Web-based Factors Affecting Online Purchasing Behaviour

To cite this article: Mohd Shoki Md Ariff et al 2013 IOP Conf. Ser.: Mater. Sci. Eng. 46 012038

View the article online for updates and enhancements.

Related content

- Consumer Perceived Risk, Attitude and Online Shopping Behaviour: Empirical Evidence from Malaysia
  Mohd Shoki Md Ariff, Michele Sylvester, Norhayati Zakuan et al.

- Acceptance of Internet Banking Systems among Young Managers
  Mohd Shoki Md Ariff, Yeow S M, Norhayati Zakuan et al.

- Examining Users’ E-Satisfaction in the Usage of Social Networking Sites: Contribution from Utilitarian and Hedonic Information Systems
  Mohd Shoki Md Ariff, Tay Kai Shan, Norhayati Zakuan et al.
Web-based Factors Affecting Online Purchasing Behaviour

Mohd Shoki Md Ariff1, Ng Sze Yan1, Norhayati Zakuan1*, Ahamad Zaidi Bahari1 and Ahmad Jusoh1

1 Department of Management, Faculty of Human Resource and Management, Universiti Teknologi Malaysia (UTM), Skudai, Johor, Malaysia

E-mail: norhayatimz@utm.my

Abstract. The growing use of internet and online purchasing among young consumers in Malaysia provides a huge prospect in e-commerce market, specifically for B2C segment. In this market, if E-marketers know the web-based factors affecting online buyers’ behaviour, and the effect of these factors on behaviour of online consumers, then they can develop their marketing strategies to convert potential customers into active one, while retaining existing online customers. Review of previous studies related to the online purchasing behaviour in B2C market has point out that the conceptualization and empirical validation of the online purchasing behaviour of Information and Communication Technology (ICT) literate users, or ICT professional, in Malaysia has not been clearly addressed. This paper focuses on (i) web-based factors which online buyers (ICT professional) keep in mind while shopping online; and (ii) the effect of web-based factors on online purchasing behaviour. Based on the extensive literature review, a conceptual framework of 24 items of five factors was constructed to determine web-based factors affecting online purchasing behaviour of ICT professional. Analysis of data was performed based on the 310 questionnaires, which were collected using a stratified random sampling method, from ICT undergraduate students in a public university in Malaysia. The Exploratory factor analysis performed showed that five factors affecting online purchase behaviour are Information Quality, Fulfilment/Reliability/Customer Service, Website Design, Quick and Details, and Privacy/Security. The result of Multiple Regression Analysis indicated that Information Quality, Quick and Details, and Privacy/Security affect positively online purchase behaviour. The results provide a usable model for measuring web-based factors affecting buyers’ online purchase behaviour in B2C market, as well as for online shopping companies to focus on the factors that will increase customers’ online purchase.

Keywords: B2C, website quality, online buyers, online purchasing behaviour

1.0 Introduction

Electronic commerce (E-commerce) refers to the process of buying, selling, transferring, or exchanging products, services, or information via computer networks [1]. Based on Kenneth and Carol [2], nowadays, it is inextricably for e-commerce linked to the Internet. Business to Consumer (B2C) is one of the natures of transactions or interactions in e-commerce. According to Turban, et.al [1], B2C refers to e-commerce model in which businesses sell to individual shoppers. The volume of online B2C transactions is increasing annually. According to the latest MasterCard Worldwide online
Shopping Survey, consumers in Malaysia are shopping online more and have become more confident about online security. The number of Malaysian people shopping online has grown by 12% in year 2011 compared to the year before (55% in 2010) [3]. The growing number of B2C transactions provides a huge prospect of online buyers for E-marketers in Malaysia, and therefore, examining factors affecting online buyers’ behaviour in B2C market is crucial. However, it was reported that e-commerce in Malaysia is not as popular as in western countries. Although almost every Internet user surveyed said in general they like the idea of shopping on the internet, in fact, only a small number of Malaysians actually buy online [4]. Thus, if E-marketers know the factors affecting online buyers’ behaviour in B2C market, and the effect of these factors on behaviour of online consumers, then they can develop effective marketing strategies to (i) attract more Malaysian to get involve in online purchase; (ii) convert potential customers or less active online buyers into active one; and (iii) improve quality of online transactions by focusing on web-based factors that are perceived as important by online buyers.

According to Syed et al. [5], the dominant factor which influences consumer perceptions of online purchasing is the website design characteristics. With reference to website design/ quality, it was found that navigation and content were the most sought after factors of online purchasing [6]. On the other hand, Zeithaml et al.[7]suggest that entertainment criteria identified in the studies of more general websites are not relevant in the online purchase context. Shergill and Chen [8] found that website design quality was an important issue in customer satisfaction. When the customers satisfied with the website quality, this will increase their involvement in online purchasing. Based on Yam et al. [9], privacy and security are the examples of the factors which affect consumers’ willingness to buy from online retailers. Grace and Chia [10] stated that consumers’ attitudes and beliefs related to convenience and security concerns (shaped during the online purchase process) have significant effects on their intention to purchase online. Thus, as suggested by Nunes [11], if E-marketers intend to ignore the fundamental truths about online consumer behaviour and which web-based factors valued most by online buyers in different situations or countries, most of the promises of E-marketing in the B2C context will not be fulfilled. Thus, the effect of web-based factors on online purchasing behaviour in the Malaysia context should be determined.

The evolution in B2C studies has point out the importance of enhancing quality of web-based transactions to ensure sustainability of business in e-commerce. E-marketers need to address web-based factors which are significantly affecting buyers’ online purchase behaviour, especially among young consumers. Young consumers are playing an important role in online shopping and this provides an emerging prospect for online retailers [5]. Particular to the behaviours of online consumers, skills in information and communication technology (ICT) and age has been found to be strongly related to adoption and use of information systems, including online retailing web-based systems [12]. In Malaysia, as reported by Haque and Khatib [13], most internet users are youths (15-20 years old; 50 per cent) and young adults (20 - 29 years old; 39 per cent). These groups of users consist of those between 15 – 29 years of age, in which most of them are students in secondary schools and universities. Thus, students in tertiary education, especially those who have knowledge in ICT and e-business, have significant influences to B2C market. ICT students are regarded as ICT literate; therefore studying their behaviour towards online purchasing provides a new landscape in understanding behaviour of online buyers. In addition, given that the ICT students are considerably ‘expert’ in information technology systems, revealing their online purchase behaviour in B2C market would be interesting to research. Hence, this study provides empirical evidence on online purchasing behaviour of Malaysian young customers, specifically future ICT professionals. Therefore, this study aims to answer to the following questions; (i) what are web-based factors affecting online purchasing behaviour of information technology literate consumers, i.e. ICT students?; and (ii) what is the effect of web-based factors on online behaviour of ICT students?

2.0 Literature Review

2.1 The buying process in an e-market
In consumer behavior research, it is very important for marketers to understand consumer decision making process. This will help them predicting consumers’ purchase behavior, especially in the context of online purchasing. Current literature on consumer online purchasing decisions has mainly concentrated on identifying the factors which affect the willingness of consumers to engage in internet shopping. Based on Na Li and Ping Zhang [14], online purchasing behaviour refers to the process of purchasing products or services via the Internet. Consumers’ attitude towards online shopping is a prominent factor affecting actual purchasing behaviour. The potential buyers recognize a need for some merchandise or service and they will go to the internet and search for related information before they make a buying decision. They will evaluate the alternatives and choose the best which they satisfied for it. Hence, the online transaction is conducted.

Customers purchase goods online in different modes. The most common mode is purchasing from catalogs at fixed prices. Sometimes prices are negotiated or discounted. Another mode is dynamic pricing, which refers to non-fixed prices, such as those in auctions or stock (commodity) markets. According to the buying process in an e-market, the process starts with logging into a seller’s site, registering (if needed), and entering into an online catalog (E-catalog) or the buyer’s account. E-catalog can be very large, so a search mechanism may be needed. Besides that, the online buyer needs to compare prices. If the buyer unsatisfied, the buyer may abandon the site. On the other hand, if satisfied, the buyer will select the item and place it in a shopping cart. The buyer might then return to the e-catalog to choose more items. When shopping is completed, the buyer goes to a check out page where a shipment option is selected from a menu. A payment option may be available. Payment method may be PayPal, credit card and others. After checking all the details for accuracy, the buyer submits the order.

2.2 Theories related to the assessing factors influencing online purchasing behaviour

The classic Theory of Reasoned Action [15], the Theory of Planned Behaviour [16], and Technology Acceptance Model [17] have been extensively adopted for explaining and predicting user behaviour in an online shopping environment. Theory of Reasoned Action (TRA), is a theory of attitude-behaviour relationships which links attitudes (considered as beliefs that a person accumulates over his lifetime), subjective norms, behavioural intention and behaviour in a fixed causal sequences. Attitudes are said arise from the beliefs about behavioural outcomes and the evaluations of those outcomes. A person’s overall attitude toward an object is derived from his beliefs and feelings about various attributes of the object. According to TRA, a person’s behaviour (i.e. online purchase, vote, etc.) is determined by his/her intention to perform this behaviour. Intention is the cognitive representation of a person’s readiness to perform a given behaviour, and it is considered to be the immediate antecedent of behaviour. So, the stronger the intention of an individual to perform a particular behaviour, the greater the most likely the particular behaviour will be performed [16].

An expansion of the TRA is the Theory of Planned Behaviour (TPB) which is proposed by Ajzen [18]. In fact, TPB differs from the TRA with its addition of the perceived behavioural control (PBC). TPB suggests that a central factor in human behaviour is behavioural intention, which is affected by attitude toward behaviour, subjective norm, and perceived behavioural control [18, 16]. PBC reflects a person’s perception of the ease or difficulty of implementing the behaviour in question. It concerns with the beliefs about the presence of control factors that may facilitate or hinder individuals from performing the behaviour. In TPB, behavioural control directly affects the intention to perform behaviour, such as to use internet-based transaction or online purchasing, and may directly affect behaviour in situations where the user intends to perform the behaviour, but is prevented from doing so [18, 16]. PBC relates to the extent to which the person believes that she/he has control over personal or external factors that may facilitate or constrain the behavioural performance [16]. It is assumed that PBC together with behavioural intention, can be used directly or indirectly to predict behaviour achievement.
In a further extension of TRA, TAM was introduced by Davis [17], which described an individuals’ acceptance of information technology. In general, TAM is a theoretical model that evaluates the effects of things like system characteristics on user acceptance. In understanding acceptance of information technology systems, such as online retailing websites, TAM was used as the basis of the theoretical framework to build a model to determine intention of users to use a system or a website. TAM stressed on adoption degree of a person in using a technology and aspects that affect his or her acceptance or intention to use the technology. It suggests that users’ adoption of information technology systems, in this case is online retailing websites, is determined by their intention to use the systems, which in turn is determined by their beliefs towards the systems. Users’ beliefs about information technology systems are influenced by their perceived usefulness and perceived ease of use of the systems.

2.3 Instruments used to measure quality of web-based transactions

The electronic service quality (e-SQ) was highly concerned due to it highly related with the success or failure of an internet-based company or online purchasing or transaction. Several scales have been developed in measuring the website e-SQ. However, different types of services required different approaches to assessing the website e-SQ. Among the e-SQ measurement or assessment techniques, eTailQ, WEBQUAL, SITEQUAL and e-SERVQUAL are the most popular techniques used by researchers to determine e-SQ in different internet context. The eTailQ, a reliable and valid scale for the measurement of etail quality, was developed by Wolfinbarger and Gilly [19]. The authors suggested that four factors—website design, fulfillment/reliability, privacy/security and customer service—are strongly predictive of customer judgments of quality and satisfaction, customer loyalty and attitudes toward a website. ETailQ was one of the newest, most mature and scholarly models of website quality and it encompasses the entire life cycle associated with electronic transactions. Besides that, each of its factors, variables and items exhibit high levels of inter-item reliability and validity.

WEBQUAL was developed by Loiacono, Watson and Goodhue [20] in order to evaluate website quality focusing on the website interface. The WEBQUAL was used to predict the re-visit/re-use behaviour of web users based on their perceptions of overall website quality. There are four dimensions in WEBQUAL - usefulness, ease of use, entertainment and complimentary relationship (Loiacono, Watson and Goodhue, 2002). WEBQUAL 4 developed by Barnes & Vidgen [21] was the new generation for WEBQUAL and it composed of 22 items of three dimensions, namely, quality of information, quality of interactivity/confidence and empathy and usability of the site/usability and design. SITEQUAL was developed by Yoo & Donthu [22] with nine items distributed over four dimensions of ease of use, design, speed and security.

The e-SERVQUAL [23] is a method for measuring website e-SQ. E-SERVQUAL measures website e-SQ based on the customers perceptions and the scale contains the core scale (E-S-QUAL) and recovery scale (E-RecSQUAL). There are four dimensions in E-S-QUAL - efficiency, fulfilment, reliability and privacy – and for e-RecSQUAL, the three dimensions proposed are responsiveness, contact and compensation.

2.4 The influence of web-based factors on online purchasing behaviour

A customer’s online buying experience consists of everything from information search, product evaluation, decision making, making the transaction, delivery, returns and customer service [19]. Web-based factors influence online purchasing behaviour either positively or negatively [5]. By using a sample of 214 online shoppers, Ranganathan and Ganapathy [24] found four key dimensions of B2C web sites - information content, web design, security and privacy – and although all these dimensions have an impact on the online purchase behavior, security and privacy were found to have greater effect on the purchase intent of online buyers. With reference to website quality, Ruchi et al.
suggested that navigation and content are the most sought after factors consumers are looking for when dealing with a web-site. Categorization of information, colour usage, layout/space usage, graphics usage, establishing website’s identity and presentation of information are also the important factors. The web site design describes the appeal of the user interface design that will increase the willingness of customers to visit a website more often and to stay longer with the site.

Vijayasarathy and Jones [25] stated that reliability is a measure of customers’ perceptions on delivery of online purchased order as promised by e-retailers and it is closely associated with risk. According to Na Li and Ping Zhang [14], online consumers apparently want to receive the right quality and right quantity of items that they have ordered within the time frame promised by the retailers, and they expect to be billed accurately. Online service providers who deliver the promised services within promised time frame only will be considered as reliable [5].

Customer service’s dimension of responsiveness, courtesy and understanding/knowing the customer are included in the original conceptualization of service quality [26]. In internet or web-based transaction, compare to the voice interaction, the response on email inquiries are more important [19]. This is why most companies used online customer service as a way to provide help and service to their online customers.

According to [27], privacy refers to the degree to which the online shopping web site is safe and protects the customers’ information. Security refers to consumers’ perceptions about the security of the online transactions as well as the protection of financial information from unauthorized access in an online retailing context [28]. Prior researches on online shopping context indicated that consumers’ perceptions of privacy have a significant and positive effect on their trust in the online vendor [27]. Based on Ahuja et al., [29], security and privacy were the biggest barriers to online shopping and online buyers’ purchasing behaviour was significantly affected by these factors.

3.0 Methodology

3.1 The Conceptual Framework of the Study

Based on review of TRA, TPB and TAM theories and e-SQ instruments related to the determination of consumers’ online purchase behaviour, as discussed in Section Two of this study, the dependent variable was determined, i.e. online purchasing behaviour. The independent variable identified in this study was web-based factors. The selection of the factors was based on the following steps:

- Step 1: Review of literature and current trend in the usage of internet and online purchasing in Malaysia resulting in the need to examine web-based factors affecting behaviour of ICT professional;
- Step 2: Review of theories related to website quality and e-SQ instruments. This process had contributed to the identification of four factors in the eTailQ instrument – fulfilment/reliability, website design, privacy/security, and customer service – as web-based factors that may affect the behaviour of online buyers [19]. These factors have been widely validated as predictors of online purchasing behaviour [8, 19].
- Step 3: Review of previous studies related to the consumers’ online purchasing behaviour revealed that information content was one of the factors which are affected online purchasing behaviour [21, 24] and this factor will either attracts or repels online customers. According to Szymanski and Hise [30], consumer satisfaction with regard to the online purchasing is largely determined by the quality of the site’s product information. Web site information is often scanned, rather than read in detail and users always wanted useful and reliable information which they can access quickly. Hence, website information quality was included as one of the web-based factors.
Step 4: The impact of those web-based factors must be examined in order to determine the extent to which they exert influence on attitude of online buyers. Therefore, attitude towards online purchasing behaviour was established as dependent variable of the study.

3.2 Research Instruments, Sampling Procedure and Data Collection

The four web-based factors - website design, fulfillment/reliability, customer service and privacy/security - of eTailQ, developed by Wolfinbarger and Gilly [19] were used in this study. The scale was chosen as it has already been tested and validated as strong predictive of customer judgments of quality and satisfaction, customer loyalty and attitudes toward the website. 14 items of the four web-based factors originally proposed in e-TailQ [19] with three additional items (for Web Design factor) based on the work of Shergill and Chen [8] was employed.

Website information quality (with seven items), which is one of the dimensions in WEBQUAL4, proposed by Barnes and Vidgen [21], was additional factor included in the web-based factors of this study. 24 items of these five factors (Refer to Table 1) were developed in the questionnaire. Three questions (The idea of using this website to purchase a product or service is appealing, I like the idea of purchasing a product or service on this website, and Using this website to purchase a product or service at this store would be a good idea), which were adopted from Hans, Tibert and Marcel [31], were used to measure attitudes towards or online purchasing behaviour. The items were rated using five point Likert scales of 1=strongly disagree, 2=disagree, 3=somewhat agree, 4=agree and 5=strongly agree.

All ICT undergraduate students of a public university served as a population of this study. In multivariate research, the sample size required should be 5 to 10 times of variables for 10% and 5% margin error [32]. The number of questions in the questionnaire was 27 and, therefore 270 questionnaires must be collected to ensure 5% of margin error. However, 320 questionnaires were distributed, and 310 of them were gathered and completed for further analysis. The Stratified Random Sampling technique (based on students’ year of study and academic programs) was used in order to increase the accuracy of the data and the representativeness of the population of the study. In distributing and collecting the questionnaire, the students were first asked whether or not they have experience in online purchasing. Those who have the experience were asked to complete the questionnaires and then the researchers collected them back instantly.

4.0 Result and Analysis

4.1 Profile of the Respondents

The brief profile of respondents of this study indicated that:

- 47.4% are male respondents and the rest 52.6% are female respondents.
- Most of the respondents (37.4%) are 1st year students. 29.6% are 2nd year students, followed by 3rd year students (22%) and 21% are the final year students.
- In term of academic program, 83 students (26.8%) are pursuing their degree in Computer Science (Software Engineering), which is the highest response rate among the six programs of ICT in this university. The least students (25 students or 8.1%) participated in this study are pursuing their degree in Bachelor of Computer Science (Industrial Computing).

4.2 Instrument assessment and determination of web-based factors affecting online purchasing behaviour

As indicated in Table 1, the KMO measure of sampling for the web-based factors was .919, which was greater than 0.6, supported by Bartlett’s test of Sphericity of 0.00 that was less than 0.05, allowing the research to proceed with factor analysis. The results of Total Variance Explained of Exploratory Factor Analysis (EFA) indicated that five factors in the initial solution with eigenvalues
greater than 1.0 have been extracted with the cumulative percentage of 64.83%. All the 24 items of these five web-based factors were retained based on the results of component matrix with factor loading ≥ 0.5. However, based on result of EFA, the original five web-based factors were reorganized and renaming as follows:

- **Factor 1 - Information Quality.** This factor was retained as in the proposed research framework. 7 items of Information Quality were accurate information, believable information, timely information, relevant information, information is easy to understand, information at right level of details and appropriate format of information.
- **Factor 2** was a combination of items of Fulfilment/Reliability and Customer Service. Hence, it had been renaming as Fulfilment/Reliability/Customer Service. The items were receiving the correct products, on-time delivery, and product represented accurately by the site, responding to customer needs, problem solving and prompt reply.
- **Factor 3** consists of four items proposed in the original items in Website Design factor, and it was retained as Website Design. The items were good selection, competitive prices, understanding the needs of customers and comfort and ease of surfing.
- **Factor 4** consists of four items proposed in the original Web Design factor. The items were in-depth information, time efficiency, ease in completing transaction and level of personalization. Therefore, it was labelled as Quick and Details.
- **Factor 5** was Privacy/Security. Three items of originally proposed in the Privacy/Security factor – privacy protected, feel safe in transaction and adequate security – were retained.

Reliability coefficient assessing the consistency of the entire scale, in which *Cronbach’s Alpha* is the most often used; and it is generally agreed that Cronbach’s Alpha should exceed 0.70. In this study, the alpha value for all five factors was 0.940. Specifically, the Cronbach’s Alpha values for Information Quality was .902, Fulfilment/Reliability/Customer Service (.842), Website Design (.828), Quick and Details (.814), and Privacy/Security (.865) respectively.

### 4.3 Examining web-based factors affecting online purchasing behaviour

As presented in Table 2, result of Multiple Regression Analysis indicated that Information Quality (β=.292, p-value<0.05), Quick and Details (β=.151, p-value<0.05) and Privacy/Security (β=.017, p-value<0.05) were positively and significantly affected online purchasing behavior. The effect of Fulfilment/Reliability/Customer service (Sig. .109, p-value<0.05) and Web Design (Sig. .569, p-value<0.05) of web-based factors on online purchasing behavior was insignificant.

### 5.0 Discussions

Based on the EFA analysis, web-based factors that are considered by ICT students when they do online purchase were Information quality, Web Design, Fulfilment/Reliability/Customer service, Quick and Details and Privacy/Security. The result of Multiple Regression indicated that Information quality, Quick and Details and Privacy/Security were positively and significantly affected the online purchasing behaviour of the students. Based on these findings, the major implication of this study can be discussed in the following three perspectives:

- **Issue of Web Design factor** – Four items of the originally proposed Web Design factor were found to have insignificant effect on online purchase behaviour. This is consistent with Syed, et.al [5] who found insignificant relationship between Web Design and online purchasing behaviour. Young consumers of ICT students’ perceived characteristics of web site design as less important factor that would likely to influence their online buying behavior. These characteristics include elements of good selection, competitive prices, understanding the needs of customers and comfort and ease of surfing feature in the websites. In contrast, four items of Quick and Details (originally there were items of Web Design factor) were positively and
Table 1: Rotated Factor Matrices of Perceived Factors affecting Online Purchase by Online Buyers

| Variables | Factors | 1 | 2 | 3 | 4 | 5 |
|-----------|---------|---|---|---|---|---|
| IQ1       | The website provides accurate information. | .688 | .209 | .140 | .284 | .286 |
| IQ2       | The website provides believable information. | .766 | .105 | .110 | .120 | .292 |
| IQ3       | The website provides timely information. | .770 | .159 | .225 | .041 | .213 |
| IQ4       | The website provides relevant information | .726 | .240 | .183 | .199 | .094 |
| IQ5       | Information provided was easy to understand | .635 | .322 | .317 | .172 | .100 |
| IQ6       | The website provides information at the right level of detail | .536 | .435 | .072 | .379 | .031 |
| IQ7       | The website presents the information in an appropriate format | .635 | .322 | .317 | .172 | .100 |
| FR8       | I received my product which I ordered from the site | .277 | .617 | .218 | .179 | .133 |
| FR9       | I received my product by the time promised by the company | .371 | .575 | .196 | .092 | .152 |
| FR10      | I received the product represented accurately by the site | .221 | .655 | .261 | .012 | .177 |
| CS11      | I feel the company was willing and ready to respond to customer needs. | .174 | .724 | .106 | .139 | .150 |
| CS12      | The website showed a sincere interest in solving the problem when I face it. | .115 | .712 | .088 | .190 | .100 |
| CS13      | The inquiries were answered promptly | .089 | .623 | .118 | .319 | .285 |
| WD14      | The website has good selection | .041 | .306 | .695 | .309 | .157 |
| WD15      | The site has competitive prices | .075 | .262 | .794 | .118 | .566 |
| WD16      | The website understands my needs | .348 | .145 | .722 | .141 | .123 |
| WD17      | I feel comfortable in surfing this site | .344 | -.008 | .669 | .273 | .073 |
| WD18      | The website provides in-depth information | .305 | .219 | .184 | .726 | .039 |
| WD19      | The site doesn’t waste my time | .123 | .154 | .306 | .734 | .158 |
| WD20      | It is quick and easy to complete a transaction at this website | .260 | .193 | .266 | .554 | .167 |
| WD21      | The level of personalization at site is about right, not too much or too little | .181 | .262 | .486 | .503 | .293 |
| PS22      | I feel my privacy was being protected by this site | .112 | .357 | .084 | .151 | .766 |
| PS23      | The transaction of the website makes me feel safe | .237 | .236 | .064 | .056 | .850 |
| PS24      | The website provides adequate security features | .350 | .092 | .097 | .182 | .783 |

Total variation explained by these factors: 64.833%

Cronbach’s Alpha: 0.940
Kaiser-Meyer-Olkin Measure of Sampling Adequacy: 0.919
Barlett’s Test of Sphericity:
- Approx. Chi-Square: 4410.471
- D.F.: 276
- Significance: .000

Table 2: Regression between Web-Based Factors and Online Purchasing Behaviour

| Model | Unstandardized Coefficients | Standardized Coefficients | t | Sig. | VIF |
|-------|-----------------------------|----------------------------|---|------|-----|
|       | B | Std. Error | β |     |     |
| 1 (Constant) | 1.069 | .216 | | 4.960 | .000 |
| Information quality | .299 | .072 | .292 | 4.149 | .000** | 2.302 |
| Fulfilment/reliability/customer service | .117 | .073 | .108 | 1.608 | .109 | 2.095 |
| Website Design | .035 | .062 | .037 | .570 | .569 | 1.910 |
| Quick and Details | .156 | .074 | .151 | 2.121 | .035* | 2.363 |
| Privacy/Security | .102 | .051 | .117 | 2.007 | .046* | 1.574 |

Note: * p<0.05; ** p<0.01
F statistic: 78.546
R²: .346
significantly affected consumers’ online purchasing behaviour. This finding is consistent with the work of Wolfinbarger and Gilly [19] who was suggested that web design is a strong predictive of customer judgments of quality of and attitudes toward the website. The design characteristics of a website that exhibit much influence on young ICT students’ online behaviour were in-depth information, time efficiency, ease in completing transaction and level of personalization. In this study, ICT professional valued time efficiency and ease in completing transactions, and this finding support the idea of Ruchi et al. [6] who were highlighted that navigation of a website are the most sought after factors consumers are looking for when dealing with the web-site. This suggests that efficiency in online transaction is important as being addressed in e-SERVQUAL scale [23]. In addition, this group of consumers valued rich product related information that stimulate information processing before they commit in any online purchase decision.

- **Information quality** was found to have significant effect on online purchase behaviour, which is consistent with the study of Ranganathan and Ganapathy [24], Zhang and Von Dran [33]. Considering the online market is highly competitive, and users experience and expectation from online services are fast changing, it was necessary for the online companies to provide quality information in the websites. Two types of information; non-value-added and value-added; should be used by search mechanisms in web-based stores, which can lead to shoppers gaining a feeling of increased convenience, and allow them to make quick and right online purchase decision.

- The finding of this study highlighted that privacy/security is important in an online buying situation, which is consistent with the work of Shergill and Chen [8], Wolfinbarger and Gilly [19], Ranganathan and Ganapathy [24], Ahuja, et.al [29], Chen and Tsao et al. [34]. Considering ICT students are information technology literate, issues related to transaction security, financial and identity theft, misuse of personal information are universal regardless of the extent to which online consumers possess knowledge in information or web-based systems. Consumers’ perceived privacy/security of online purchasing has a critical effect on their decision making, and therefore, procedure and policy related to safeguard of individuals’ personal information and the security of online transaction systems must be well addressed in the B2C market.

### 6.0 Conclusions

In this research, respondents who are information technology literate were chosen to examine the effect of web-based factors on their online purchase behavior. Information Quality ($\beta=.292$, p-value<0.05), Quick and Details ($\beta=.151$, p-value<0.05) and Privacy/Security ($\beta=.017$, p-value<0.05) of web-based factors were positively and significantly influence the behavior of online purchasing of this group of consumers. Despite meeting the research questions of the study, further study should be carried out to validate this finding by extending involvement of ICT students to cover all Malaysian public universities. Further, specific online shopping website was not determined in this study, and this make very difficult for E-marketers to focus on website improvement. Therefore, specific online shopping website (e.g. eBay) is suggested to cover.

### References

[1] Turban E.King D., Lee, J. K. and Viehland D. (2009) Electronic Commerce 2009: A Managerial Perspective. Prentice Hall.

[2] Kenneth C. Laudon and Carol Guercio Traver (2010), ‘E-Commerce: Business, Technology, and Society’. Pearson Education, 6th edition, USA.
[3] The Star Online, More Malaysians Shopping Online, Retrieved May 18 2012, from http://thestar.com.my/metro/story.asp?file=/2012/5/18/metrobiz/11306418&sec=metrobiz
[4] John and Lim (2001), “Drivers and Impediments to E-Commerce in Malaysia”, Malaysian Journal of Library & Information Science, Vol. 6, no. 2, December 2001: 1-19
[5] Syed, Zaharah, Hishamuddin and Nitufar (2008)’Young consumers online shopping: an empirical study’, Journal of Internet Business, Issue 5, pp. 81-98.
[6] Ruchi, Ashish and Gupta. (2010) ’To study the impact of website factors on consumer online buying behaviour in India’, UMMR, Volume1, Issue 1, pp. 1-16.
[7] Zeithaml, Parasuraman, and Malhotra, (2002) “A Conceptual Framework for Understanding e-Service Quality: Implications for Future Research and Managerial Practice,” MSI Monograph, Report # 00-115.
[8] Shergill, G.S. & and Chen, Z. (2005). Web-based shopping: Consumers’ attitudes towards online shopping in New Zealand, Journal of Electronic Commerce Research, VOL. 6, No.2.
[9] Yam B. Limbu, Marco Wolf and Dale L. Lunsford (2011), ‘Consumers’ perceptions of online ethics and its effects on satisfaction and loyalty’, Journal of Research in Interactive Marketing, Vol. 5 No. 1, 2011, pp. 71-89.
[10] Grace and Chia (2009), ’Factors influencing satisfaction and loyalty in online shopping: and integrated model’, Online Information Review, Vol. 33 Iss: 3 pp. 458-475.
[11] Nunes, P.F. (2011), “Marketing: Dazed and Confused”, Outlook Journal, No. 1., pp. 41-47.
[12] Feller, B. (2003). Students Rule Net Population. Marketing News, 34 (24).
[13] Haque, A. and Khatibi, A., (2005). E-shopping: Current Practices and Future Opportunities towards Malaysian Consumer Perspective. Journal of Social Sciences, vol. 1, Issue 1, pp. 41-46.
[14] Na Li and Ping Zhang (2002), ‘Consumer Online Shopping Attitudes and Behaviour: Assessment of Research’, English Americas Conference on Information Systems, pp.508-517.
[15] Ajzen, I. and Fishbein, M. (1980), Understanding Attitudes and Predicting Social Behaviour, Prentice-Hall, Englewood Cliffs, NJ.
[16] Ajzen, I. (1991) “The Theory of Planned behaviour”, Organizational Behaviour and Human decision Processes, Vol. 50, 179 211.
[17] Davis, F. (1985). A technology acceptance model for empirically testing new end-user information systems: theory and results. Unpublished Doctoral dissertation, MIT Sloan School of Management, Cambridge, MA.
[18] Ranganathan, C. and Ganapathy, S. (2002) ‘Key dimensions of business-to-consumer Web sites’, Information and Management, Vol. 39, pp. 457-465.
[19] Vijayasarithy, L. and Jones, J.M. (2000) ‘Print and Internet catalog shopping: assessing attitudes and intentions’, Internet Research: Electronic Networking Applications and Policy, Vol. 10, No. 3, pp. 191-202.
[20] Barnes, S. and Vidgen, R., 2003. Interactive e-government: evaluating the web site of the UK Inland Revenue. Journal of Electronic Commerce in Organizations, 2 (1).
[21] Yoo and Naveen Donthu (2001). Developing a Scale to Measure the Perceived Quality of an Internet Shopping Site (SITEQUAL). Quarterly Journal of Electronic Commerce, 2 (1), 31-47.
[22] Zeithaml, Parasuraman, and Malhotra, “A Conceptual Framework for Understanding e-Service Quality: Implications for Future Research and Managerial Practice,” MSI Monograph, Report # 00-115, 2002.
[23] Roman, S. (2007), "The ethics of online retailing: a scale development and validation from the consumers' perspective", Journal of Business Ethics, Vol. 72 No.2, pp.131-48.
[24] Chiu, C.M., Chang, C.C., Cheng, H.L., Fang, Y.H. (2009). “Determinants of customer repurchase intention in online shopping”, Online Information Review, Vol. 33 No.4, pp.761-84.
[25] Roman, S. (2007), "The ethics of online retailing: a scale development and validation from the consumers' perspective", Journal of Business Ethics, Vol. 72 No.2, pp.131-48.
[26] Ajuhaak, Y. and Borman, P. (2003), ”An empirical investigation of online consumer purchasing behavior”, Communication of the ACM, Vol. 46 No.12, pp.145-51.
[27] Szymanski, D.M., and Hise, R.T. “e-Satisfaction: An initial examination”, Journal of Retailing (76:3) 2000, pp 309-322.
[28] Hair, Joseph, F., Jr., Babin, Barry, Money, Arthur H., and Samouel, Philip. (2003). Essentials of Business Research Methods. Wiley: Malloy Inc., USA.
[29] Zhang, P., and von Dran, G. M. (2000). Satisfactor and dissatisfactors: A two-factor model for website design and evaluation. Journal of the American Society for Information Science, 51(4), pp 1253-1268.
[30] Chen, Tsao, Lin and Hsu (2008), ‘A conjoint study of the relationship between website attributes and consumer purchase intentions’. PACIS 2008 Proceedings. Paper 224.