irrelevant thoughts and perceptions are filtered out. Little attention has been left to think about anything else and hence other events that take place in the physical surroundings lose significance. At the same time, self-consciousness disappears, the consumer's sense of time gets distorted, and the mental state that results from achieving flow is highly satisfying. Consequently, a psychological state of flow can result in favorable outcomes, including an increased learning, perceived control, exploratory mind-set, and positive subjective experience [27].

4.2. Flow Experience and Online Consumer Behavior

Investigating flow experiences on the websites is particularly intriguing because several positive consequences are expected when users are in a state of flow. Specifically, flow experience positively affects attitude toward purchasing online, which in turn promotes behavioral intentions to engage in

online transactions [29]. Meanwhile, the experience of flow elicits favorable evaluation of website, with different components of the flow experience (attention, curiosity, perceived control, and interests) facilitating utilitarian and hedonic aspects of web performance [30]. In addition, flow is related to a website's usefulness and perceived ease of use, which in turn influence the behavioral intention to usage [31]. However, male and female weight intrinsic (i.e., flow) and extrinsic motive (i.e., usefulness) differently on the web, with male engaging in behaviors without previously modifying their attitudes and taking less time to make a purchasing decision [32]. Furthermore, the concept of flow can be used to explain customer loyalty to the commercial websites, beginning with Hoffman and Novak, who regard flow as "the 'glue' holding the consumer in the hypermedia computer mediated environment" [27]. For instance, Koufaris et al. demonstrated that perceived usefulness and shopping enjoyment can promote the new customers' intention to return but have little influence on repeat customers' intention to return [33]. Meanwhile, a website that employs value-added search mechanisms (e.g., customer review of the product) can increase customers' shopping enjoyment that in turn affect their behavior, especially for customers with low need-specificity (i.e., who are unsure of what they are looking for). However, there is little or no relationship between unplanned purchasing behavior and components of flow (i.e., enjoyment, concentration, and perceived control), suggesting that the model of flow can only be used under specific circumstances with great cautious, and other new predictors which have not been empirically examined may come into play [33].

5. Conclusion

Overall, this paper contributes to a theoretical understanding of online consumer behavior and decision-making process, with a thorough review of framing effects, social presence theory, and flow theory, and their applications under the e-commercial environment. Firstly, preferences are not held invariably, rather being influenced by how the information is framed. Negatively framed message emphasizing the consequences incurred often enhances the persuasion of advertisements by showing more favorable attitudes and higher purchase intentions compared to positively framed message emphasizing the benefits gained. However, the effect of framing is hard to predict since it highly depends on the research topic and situational variables as well as the individual differences. Secondly, the social presence plays an essential role in affecting consumer purchasing decision-making from a commercial website, which is commonly perceived as being impersonal, anonymous, and automated. The perception social presence can be established through actual interactions with other humans or by automatically stimulating imaginary interaction by a computer without human involvement. Thirdly, a psychological state of flow when surfing on the websites can result several positive and desirable consequences on purchasing attitudes and behaviors. As a result, our paper has potential practical implications for business to design effective market strategies to enhance customer satisfaction and brand loyalty.

References

- [1] Statista Search Department (2021, May). *Annual retail e-commerce sales growth worldwide from 2017 to 2025* [Infographic]. Statista. <https://www.statista.com/statistics/288487/forecast-of-global-b2c-e-commerce-growth/>.
- [2] Statista Search Department (2017, July). *Number of digital buyers worldwide from 2014 to 2021 (in billion)* [Infographic]. Statista. <https://www.statista.com/statistics/251666/number-of-digital-buyers-worldwide/>.
- [3] Koufaris, M. (2002). *Applying the Technology Acceptance Model and Flow Theory to Online Consumer Behavior*. *Information Systems Research*, 13(2), 205–223. <http://www.jstor.org/stable/23011056>.
- [4] Li, X., & Ling, W. (2015). *How framing effect impact on decision making on internet shopping*. *Open Journal of Business and Management*, 3(01), 96.
- [5] Camerer, C. F., Loewenstein, G., & Rabin, M. (Eds.). (2004). *Advances in behavioral economics*. Princeton university press.

- [6] Tversky, A., & Kahneman, D. (1979). *An analysis of decision under risk*. *Econometrica*, 47(2), 263-292.
- [7] Tversky, A., & Kahneman, D. (1979). *An analysis of decision under risk*. *Econometrica*, 47(2), 263-292.
- [8] Tversky, A., & Kahneman, D. (1992). *Advances in prospect theory: Cumulative representation of uncertainty*. *Journal of Risk and uncertainty*, 5(4), 297-323.
- [9] Levin, I. P., Schneider, S. L., & Gaeth, G. J. (1998). *All frames are not created equal: A typology and critical analysis of framing effects*. *Organizational behavior and human decision processes*, 76(2), 149-188.
- [10] Van de Velde, L., Verbeke, W., Popp, M., & Van Huylenbroeck, G. (2010). *The importance of message framing for providing information about sustainability and environmental aspects of energy*. *Energy Policy*, 38(10), 5541-5549.
- [11] Moon, S., Bergey, P. K., Bove, L. L., & Robinson, S. (2016). *Message framing and individual traits in adopting innovative, sustainable products (ISPs): Evidence from biofuel adoption*. *Journal of Business Research*, 69(9), 3553-3560.
- [12] Shan, L., Diao, H., & Wu, L. (2020). *Influence of the framing effect, anchoring effect, and knowledge on consumers' attitude and purchase intention of organic food*. *Frontiers in Psychology*, 11, 2022.
- [13] Liang, C.L. and Li, X.R. (2012). *The Effect of Framing Message on Impulse Buying Behavior*. *Journal of Shandong University of Finance*, 1, 72-81.
- [14] Dai, Jian-Hua., Hai-Yun, M., & Yingying, W. (2018). *Framing Effect of Online Store Information Presentation on Consumer's Purchasing Decisions*. In *Proceedings of the 2018 2nd International Conference on Software and e-Business* (pp. 20-23).
- [15] Krishnamurthy, P., Carter, P., & Blair, E. (2001). *Attribute framing and goal framing effects in health decisions*. *Organizational behavior and human decision processes*, 85(2), 382-399.
- [16] Cai, G., Chen, R., and Zhao, P. (2016). *Research on the influence of consumer knowledge and information recommendation agent on brand loyalty*. *China Soft Sci*. 10, 123-134.
- [17] Kinder, D. R., & Sanders, L. M. (1990). *Mimicking political debate with survey questions: The case of White opinion on affirmative action for Blacks*. *Social Cognition*, 8(1), 73-103. <https://doi.org/10.1521/soco.1990.8.1.73>
- [18] Gefen, D., & Straub, D. (2003). *Managing user trust in B2C e-services*. *e-Service*, 2(2), 7-24.
- [19] Yoo, Y., & Alavi, M. (2001). *Media and group cohesion: Relative influences on social presence, task participation, and group consensus*. *MIS quarterly*, 371-390.
- [20] Jones, M. A. (1999). *Entertaining shopping experiences: an exploratory investigation*. *Journal of retailing and consumer services*, 6(3), 129-139.
- [21] Lu, B., Fan, W., & Zhou, M. (2016). *Social presence, trust, and social commerce purchase intention: An empirical research*. *Computers in Human behavior*, 56, 225-237.
- [22] Cyr, D., Hassanein, K., Head, M., & Ivanov, A. (2007). *The role of social presence in establishing loyalty in e-service environments*. *Interacting with computers*, 19(1), 43-56.
- [23] Hassanein, K., & Head, M. (2005). *The impact of infusing social presence in the web interface: An investigation across product types*. *International Journal of Electronic Commerce*, 10(2), 31-55.
- [24] Hassanein, K., & Head, M. (2007). *Manipulating perceived social presence through the web interface and its impact on attitude towards online shopping*. *International journal of human-computer studies*, 65(8), 689-708.
- [25] Kumar, N., & Benbasat, I. (2002). *Para-social presence and communication capabilities of a web site: a theoretical perspective*. *e-Service*, 1(3), 5-24.
- [26] Cyr, D., Hassanein, K., Head, M., & Ivanov, A. (2007). *The role of social presence in establishing loyalty in e-service environments*. *Interacting with computers*, 19(1), 43-56.
- [27] Choi, J., Lee, H. J., & Kim, Y. C. (2011). *The influence of social presence on customer intention to reuse online recommender systems: The roles of personalization and product type*. *International Journal of Electronic Commerce*, 16(1), 129-154.
- [28] Steuer, J. (1992). *Defining virtual reality: Dimensions determining telepresence*. *Journal of communication*, 42(4), 73-93.
- [29] Korzaan, M. L. (2003). *Going with the flow: Predicting online purchase intentions*. *Journal of Computer Information Systems*, 43(4), 25-31.
- [30] Huang, M. H. (2003). *Designing website attributes to induce experiential encounters*. *Computers in Human Behavior*, 19(4), 425-442.
- [31] Agarwal, R., & Karahanna, E. (2000). *Time flies when you're having fun: Cognitive absorption and beliefs about information technology usage*. *MIS quarterly*, 665-694.
- [32] Sanchez-Franco, M. J. (2006). *Exploring the influence of gender on the web usage via partial least squares*. *Behaviour & Information Technology*, 25(1), 19-36.
- [33] Csikszentmihalyi, M. (1977) *Beyond Boredom and Anxiety*. Jossey-Bass, San Francisco.