

Attitudinal Explanation On Virtual Shopping Intention

Ritzky Karina Brahmana

Faculty of Economy, Petra Christian University,
Siwalankerto,
Surabaya, Indonesia, 60236

Rayenda Brahmana

School of Management, Universiti Sains Malaysia,
Minden,
Penang, Malaysia, 11800

Abstract—Virtual stores provide great efficiency in the retail value chain, and their existence has tremendously paved the way for electronic commerce. Understanding the intention of consumers to shop online in attitudinal perspective will provide important contribution to the area of e-commerce. This research proposes Task Technology Fit, Perceived Ease of Use, and Perceived Usefulness as the factors that drive consumers' intention. The results from our survey study of 310 online consumers in Indonesia indicate that user TTF is the determinant for PEoU and PU. Our hierarchical model also reports that PEoU is the mediating effect on the relationship between TTF and Intention. The resulting model explains a large portion of the factors that lead a user's behavioural intention to use a virtual shop.

Keywords: *Perceived Usefulness, Perceived Ease of Use, Task Technology Fit, Virtual Shopping*

I. INTRODUCTION

Motive on buying is all the consumer needs to be driven for do shopping. Motive is how people try to satisfy their needs and wants (Grewal and Levy, 2010). As stated by Maslow (1954), motive is a hierarchy needs to be fulfilled accordingly to their physiological, safety, love, esteem, and self-actualization. Based on those needs, many people have different intention while they are going to decide whether or where to buy the product.

This intention is moved by attitudinal motivation. Taken from Theory of Planned Behaviour of Aizjen (1971), this attitudinal motivation can be the perceived of usefulness and or perceived of Ease of use. In a simple English, people intention is driven the motivation on by how useful is the consumption process.

The advance on technology has changed the interaction of human to human. There are many on-line shops or virtual shops that have been created. Nowadays, people conduct their consumption process virtually. It would be very interesting to investigate whether the attitudinal motives of consumers is driven by their perception on the usefulness. Furthermore, we introduce the task technology fit a technology whereas it can picture the "usefulness" of virtual shop when it fits the task a user is engaged in. In line with Berthon, Pitt & Watson (1996), Yeh and Yan (2010), Lee et al. (2011) suggestion, we address the following question: what are the attitudinal factors on determining the consumers' intention to use virtual shop?

The rest of the paper is organized as follows: section 2 addresses the literature review. The research method will be introduced in section 3. Section 4 delivers the results. Meanwhile the analysis and implication are in section 5. Section 6 Concludes

II. LITERATURE: ONLINE SHOPPING ON THE SCOPE OF PLANNED BEHAVIOUR

In our research framework, virtual shopping is defined as the use of online stores by consumers for purchasing transactional event. We intersect it with Technology Acceptance Model (TAM) to explain the behavioural intention of consumers to shop on internet. Tam originally proposes two determinants of persons' attitude toward shopping online. First determinant is Perceived Usefulness (PU) which refers to the degree to which a person believes shopping online will accomplish shopping task more quickly (Davis, 1993); and another one is Perceived Ease of Use (PEoU) which refers to the extent to which a person believes that shopping online will be Free of efforts (Davis, 1993). However, we introduce another determinant of consumers' intention as our contribution which is Task Technology Fit (TTF).

Task Technology Fit or TTF is the matching of the capabilities of the technology to the demands of task, that is, the ability of IT to support a task (Goodhue and Thompson, 1995). Goodhue (1995) developed and tested a model that determined TTF based on task needs and found TTF as important factor in technology use. It was viewed as the extent to which technology functionally matched task requirements and individual abilities. It was assumed that users can successfully evaluate TTF and that a higher fit would eventually result in better performance. From Goodhue (1995) model, we modify that TTF is a relevant concept to predict information success, fit to determine an appropriate interplay between tasks, technology, and individual characteristic. Following Zigurs and Buckland (1998), we hypothesize that particular technology with a particular kind of tasks will influence the PU and PEoU of consumers. Goodhue (1995) had shown that TTF was a better indicator of the value of an information system other evaluation system. Further, He performed an empirical study and found that TTF can explain the user perceived on task of technology.

Introducing TTF as another explanation of intention on TAM framework provides a better model (Dishaw and Strong, 1999). This paper proposes TTF as the factor on the intention to shop online. Moreover, its association on the attitudinal belief toward intention would be interesting to explore. Thereby, this paper addresses the two attitudinal beliefs on TAM (Perceived Usefulness, and Perceived Ease of Use) as the mediator on the relationship between TTF and Intention to shop online.

The association between TTF and Perceived Ease of Use (PEoU), itself, has been examined extensively in technology area. For example are Mathieson and Keil (1998), and Lee et al. (2011) who documented laboratory results confirming the relationship between PEoU and TTF. They found the situation where users' reports, that a system is difficult to use might in fact indicate deeper TTF issues, cannot be corrected by merely changing the interface. In simple English, TTF can explain the behaviour of human during the interaction with technology. To improve the role of TTF, scholars have to look at the level ease to use of a technology. Taking it to our context, consumers are hardly to use online shopping if they found difficulty when shopping on internet. In TAM context, perceived ease of use (PEoU) is an important determinant as its influence comes in the early stage of technology users' experience (Davis, 1989). Venkatesh (2000) stated that PEoU is the factor that can make consumers to adjust their preferences due to their experience on their effort to use. It is in line with Cheema and Papatla (2011) who also found the role of experience on the usefulness of the online shop. Therefore, it is necessary to examine the relationship between TTF and PEoU.

In terms of usefulness, there was also a relationship between TTF and Perceived of Usefulness (PU). Usefulness refers to consumers' perception that using the internet as a shopping medium enhances the outcome of their shopping experience. These perceptions influence consumers' attitude toward online shopping and their intention to shop on internet. In the online shopping context, consumers evaluate their internet shopping experiences in terms of perceptions regarding product information, form of payment, delivery terms, service offered, risk involved, privacy, security, personalization, visual appeal, navigation, entertainment, and enjoyment (Burke, 2002; Parasuraman and Zinkhan, 2002). Staples and Seddon (2004) found that TTF could explain the performance of technology. Further, Goodhue and Thompson (1995) items of consequence of use can be interpreted in TAM's context as perceived usefulness. In other words, there is a possibility of the relationship between TTF and PU.

III. METHODOLOGY

A. Data

This paper is survey-based research where the questionnaire is built by adopting and adapting similar previous research. The items in the questionnaire were

validated first before using it to test the research model and its hypothesis. It is noteworthy that the questionnaire was pre-tested by using 20 postgraduate students who had experiences in doing online shopping. Then, 350 questionnaires were distributed and voluntarily filled in 5 big cities of Indonesia (Jakarta, Surabaya, Medan, Denpasar, and Bandung). The data were collected over period of March 2011 until August 2011.

The respondents were dominated by young-age group where 38% of respondents are aged between 18-23 years old, 33% respondents are between 24-29 years old, 21% respondents are between 30-34 years old, and 8% is categorized as others (more than 34 years old). The number of respondents who owned credit card (45.7%) is relatively less than the number of respondents who do not own credit card (54.3%), yet there is no huge difference between the groups. This might be because the study consisting respondents from different level of ages. As most of them are on early young age, they might use their younger sibling or parent's credit card as the media for transaction.

Our respondent activities profile also supports our survey reliability. When we asked "how many online shopping places you visit in a month?" we found 40.3%, 39.3%, 19%, and 1.3% of respondents had visited 1-2 sites, 3-5 sites, 6-20 sites, more than 20 sites respectively. When we asked "How much time you use for online shopping a week?" we documented 17.4%, 26.7%, 26.5%, 22.9%, and 6.5% of respondents spent 0-5minutes, 6-15minutes, 16-30minutes, 31-60minutes, and more than 1hour respectively. Lastly, in terms of frequency on using the online shopping, 24.7%, 52.3%, 12.2%, and 10.8% of respondents were using it once a year, 2-4times a year, monthly, and weekly/daily respectively. Based on this profiling, we can ensure that we had chosen a reliable sample group.

Additionally, we further asked the kind of products that respondents usually buy. Interestingly, airline (18%), and hotel (13%) are the common products purchased online. This is because airline and hotel are generally well known organization that doing online booking. Meanwhile, 11%, 11%, 10%, 10%, 9%, 9%, 6%, and 4% of respondents were using online shopping to buy electronics, computers and its accessories, hand phone, fashion, books, gifts, perfumes, and others, respectively.

B. Questionnaire design and its reliability

The questionnaire was designed based on previous works on Theory Planned Behaviour. There are 20 items in the questionnaire, and the reliability of each items were tested under cronbach alpha. The dimensions on this paper are Task Technology Fit (TTF), Perceived Usefulness (PU), Perceived Ease of Use (PEoU), and Intention to Use. All items were constructed by adopting-and-adapting previous research on a 7-Point Likert scale. We conducted a pilot test first because previous studies investigated western context, meanwhile our study is on eastern. We validate the items by running the Factor Analysis.

The questionnaire was translated in two ways. First, we translated into Bahasa Indonesia. After that, we translated it again to English to match it. We found minor differences during this two-ways translation, and ignored it as the meaning of the question remains the same. For confirmation, we consulted it again to two Professors (one from Psychology, and another from Economics).

The items reliability was tested by looking at the Cronbach alpha values. Reliability test is the accuracy or precision of a measuring instrument that is the extent to which the respondent can answer the same or approximately the same questions the same way each time. Even though

Sekaran (2003) suggested that alpha value of 0.5 would be considered okay, we follow Nunnally and Bernstein (1998) threshold value. They suggest that Cronbach Alpha value of 0.7 and above is considered to be reliable. It indicates items are homogeneous and measuring the same constructs.

Depicted on Table 1, our alpha values are higher than 0.7. It indicates that the items on the constructs are reliable enough to be used on the survey. Our lowest value is 0.885 which belongs to PU. Meanwhile, TTF has the highest value with alpha of 0.922. PEoU and Intention items

have Cronbach Alpha of 0.895, and 0.901 respectively. This table clearly shows that the inter-consistency is achieved. Therefore, none of the items will be deleted in the test as the reliability was high enough.

IV. HIERARCHICAL MODEL

The results of the test of hierarchical model are presented in Figure 1. We follow Barry and Kenny (1986) about the mediation effect. Hence, we have three models in this research to investigate the role of attitudinal belief on intention of online shopping. The first model is the relationship between TTF and PU. It examines how TTF can influence the PU directly. Second model is TTF effects on PEoU. It investigates the role of TTF on the user-friendly attributes of the virtual shop. Lastly, our third model is the investigation on the factors of intention from TTF, PU, and PEoU. This three models build one hierarchical model which suggested by Barry and Kenny (1986).

TABLE 1 RELIABILITY RESULTS

Construct	Items	Cronbach Alpha	Notes
Perceived Ease of Use	4	0.895	Adopt and Adapt from Teo (2001), Moon&Kim (2001), Tan&Chou (2008)
Perceived Usefulness	4	0.885	Adopt and Adapt from Koufaris (2002), Tan&Chou (2008)
Task Technology Fit	24	0.922	Adopt and Adapt from Dishaw and Strong (1999)
Intention	4	0.901	Adopt and Adapt from Davis et al. (1989)

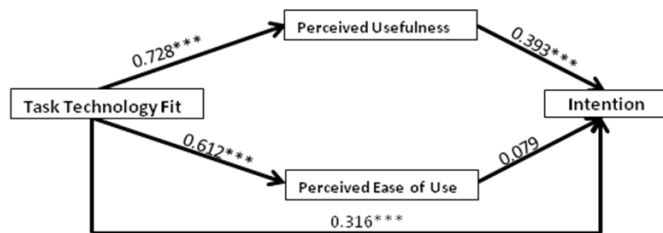


FIGURE 1. HIERARCHICAL MODEL RESULT

Our first model reports that TTF has significant association to PU in 1% level. The beta value is 0.728 signifies there is 72.8% contribution of TTF on single unit of PU. In short, TTF has played important role on PU. Further, the model itself is robust enough as the R² is 37.4.0%; and adjusted R² is almost the same (37.2%). It means that TTF alone already can explain more than half of variation in PU.

Our second model shows that TTF also has significant influence on PEoU in 1% level. Depicted on Figure 1, TTF beta value is 0.612 indicating 61.2% contribution on single unit of PEoU. The model has R² of 0.361 meaning TTF can explain 36.1% variation in PEoU. It is slightly lower than model 1 R² but still considered high.

Our last model is by taking TTF, PU, and PEoU altogether as regressors. This step has to be done to confirm our hierarchical model. The results of model 3 are F-test is significant in 1% level, and the R² is 0.530. The R² improves up to 20% indicating those 3 factors are the loading factor for the intention model. In terms of significance of result, we found only 2 variables (TTF and PU) have significant relationship to intention to online shopping. Meanwhile, we cannot accept the hypothesis of the relationship between PEoU and Intention. In a nutshell, we conclude that our hierarchical model found PU is the mediating effect on the relationship between TTF and

Intention. Conversely, PEOU does not have any mediating effect on the relationship between TTF and Intention. Intention to online shopping was driven by the usefulness of website not an user-friendly website.

TABLE 2 GOODNESS OF MODEL

	Model 1	Model 2	Model 3
R Squared	0.374	0.361	0.530
Adj R Squared	0.372	0.359	0.528
F Value	177.079	167.389	329.878

V. DISCUSSION AND IMPLICATION

Our research found the significantly positive association between Task Technology Fit (TTF) and Perceived Usefulness (PU). It indicates that TTF can increase the PU of consumers during online shopping, which is consistent to Goodhue and Thompson (1995). This result reminds us to the result of Dishaw and Strong (1999) where TTF actually is an extended version of TAM model.

This result tells us that the experience on the virtual shop, optimization of virtual shop functionality, and the utilization of virtual shop features, might boost the perceived of usefulness of the consumers'. By stressing on the improvement of these TTF, consumers' would increase their perception on the usefulness of the virtual shop.

However, the PU did not have any significant relationship to the intention to shop online. It is a contrary result with other previous result in TAM studies. The quality, productivity, and performance of virtual store did not have any affects on the intention of consumer. They did not look after how useful the website is. The usefulness of the site had not taken into the perception account of consumers; an interesting finding that need to explore more.

The association between TTF and PEOU is the most important relationship on our model. We found the visualization, tools functionality, and tools experience can enhance the PEOU of consumers. It is consistent to Mathieson and Keil (1998), and Lee et al (2011). By providing these TTF features, consumers should feel friendlier to use the online shopping as alternative of traditional purchase. Moreover, the internet-literacy in Indonesia is not that high. TTF feature would help them to understand the features in virtual shop easily. In short, when a system of internet is easily to use and do not bring any problems for consumer when they want to shop online, consumers will tend to shop via online.

In terms of ease of use, e-retailers have to stress on the features and layout of the site. Virtual shop has to become easily to understand, clear, and easily to master during using it. Equally important, e-retailers should explore

the opportunities to offer more excitement on the site. The current practice among virtual in Indonesia is to offer rigid and conventional layout of website (some of the just upgrade the blog to a online shop), which is a very standard design. Respondent indicated the importance of fun experience during browsing the website. Adopting social network on e-recruitments might be useful to meet this demand. Having the experience of user-friendly virtual shop can impact on the repurchase intention of consumers' which is thing that e-retailers want. Note that this user-friendly of online shopping will give more intention to purchase products through internet.

This paper reported there is only 1 mediating effect on the model, which is the Perceived Ease of Use (PEoU) effect. Meanwhile, Perceived Usefulness (PU) has been found without any mediating effect; an evidence of the importance of PEOU on the intention to shop online.

This research has impact on the e-marketers and e-retailers, since it enables them to assess the features that specifically attract consumers to shop on the internet. Understanding intention to shop online is very important for those entities due to make adequate strategic, technological, and marketable decision. Moreover, those 2 entities can pay attention on their website improvement to increase consumer attraction. In simple example, our research shows that consumers' intention to shop online is influence by perceived ease of use. E-marketers and e-retailers should emphasize on improving their virtual shop in the user-friendly perspective. Moreover, our study shows that Task Technology Fit is another important feature in intention to online shop. TTF can give strong evaluation tools to e-retailers whether the services of virtual shop are meeting user needs.

VI. CONCLUSION

The usage of online shopping has become popular in Indonesia due to the dramatic increase of online users. However, a research of the determinants of consumers' intention to shop online was left behind. In virtual shop context, Perceived Ease of Use is the most important aspect. It gives highest magnitudes on the association, especially on the mediation effect. Therefore, virtual shop should notice that their sites need to provide user-friendly website. Furthermore, the role of Task-Technology fit is also important on the intention. Giving the features of TTF would increase the level of user-friendly a virtual store. As PEOU is a mediator, it also enhances the intention to shop inline. Our hierarchical model suggests it is important to pay closer to this area.

Virtual shop is "a store in cyberspace, a place where customers can shop from their home computers and where merchants can offer merchandise and services for a fraction of the overhead required in a physical storefront (Yesil, 1997). This virtual shop is becoming popular because from organizations perspective because it reduces overhead costs

and creating new business during larger their channels (Chen, Gillenson & Sherrell, 2002). For those reasons, it is important to examine the role of attitudinal motive of consumers on shopping online.

This research enriches the literature of technology acceptance model by introducing Task Technology fit constructs as another drivers. In terms of industrial practice, it gives an insight about what the drivers to catch consumer's intention in terms of usefulness are. From consumer's perspective, virtual shops will give benefits such as broader options for product, convenience (Janal, 1997; Jarvernpaa & Todd, 1997) competitive pricing and information richness (Peterson, Balasubramanian & Bronnenberg, 1997). Moreover, Bettman, Luce & Payne (1998) stated that consumer prefer to choose virtual shop than conventional shop because in virtual shop, the consumer can find the any product's information easily and can process it in one click for any selection that they want. This is in line with our findings. By our findings it will deliver a better strategy for virtual shop to enhance more on their user-friendly features and its task-technology fit. Future research can examine the role of subjective norm or perceived behavioural control of planned behaviour on the intention to online shopping.

REFERENCES

- [1] Ajzen, I. (1991). The Theory of Planned Behavior. *Organizational Behavior and Human Decision Process*, 50, 179-211
- [2] Burke, R.R. (2002). Technology and the customer interface: what consumers want in the physical and virtual store. *Journal of the Academy of Marketing Science*, 30(4), 411-432
- [3] Cheema, A., and Papatla, P. (2011). Relative importance of online versus offline information for Internet purchases: Product category and Internet experience effects. *Journal of Business Research*, 63(9-10), 979-985
- [4] Chen, L., Gilleson, M.L., & Sherrell, D.L. (2002). Enticing online consumers: An extended technology acceptance perspective. *Journal Information & Management*, 39, 705 – 719.
- [5] Chen, L., & Tan, J. (2004). Technology Adaptation in e-commerce: Key determinants of virtual stores acceptance. *European Management Journal*, 22, 74 – 86.
- [6] Chen, I.Y.K. (2010). Understanding Retailers' Acceptance of Virtual Stores. *Knowledge Management and E-Learning: An International Journal*, 2(3).
- [7] Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 13(3), 319–340.
- [8] Dishaw, M.T., and Strong, D.M. (1999). Extending the technology acceptance model with task technology fit constructs. *Information and Management*, 36(1), 107-120
- [9] Goodhue, D.L. (1995). Understanding User Evaluation of Information Systems. *Management Science*, 41(12), 1827-1844
- [10] Goodhue, D.L., and Thompson, R.L. (1995). Task Technology fit and individual performance. *MIS Quarterly*, 19(2), 213-236
- [11] Grewal, D. & Levy, M. (2010). *Marketing 2nd Ed.*, New York : McGraw – Hill USA.
- [12] Huang, M. (2000). Information load: its relationship to online exploratory and shopping behaviour. *International Journal of Information Management*, 20, 337 – 347.
- [13] Koufaris, M. (2002). Applying the technology acceptance model and flow theory to online consumer behavior. *Information Systems Research*, 13(2), 205–223.
- [14] Lee, M.K.O., Shi, N., Cheung, C.M.K., Lim, K.H., and Sia, C.L. (2011). Consumer's decision to shop online: the moderating role of positive informational social influence. *Information and Management*, 48, 185-191
- [15] Mathieson, K., and Keil, M. (1998). Beyond the interface: ease of use and task technology fit. *Information and Management*, 34(4), 221-230
- [16] Moon, J. W., & Kim, Y. G. (2001). Extending the TAM for a World-Wide-Web context. *Information & Management*, 38(4), 217–230.
- [17] Ng, C.F. (2003). Satisfying shoppers' psychological needs: From public market to cyber-mall. *Journal of Environmental Psychology*, 23, 439 – 455.
- [18] Nunnally, J.C., & Bernstein, I.H. (1994). *Psychometric Theory*. New York: McGraw Hill
- [19] Parasuraman, A., and Zinkhan, G.M. (2002). Marketing to and serving customers through the internet: an overview and research agenda. *Journal of the Academy of Marketing Science*, 30(4), 286-295
- [20] Perea y Monsuwe, T., Dellaert, B.G.C., & de Ruyter, K. (2004). What drives consumers to shop online? A literature review. *International Journal of Service Industry Management*, 15, 102 – 121.
- [21] Staples, D.J., and Seddon, P. (2004). Testing the Technology-to-Performance chain model. *Journal of Organizational and End User Computing*, 16(4), 17-36
- [22] Sekaran, U. (2003). *Research methods for business: A skill building approach* (4th ed). New York: John Willey and Sons
- [23] Tan, F.B., & Chou, J.P.C. (2008). The Relationship between mobile service quality, perceived technology compability, and users' perceived playfulness in the context of mobile information and entertainment services. *International Journal of Human-Computer Interaction*, 24(7), 649-671
- [24] Teo, T.S.H. (2001). Demographic and motivation variables associated with internet usage Activities. *Internet Research: Electronic Networking Applications and Policy*, 11 (2): 125-37.
- [25] Venkatesh, V. (2000). Determinants of perceived ease of use: integrating perceived behavioural control, computer anxiety and enjoyment into the technology acceptance model. *Information Systems*, 11, 342-65.
- [26] Vrechopoulos, A.P., O'Keefe, R. M., Doukidis, G. I., & Siomkos, G. J. (2004) Virtual store layout: An experimental comparison in the context of grocery retail. *Journal of Retailing*, 80, 13 – 22.
- [27] Yeh, R., and Yan, R. (2010). An Applied Logistic Model for Online Purchase Decision via Web-Building Experiments. *International Journal of Data Analysis Techniques and Strategy*, 2(1), 73-84
- [28] Zigurs, I., Buckland, B.K., Connolly, J.R., and Wilson, E.V. (1999). A test of task technology fit for group support system. *The Data base for advances information system*, 30(3-4), 34-50