Impact of Persuasion Processes on Consumer Attitude Towards Online Shopping: The Moderating Role of Product Involvement and Consumer Self-Efficacy

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Abstract

Online vendors expand significant efforts in attracting consumers to their websites. However, once a consumer lands on a vendor's website, a more challenging task is to convince her/him to actually transact with the website by purchasing products. This research-in-progress study draws on the elaboration-likelihood model (ELM) to develop a theoretical model for the impacts of different persuasion processes (peripheral and central routes) on consumer attitude towards purchasing products online. We also propose motivational and ability factors that are likely to moderate the effects of these different persuasion processes on attitude. A survey-based methodology is outlined to empirically validate the proposed research model using structural equation modelling techniques. Potential contributions from this research to both theory and practice are also outlined.

Keywords

Persuasion, involvement, self-efficacy, peripheral routes, central routes.

Introduction

A main goal for online vendors is to increase consumers' positive attitude toward shopping for online products which has a strong impact on consumers' purchase intention, loyalty, and repeat purchases (Hassanein & Head 2007). Prior research in this area has identified several factors (e.g., perceived usefulness, perceived enjoyment, and trust) that are believed to impact consumers' attitude towards purchasing online products (e.g., Van der Heijden et al. 2003; Hassanein & Head 2007). However, our understanding of the nature and role of different persuasion processes in improving consumers' attitudes towards shopping online remains scant. For instance, we are not aware of any research that explains which persuasion processes are most effective in influencing consumer attitude, and whether such persuasion applies equally or differentially across consumers with different levels of ability (e.g., self-efficacy) and different levels of motivation (e.g., product involvement). The proposed research study attempts to fill these gaps in the literature. Thus, the main purpose of this study is to understand what persuasion processes would predict consumers' attitude to shop online products.

The elaboration-likelihood model (ELM) is a theoretical perspective that can help inform our understanding of persuasion processes in purchasing online products. The ELM categorizes persuasion processes into peripheral (e.g, reputation) and central (e.g, information quality) routes based on the type of information processed by a consumer. It explains circumstances under which an individual may be more impacted by one route over the other (Petty & Cacioppo 1986). Based on theoretical prescriptions from the ELM, the main research questions for this study are:

RQ1: Which persuasion process (central or peripheral) has a more significant impact on consumer attitude toward purchasing online products?

RQ2: Do the effects of persuasion processes vary across consumers with different levels of consumer self-efficacy?

RQ3: Do the effects of persuasive processes vary across products with different levels of consumer involvement?

Theoretical Background

Petty et al. (1981) proposed ELM in order to explain how a person deals with various persuasion processes. They suggest that the cognitive effort an individual devotes to processing an argument depends on her/his likelihood of elaboration. The degree of elaboration likelihood refers to the extent to which a person carefully evaluates the argument. As can be seen in Figure 1, ELM suggests that there are two different persuasion routes: central and peripheral, which differ in the "elaboration" or the amount of thoughtful information processing demanded of an individual (Petty & Cacioppo 1986). When individuals have a high level of ability to process the arguments and when they are highly involved with the arguments, attitude changes could be induced via the central route, where an individual attempts to thoughtfully and deliberately assesses the content of messages (Petty & Cacioppo 1986).

On the other hand, when individuals do not have a high level of ability and when they are not highly involved with the arguments, attitude changes could be induced via the peripheral route, where individuals devote limited cognitive effort to processing information due to a lack of ability and motivation (Yang et al. 2006).
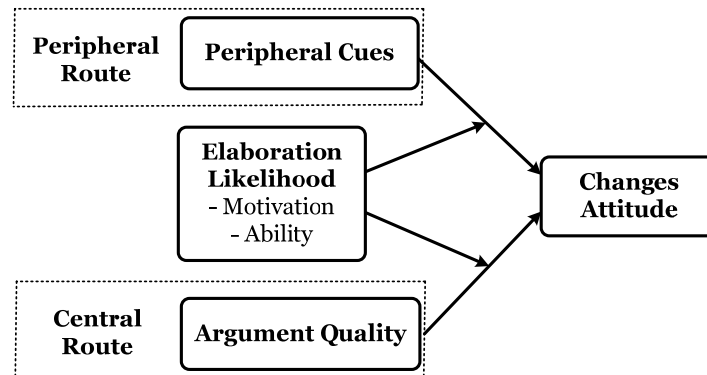

Figure 1. Elaboration Likelihood Model (Bhattacherjee & Sanford 2006)

Research Model and Hypotheses

To answer the research questions identified for this study, we propose the research model shown in Figure 2 which is based on ELM.

Attitude toward a website defined as a "predisposition to respond favorably or unfavorably to Web content in natural exposure situations" (Chen 1999). This definition states that attitude is a disposition which influences individual behavior.

Peripheral Routes

Based on ELM, vendors can persuade consumers by using peripheral cues in the online environment. Bhattacherjee and Sanford (2006) suggest that because peripheral cues appeal to human affect, they are likely to influence individuals' attitude. Along these lines, Hong et al. (2004) argue that website design plays an important role in affecting customers' attitude towards websites. Thus, we hypothesize that:

H1: *Higher perceived professional website design will positively influence consumers' attitude toward purchasing online products.*
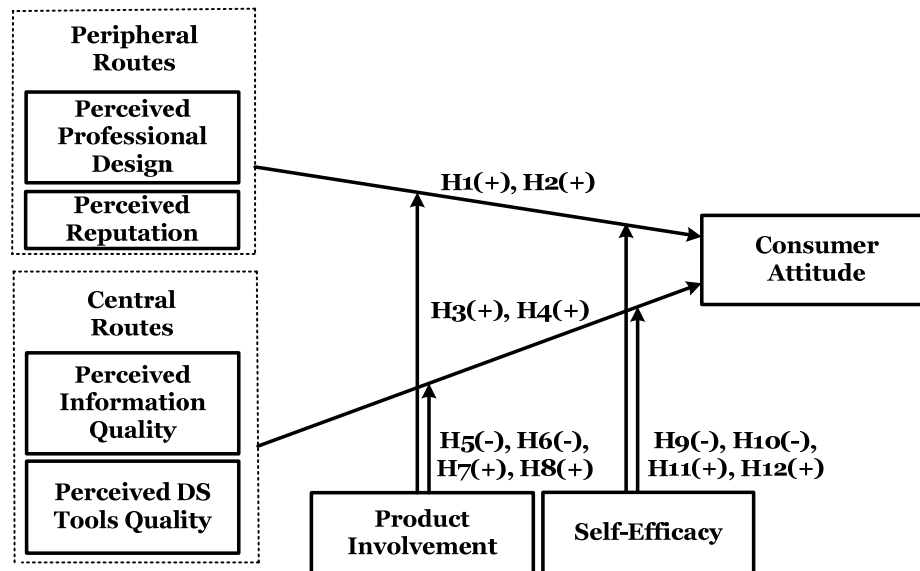
Figure 2. Proposed research model

Reputation refers to the extent to which consumers believe that the vendor is honest and concerned about its customers (Koufaris & Hampton-Sosa 2004). Based on ELM, vendors can persuade consumers by using peripheral cues, such as establishing a positive reputation. Consumers usually perceive a seller with a good reputation as having a high level of ability to deliver products at the promised terms. Jarvenpaa et al. (1999) found that consumers perceived vendor's reputation positively influence their trust in the website, attitudes, and willingness to buy from a website. Thus, we hypothesize that:

H2: *Higher perceived vendor reputation will positively influence consumers' attitude toward purchasing online products from that vendor.*

Central Routes

According to ELM, vendors can persuade consumers to purchase their products by using central cues, such as providing high quality information (Petty & Cacioppo 1986). Online information varies a great deal in quality, ranging from highly unreliable and inaccurate to reliable and accurate (Kim et al. 2008). Many studies found that high quality information creates more favorable attitudes in individuals (Chu et al. 2005; Chung 2013). Thus, we hypothesize that:

H3: *Higher perceived information quality will positively influence consumers' attitude toward purchasing online products.*

A response to the problem of information overload in the online shopping environment is the emergence of online decision support (DS) tools for (Häubl & Murray 2001). DS tools such as product comparison matrices and recommendation agents help consumers to make better online decisions (Park & Gretzel. 2010; Ghasemaghaei et al. 2014). Studies show that with the help of DS tools, consumers feel more informed in making purchasing decision which, in turn, has a strong effect on their attitudes towards shopping from a website (Smith et al. 2011, Klassen et al. (2009). It is logical to expect that higher quality DS tools will result in a better online shopping experience for consumers leading them to have more favorable attitudes towards purchasing online products from a particular website. Thus, we hypothesize that:

H4: *Higher perceived DS tools quality will positively influence consumers' attitude toward purchasing online products.*

The Role of Moderators

Involvement refers to "a person's motivational state directed toward a goal object for accomplishing a specific goal. The goal object can be a product class, a purchase decision, a specific brand, or an

advertisement" (Park & Mittal 1985). A product is said to be of high involvement for a customer when she/he perceives it to be of high importance for her/him. A product is said to be of low involvement for a customer when she/he perceives it to be of low importance for her/him. (Antil 1984). Consumers may differ in the extent of their search for product information depending on the product's level of involvement (Laurent & Kapferer 1985). Consumers who are looking for high involvement products (e.g., laptop, TV, sofa) will engage in more extensive information searches compared those who are looking for low involvement products (e.g., CDs, light bulbs, and pens) (Von Reischach et al. 2010). Thus, for high involvement products, consumers may pay more attention to the quality of the product information, while for low involvement products they may pay less attention to information quality. Moreover, Ghasemaghaei and Hassanein (2013a) suggest that consumers will put emphasis on using DS tools to obtain more product information (e.g., product comparisons) for high involvement products before they make their purchasing decisions.

Based on ELM, the cognitive effort a consumer devotes to processing an argument depends on her/his likelihood of elaboration (Petty et al. 1981). Petty and Cacioppo (1986) claim that when consumers are highly involved with the arguments, attitude changes will be induced via central route, where they attempt to deliberately and thoughtfully evaluate the content of messages. On the other hand, consumers who want to purchase low involvement products are less motivated to engage in extensive elaboration, and may often rely on peripheral cues such as vendor reputation and website design for shaping their personal attitudes toward purchasing a product from a website. Thus, we hypothesize that:

H5: *Product involvement has a negative moderating effect on the association between vendor reputation and consumers' attitude toward purchasing online products.*

H6: *Product involvement has a negative moderating effect on the association between professional website design and consumers' attitude toward purchasing online products.*

H7: *Product involvement has a positive moderating effect on the association between information quality and consumers' attitude toward purchasing online products.*

H8: *Product involvement has a positive moderating effect on the association between DS tools quality and consumers' attitude toward purchasing online products.*

Self-efficacy refers to the beliefs in one's ability to perform a given task (Bandura, 1997). O'Cass and Fenech (2003) suggest that when consumers have accumulated adequate experience via their adoption of the online technologies, it creates a belief in them that they have the ability to purchase online products.

Consumers with the high level of self-efficacy in using websites are expected to be more inclined to carefully scrutinize product information to form an informed judgment about purchasing that product. In the context of IT adoption, Bhattacherjee and Sanford (2006) suggest that users with high abilities do not rely much on peripheral cues, because they tend to be more aware of the possibility of bias, inaccuracy, and lack of realism in such cues. In contrast, they note that novice users rely more on peripheral cues such as source credibility instead of message arguments for shaping their attitude perceptions. Thus, in the context of this study, we hypothesize that:

H9: *Consumer self-efficacy has a negative moderating effect on the association between vendor reputation and consumers' attitude toward purchasing online products.*

H10: *Consumer self-efficacy has a negative moderating effect on the association between professional website design and consumers' attitude toward purchasing online products.*

H11: *Consumer self-efficacy has a positive moderating effect on the association between information quality and consumers' attitude toward purchasing online products.*

H12: *Consumer self-efficacy has a positive moderating effect on the association between DS tools quality and consumers' attitude toward purchasing online products.*

Methodology

Research Methodology

The proposed study will involve a cross-sectional survey of general online shoppers who will be recruited through a market research firm. The first question will ask participants about the last product they have purchased online, which they can clearly recall. They will then be asked to respond to the questions measuring their perceived self-efficacy in using websites to shop for products online (this will allow us to create four groups of approximately the same size for all combinations of our moderating variables). They will then be directed to complete the survey instrument. Participants' online experience, education, product interest, their online DS tools experience, and gender will be controlled for in the model. Participation will be voluntary, and each participant will be given monetary compensation for his/her participation.

Measurement Instrument

To ensure content validity, measurement scales for most constructs in the proposed research model were chosen from the extant literature. Information quality will be measured using a 4-item scale adapted from Wixom and Todd (2005). Professional website design will also be measured using a 5-item scale from Cyr and Bonanni (2005). Vendor reputation will be measured using a 4-item scale from Koufaris and Hampton-Sosa (2004). Attitude will be measured using a 3-item scale from Hassanein and Head (2007). Self-efficacy will be measured using a 4-item scale from O'Cass and Fenech (2003). A new multiple-item scale will be developed for measuring the quality of DS tools following the methodology suggested by Lewis et al. (2005).

Instrument Validation

All the constructs in the research model are reflective constructs. For reflective constructs, construct validity (i.e., discriminant and convergent validity) and construct reliability (i.e., Cronbach's alpha and Composite Reliability) will be calculated. Discriminant validity will be examined using the Average Variance Extracted (AVE) for each construct (Fornell & Cha 1994). Convergent validity will be also assessed through the AVE for each construct, making sure it exceeds the variance due to measurement error for that construct (Au et al. 2008). In addition, Harman's single-factor test (Podsakoff et al. 2003) and a statistical approach (Liang et al. 2007) will be used to examine the common method bias.

Data Analysis

The research questions will be answered through validating the model of Figure 2 through structural equation modeling techniques, specifically Partial Least Squares (PLS). When the phenomenon being studied is new, or where the theoretical model is in the early stages of development (as the proposed study), the PLS approach is more suitable (Gefen et al. 2000). The goodness of model fit indices will be used to examine the PLS model in terms of overall prediction performance of the model (Vinzi et al. 2010).

Sample Size

The minimum sample size for validating a research model in PLS is ten times the number of items for the most complex construct (Gefen et al. 2000). The most complex scale in the proposed model has 5 items, resulting in a minimum sample size of 50. However, to identify a medium effect size at a power of 0.8 and α of .05 for the moderating variables, 51 subjects are needed for each combination of the moderating variables (4 in total) for a total of 204 subjects. To account for spoiled surveys, 220 participants will be recruited.

Potential Contributions and Limitations

This research promises to make considerable contributions to both theory and practice. Drawing on the ELM literature, this study proposes a theoretical model to explore the effects of peripheral routes as well as central routs on consumers' attitude to purchase online products, while considering the moderating

roles of product involvement and consumer self-efficacy in using shopping websites to purchase online products. According to Bhattacherjee and Sanford (2006), the main advantages of ELM is its focus on the processes by which individual perceptions are shaped, as well as its contextualized nature, which explain how persuasion effects vary across people based on their elaboration ability and motivation. We hope that this study will help to provide the foundation for building a comprehensive knowledge base of persuasion processes in the context of the online shopping environment.

This study will also have significant implications for practitioners. Online vendors often invest a lot of money to attract more customers. However, such investments are wasted if they cannot influence consumers to shop from their websites. Thus, online vendors can benefit from understanding the persuasion processes that can be used more to motivate consumers to purchase online products from their websites and under what circumstances would these processes be most effective.

Notwithstanding the contributions of this study, it has some limitations. First, this study will be conducted among North American online shoppers. Thus, further research is required to determine the extent to which the findings of this study can be generalized to other geographic regions. Second, studies suggest that customers who want to purchase products from a retail website may emphasize different aspects of a website compared to when they want to use an e-service from an e-service website (Ghasemaghaei & Hassanein 2013b). In this study, we only focus on the impacts of persuasion processes on consumers' attitude to purchase products online at retail websites. As such, future studies should replicate this research within an e-services context.

REFERENCES

Antil, J. H. 1984. "Conceptualization and operationalization of involvement," *Advances in Consumer Research* (11:1), pp. 203–209.

Au, N., Ngai, E. W., & Cheng, T. E. 2008. "Extending the Understanding of End User Information Systems Satisfaction Formation: An Equitable Needs Fulfillment Model Approach," *MIS Quarterly* (32:1), pp. 43-66.

Bandura, A. 1997. *Self-Efficacy: The Exercise of Control*. W.H. Freeman and Company, New York.

Bhattacherjee, A., and Sanford, C. 2006. "Influence processes for information technology acceptance: an elaboration likelihood model," *MIS Quarterly* (30:4), pp. 805-825.

Chen, Q. 1999. "Attitude toward the site," *Journal of Advertising Research* (39:5), pp. 27-37.

Chu, W. Choi, B. and Song, M. R. 2005. "The role of on-line retailer brand and infomediary reputation in increasing consumer purchase intention," *International Journal of Electronic Commerce* (9:3), pp. 115-127.

Chung, S. "The role of online informediaries for consumers: A dual perspective about price comparison and information mediation," *Internet Research* (2:3), pp. 338-354.

Cyr, D., and Bonanni, C. 2005. "Gender and website design in e-business," *International Journal of Electronic Business* (3:6), pp. 565-582.

Fornell, C and Cha, J. 1994. "Partial least squares," *Advanced Methods of Marketing Research* (407), pp. 52-78.

Ghasemaghaei, M., Hassanein, K. 2013a. "Consumers' Satisfaction with Online Information Quality: The Moderating Role of Consumers Decision-Making Style, Gender and Product Involvement," *European Conference on Information Systems (ECIS)*, Utrecht, Netherlands.

Ghasemaghaei, M., Hassanein, K. 2013b. "Online Information Quality and Consumer Satisfaction: The Moderating Role of Information Seeking Mode and Information Search Focus- A Meta-Analysis," *Administrative Sciences Association of Canada (ASAC)*, Calgary, Canada.

Ghasemaghaei, M., Hassanein, K., Benbasat, I. 2014. "Intention to Use Recommendation Agents for Online Shopping: The Role of Cognitive Age and Agent Complexity," *International Conference on Information Systems (ICIS)*, New Zealand.

Gefen, D., Straub, D. W. and Boudreau, M.-C. 2000. *Regression: Guidelines for Research Practice*, Retrieved from http://www.dina.com.cn/news/UploadFiles/t10.pdf

Hassanein, K., and 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), pp. 689-708.

Häubl, G., and Murray, K. 2003. "Preference construction and persistence in digital marketplaces: The role of electronic recommendation agents," *journal of consumer psychology* (13:1-2), pp. 75-91.

Hong, W., Thong, J. Y. and Tam, K. Y. 2004. "The effects of information format and shopping task on consumers' online shopping behavior: A cognitive fit perspective," *Journal of Management Information System*s (21:3), pp. 149-184.

Jarvenpaa, S. L. Tractinsky, N., and Saarinen, L. 1999. "Consumer trust in an Internet store: A cross-cultural validation," *Journal of Computer-Mediated Communication* (5:2), pp. 15.

Kim, D. J. Ferrin, D. L. and Rao, H. R. 2008. "A trust-based consumer decision-making model in electronic commerce: The role of trust, perceived risk, and their antecedents," *Decision Support Systems* (44:2), pp. 544-564.

Klassen, M., Gupta, P. and Bunker, M. P. 2009. "Comparison shopping on the internet," *International Journal of Business Information Systems* (4:5), pp. 564-580.

Koufaris, M., and Hampton-Sosa, W. 2004. "The development of initial trust in an online company by new customers," *Information & Management* (41:3), pp. 377-397.

Laurent, G., and Kapferer, J.-N. 1985. "Measuring consumer involvement profiles," *Journal of Marketing Research (JMR)* (22), pp. 41-53.

Lewis, B. R. Templeton, G. F. and Byrd, T. A. 2005. "A methodology for construct development in MIS research," *European Journal of Information Systems* (14:4), pp. 388-400.

Liang, H., Saraf, N., Hu, Q., & Xue, Y. 2007. "Assimilation of enterprise systems: the effect of institutional pressures and the mediating role of top management," *MIS Quarterly* (31:1), pp. 59–87.

O'Cass, A., and Fenech, T. 2003. "Web retailing adoption: Exploring the nature of internet users web retailing behaviour", *Journal of Retailing and Consumer Services* (10:2), pp. 81-94.

Park, Y. A. and Gretzel, U. 2010. "Influence of consumers' online decision-making style on comparison shopping proneness and perceived usefulness of comparison shopping tools," *Journal of Electronic Commerce Research* (11:4), pp. 342-354.

Petty, R. E. and Cacioppo, J. T. 1986. "Communication and persuasion: Central and peripheral routes to attitude change," Retrieved from http://library.wur.nl/WebQuery/clc/535074

Petty, R. E. Cacioppo, J. T. and Goldman, R. 1981. "Personal involvement as a determinant of argument-based persuasion," *Journal of Personality and Social Psychology* (41:5), pp. 847-855.

Podsakoff, P. M., MacKenzie, S. B., Lee, J.-Y., & Podsakoff, N. P. 2003. "Common method biases in behavioral research: a critical review of the literature and recommended remedies," *Journal of Applied Psychology (88:*5), pp. 879-903.

Smith, S. P. Johnston, R. B. and Howard, S. 2011. "Putting yourself in the picture: an evaluation of virtual model technology as an online shopping tool," *Information Systems Research* (22:3), pp. 640-659.

Van der Heijden, H., Verhagen, T., and Creemers, M. 2003. "Understanding online purchase intentions: contributions from technology and trust perspectives," *European Journal of Information Systems* (12:1), pp. 41-48.

Vinzi, V. E. Trinchera, L., and Amato, S. 2010. *PLS path modeling: from foundations to recent developments and open issues for model assessment and improvement.* In Handbook of partial least squares, Springer.

Von Reischach, F., Dubach, E., Michahelles, F., and Schmidt, A. 2010. "An evaluation of product review modalities for mobile phones," *In Proceedings of the 12th international conference on Human computer interaction with mobile devices and services.*

Wixom, B. H. and Todd, P. A. 2005. "A theoretical integration of user satisfaction and technology acceptance," *Information Systems Research* (16:1), pp. 85-102.

Yang, S.-C. Hung, W.-C. Sung, K., and Farn, C.-K. 2006. "Investigating initial trust toward e-tailers from the elaboration likelihood model perspective," P*sychology & Marketing* (23:5), pp. 429-445.