The Effect of E-Business Website Quality
on Customer Satisfaction

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Abstract

Online shopping popularity has been growing rapidly among Malaysian residents especially urban citizens since the widespread accessibility and affordability of the internet facilities. The aims of this paper is to determine the effect of e-business website quality on customer satisfaction. From the academic perspectives, website quality is typically being existence as an uncertain movement to handle e-business service. A few studies discusses on e-business website quality and customer satisfaction specifically in urban with inconsistent opinions. A quantitative survey of this research is conducted in which questionnaires are distributed to 150 respondents randomly and selected among people working in Shah Alam. The data are analysed specifically using descriptive statistics, reliability, validity, and regression analysis. Results of testing the effect between e-business website quality and customer satisfaction are found to be mixed. For example, website design, information quality, and transaction and payment capability, have direct and positive effect on customer satisfaction. On the other hand, security and privacy, and delivery service have insignificant effect on customer satisfaction. In addition, the proposed website dimensions can be used by web creators and makers to build quality websites to increase the electronic service and the profile of any organization on the internet.

Keywords:, Customer satisfaction , E-business, Website quality, Malaysia

1   Introduction

E-commerce has increasingly gaining popularity. Particularly, Malaysia is comprehended on the expansions of information technology, and internet usage is increasingly and extensively seen as a main activator to surge in utilizing e-commerce services globally. As e-commerce successfully eliminates geographical limitations, it provides numerous new opportunities to both consumers and firms. Consumers are benefited in terms of price comparison, adequate product information, wider choices of products and services, and the ease of shopping at any time and almost anywhere. At the same time, firms gain new customers who have internet accessibility with minimum payments such as maintenance, rent, and inventory as well as they are offered with high privilege in e-services. It was reported that the size of e-commerce market in Malaysia has achieved RM1.8 billion in 2010, and persistently increase to RM5 billion in 2014. Specifically, Malaysia has progressively shown between RM2 - RM3 billion per year in e-commerce market (Malaysia Crunch, 2013). The application of e-

commerce is seen as a way to improve the business performance. If customer satisfaction is met, they will eventually continue to be faithful in using e-commerce as a way of purchasing. In short, e-commerce is the only expressive approaches in businesess today.

Nowadays, there are extremely intensed competition among online retailers. Hence, a lot of businesses use e-commerce in trying to gain competitive advantages by having close interaction with their customers (Lee & Lin, 2005). Yang (2001) recommended that retailers are encouraged to provide practical features and prices of products online as compared with offline instrument. Therefore, the consumers will notify on most favourable prices when looking for products and services. As far as marketing for online shopping is concerned, it important to establish knowledge or data on the determinants of purchase intentions, service quality and customer satisfaction.

Moreover, previous studies have identified that the most important factor to have an effective e-commerce is service quality (Bai et el., 2008; Noronha & Rao, 2017). A research has shown that there are high possibilities where the customers will share their experience with other people if they are satisfied with services offered by retailers (Nelson, 2012). Most retailers have been facing difficulty realising their customer satisfaction especially in maintaining the loyal customer as well as to engage with potential customers. Thus, online retailers should look into the backgrounds of customer satisfaction in their businesses (Guo et al., 2012). When these aspects are competently agreed, automatically the customer satisfaction will materialise and increase and consequently improve business performance. There has been little research as to what extent e-business website quality affects customer satisfaction. Hence, this paper examines the effect of e-business website quality on customer satisfaction in the Selangor state of Peninsular Malaysia.

2   Literature Review

The quality of website plays a vital role in the success of a website in order to engage, gain and sustain customers through e-business. According to Liao et al. (2009) reveal that high quality website is the key factor and would inspire an online customer decisions' either to purchase or not. In contrast, websites with low quality could give negative effect of e-business such as lost of customers, increase in cost and profit reduction. Consequently, it is important to notify that the customer purchasing decisions is depend on how website quality could effects customer trust on the websites. Selected of websites quality features such as the quality of information, response time and visual attraction affect customer perception (Liao et al., 2009). With high quality website, the customers have confidence with the seller who has compassion, expertness, integrity and make them tend to have higher trust and willingness to depend on the seller (Liao et al., 2009).

2.1 Customer Satisfaction

Customer satisfaction is defined as an evaluation of overall customer's performance towards an offering products or services to date. It implies a strong positive effect between customer loyalty from different categories of product and service on customer satisfaction (Gustafsson et al., 2005). Solomon (1999) also defined customer satisfaction as the overall attitude of the individual toward the bought merchandise. Organizations should measure their customer satisfaction since they cannot keep something that they cannot maintain effectively. It has two primary explanations about satisfaction from the previuos studies which are (i) procedure in satisfaction and, (ii) consequence of satisfaction (Parker & Mathews, 2001).

2.2 Website Design and Customer Satisfaction

Website design denotes as characteristics of a website as it serves important elements to attract the usage of online shopper which will be reflected on the customers' satisfaction level. Website design can be described as the appeal of user interface design presents to customers (Kim & Lee, 2002). There

are several components of physical design such as information design, navigation, layout and appearance which are significant but insufficient (Mei Cao et al., 2005). Besides the software components, the hardwares' capabilities should also be deliberated to ensure that customers who access the website can be loaded within acceptable time. A good website must have an inspired and smart design apportioned with suitable content that allows the users to trust and interact effectively with the sellers (Gefen, 2000; Wolfinbarger & Gilly, 2002).

The appearances of the website would ascertain customers' sensitivity towards the online shop in which case a first time shopper is influenced and concerned with the trustworthy of the website (Guo et al., 2012). It was recommended that a company's website must also be pleasing and attractive to customers' sight. In addition, the website must be able to be personalized according to specific customers' desires (Gefen, 2002). Furthermore, website design plays a crucial role in helping customers to trace information. Well-designed websites reduce time in searching of information and potentials for incompatibility (Luo, 2012). Additionally, design factors related to visual signs (e.g. layout and colour) are too influential in order to encourage customers' feedback and enable to get aspirations from customers (Eroglu et al., 2001). Also, with reference to the factors of a good website design, it must accord with beauty and appeals as well as high levels of usability. This refers to customers' ability to find where he or she is and what he or she can do in every moment of the navigation in order to positively influence the affective states of the users (Desmet & Hekkert, 2007).

2.3 Information Quality and Customer Satisfaction

During decision making process in the online environment, customers are too careful with the information that they obtain (Ghasemaghaei & Hassanein, 2013). Due to failure of physical interaction with the product, it is proposed to obtain accurate informations which lead them to have proper procedure. Online business allow customers to select various collection of products, inexpensive prices and most customers preferred to have an easy access to information (Khristianto et al., 2012). Information quality refers to overall decision made by consumers and evaluation of information quality, measured by the degree of accuracy, informativeness, timeliness, and relevancy of information provided by the website (Lin, 2013). Information quality is expected to assist customers in comparing products, making informed purchases, and enhancing transaction security (Liu & Arnett, 2000; Park & Kim, 2003). In addition, website with an adequate information will motivate customers to purchase online (Kuo & Chen, 2011). This paper expects to improve information quality specifically information informativeness and security that would reach customer satisfaction at higher level.

2.4 Security and Privacy towards Customer Satisfaction

The concept of privacy is defined as the potential of customers to execute others presence during the transaction process, and the occurance of transcation process is without others to control (Goodwin, 1991). Privacy also refers to how the customers' perceived on the possibility of a seller to safeguard a consumer's pre-purchase decision (Kim et al., 2009). For example, while doing transactions online, online sellers collect the details of the buyer which includes name, email, telephone number, and address (Flavia'n & Guinaly'u, 2006). Due to this, it may be probable that some of the sellers share those confidential information to unknown mailers. The unlawful activity could jeopardise the customers' identification, for example, spamming the imitation of credit card statement. This issue drives to have highly information protection and security among numerous online buyers.

Security refers to customers' awareness on internet retailers to satisfy security requirements such as verification, integrity, encryption, and non-repudiation (Kim et al., 2009). The security level of online transactions provided by the seller depends on customer knowledge and understanding. The customers could be aware with security features comprising for example security policy, disclaimer, security guarantees and they guarantee with security mechanism on a seller's website to protect their information during online transactions (Kim et al., 2009). Therefore, it will surge customers trust on security

protection of the seller and also reduces the risks observed by customers while making an online transaction.

2.5 Transaction and Payment Capability towards Customer Satisfaction

Transaction and payment capability is the central aspect for customers to consider in online purchases where they are aware with the ability of retailer to provide safely and comfortably online payment transactions. The forms of online payment method such as credit card, cash payment and interbank transfer are mostly practically provided by the online retailers. The majority of business-to-customer (B2C) use credit card as mode of payment at 60% and followed by most popular payment method which is online bank transfer at 30% (Turban, King, Lang, & Lai, 2010). However, customers sometimes are conscious with the payment issues of accessibility and security (Guo et al, 2012). The website speed is another element to be deliberated for a successful website where the shoppers would not be returning to e-commerce sites with poor performance as normally they expect to incur loading time with shortest seconds.

2.6 Delivery Service and Customer Satisfaction

Delivery service is measured to identify the estimated distribution package when customers place their orders at the post-purchase stage and after customers have received their products. Besides having a standard delivery, customers can choose on how the product is to be delivered which online retailer usually can provide neither post-express delivery nor cash on delivery. In addition, the indication for reasonable amount of delivery charges should stated clearly and devoid of any hidden costs. Thus, e-commerce owners should be more responsive to the merchandise tracking and collaborate it with the delivery merchants to afford deliveries with high quality, such as right order, time schedules, and safety wrapping (Khalid et al., 2018).

3.   Research Framework and Method

The research framework on the effect of website quality on customer satisfaction is as illustrated in Figure 1. The variables for website quality included in the research framework are as follows; website design, information quality, secutity and privacy, transaction and payment capability and delivery service (Ling et al., 2016; Che Nawi et al., 2015). Meanwhile, customer satisfaction represents the dependent variable (Noronha & Rao, 2017; Lee & Lin, 2005).
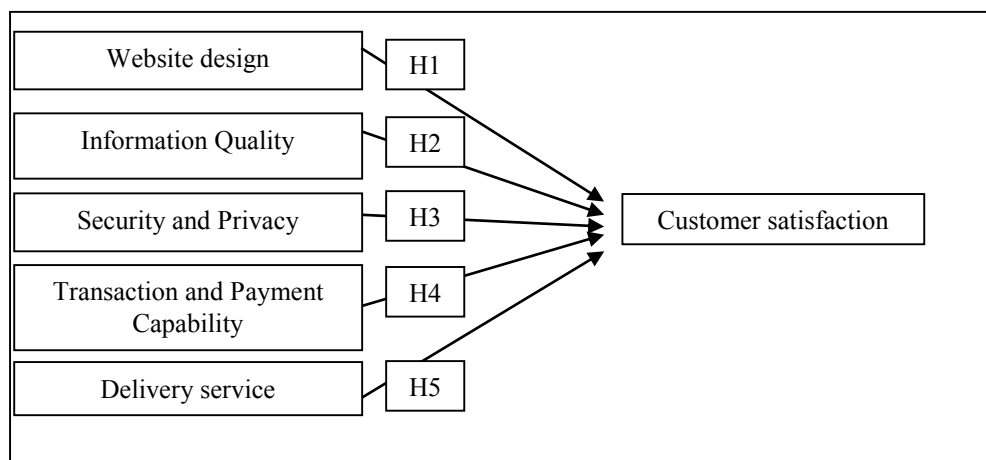

Figure 1: Research Framework of Website Quality

In summary of the literature on the relationship between website quality and customer satisfaction lead to the development of following hypothesis.

Hypotheses:
H1: The website design has a significant effect on customer satisfaction.
H2: The information quality has a significant effect on customer satisfaction.
H3: The security and privacy has a significant effect on customer satisfaction.
H4: The transaction and payment capability has a significant effect on customer satisfaction.
H5: The delivery service has a significant effect on customer satisfaction.

In this paper, survey method was used. Primary data was collected from a sample of 150 respondents in the Shah Alam region of Selangor state. The target population for the survey was mostly working adults. The scale to measure the questionnaire is five-point Likert scale with 1=very dissatisfied, 2=dissatisfied, 3=unsure, 4=satisfied and 5=very satisfied. The questionnaires were self-distributed and in google forms format with convenient sampling method. The respondents were required to use their unique ID such as email address to avoid response redundancy. This study then used the statistical package for social sciences (SPSS) for the purpose of data analysis. The values such as factor loading and Cronbach's alpha were determined. The questionnaire was divided into three sections. Section A composed of the respondents' demographic profile and Section C gathered comments and recommendations from the respondents. Section B consists of 6 parts: Part A (Customer satisfaction), Part B (Website design), Part C (Information quality), Part D (Security and privacy), Part E (Transaction and payment capability) and Part F (Delivery service). The questions in Section B were taken from the previous study of Che Nawi et al. (2015).

4. Results and Analysis

From Table 1, all of the values presented comprise composite reliability and Cronbach's alpha which are greater than 0.7 (Nunnally, 1978).

Table 1. Quality Criterion

Reliability Statistics	Cronbach's Alpha
Website design	.878
Information quality	.875
Security and privacy	.879
Transaction and payment capability	.865
Delivery service	.901

Table 2 shows that overall customer satisfaction with website quality range in between the mean value of 4.15 and 4.27 which is *"I believe shopping online allows me to get a better price"* and *"I believe that shopping over the Internet is easy"*. In relation to website design, majority of the respondents agreed to have *"The design of the website is creative"* (mean value 4.14) and *"I like the layout of the website"* (mean value 4.227). Pertaining to information quality, *"The information provided on the website is easily understood"* scored a mean value of 3.98 and *"The website contains all the information that I need for the purpose of my purchase decision"* has a mean value of 4.05. With respect to security and privacy, *"The website has adequate security features"* and *"I feel my personal information is secure on this website"* have the same mean value of 4.00 and *"I feel secure doing transactions on this website"* attained a mean value of 4.06. With regards to transaction and payment capability, the statements which scored a mean value of 4.06 and 4.14 respectively were *"I feel comfortable using the payment options provided by the website"* and *"This website provides several options for payment such as post office remittance, online payment, and cash on delivery"*.

Corresponding to delivery service, *"The website charges a standard price for the delivery service"* achieved a mean value of 4.03 and *"The website provides clear terms and conditions for delivery service"* has a mean value of 4.10.

Table 2. Descriptive Analysis

Variables	Mean	Std. Deviation
Customer Satisfaction		
I believe that shopping over the Internet is easy.	4.2733	.68441
I believe shopping online is compatible with my lifestyle.	4.1933	.73910
I believe shopping online allows me to get a better price.	4.1533	.63178
I believe that the website provides relevant information.	4.1800	.74248
Website Design		
I like the layout of the website.	4.2267	.69656
The design of the website is creative.	4.1467	.62805
The start page easily leads me to the information I need.	4.2200	.68414
The display pages within the website are easy to read.	4.1933	.66248
Information Quality		
I believe that the website provides accurate information.	4.0067	.70944
The information provided on the website is sufficient.	3.9867	.69501
The information provided on the website is easily understood.	4.0333	.67968
The website contains all the information that I need for the purpose of my purchase decision.	4.0533	.76664
Security and Privacy		
I feel secure doing transactions on this website.	4.0600	.63700
The website has adequate security features.	4.0067	.61847
This website provides clear and understandable terms and conditions.	4.0200	.67027
I feel my personal information is secure on this website.	4.0067	.69026
Transaction and Payment Capability		
This website provides several options for payment such as post office remittance, online payment, and cash on delivery.	4.1467	.53579
I feel comfortable using the payment options provided by the website.	4.0667	.58696
I have many options to receive proof of my payment to the website (such as email, SMS, etc.).	4.1000	.64246
When I use the website, the waiting time between my actions and the website response is very short.	4.0800	.58528
Delivery Service		
The website offers many options for delivery service such as standard post, express delivery, and home delivery.	4.0733	.66652
The website charges a standard price for the delivery service.	4.0333	.69915
The website provides clear terms and conditions for delivery service.	4.1000	.66302
The website offers free service delivery if the customers purchase more than one item.	4.0400	.75866

Table 3 shows the results of tested hypotheses of five variables under study. The variables such as website design, information quality and transaction and payment capability with p-value < 0.05 indicated the result has positive and significant relationship with customer satisfaction.

Table 3. Result of Hypotheses Testing

Direction	Hypnotised	β value	P value	Result
Website design – customer satisfaction	+	.425	< 0.05	Supported
Information quality - customer satisfaction	+	.193	< 0.05	Supported
Security and privacy - customer satisfaction	+	.064	> 0.05	Not supported
Transaction and payment capability - customer satisfaction	+	.233	< 0.05	Supported
Delivery service - customer satisfaction	+	.011	> 0.05	Not supported

5. Conclusion and Future Scope

From the above results, we can conclude that among the five identified factors, only website design, information quality, transaction and payment capability significantly affect customer satisfaction. The result is highly supported with the research conclusion of Noronha and Rao (2017) and Lee and Lin (2005) who found that information provided by an online store significantly affects customer satisfaction. It is where good websites design will decrease time searching of information, and reduce discrepancy' risks (Luo, Ba & Zhang, 2012). And also, it should contain a well-structured of screen layout and design, intelligible graphics and vibrant color alignment (Ling, Fern, Boon & Huat, 2016; Ahmad & Al- Zu'bi, 2011). The higher the information quality, the higher probably that it will increase customer satisfaction (Schwake, et al., 2015) and by providing appropriate information on a website, it will encourage customers to purchase online (Kuo & Chen, 2011). In addition, online customers would deliberate the payment issues such as convenience and security (Guo et al, 2012).

Although, security and privacy and delivery services shows insignificant relationship with customer satisfaction, these variables cannot be discounted because previous study had shown that these variables are valuable partly as in measuring customer satisfaction toward website quality. Due to the security issues such as identity theft and financial fraud, its would effect on e-business performance which require to have secure communication networks and well established privacy settings. Therefore, factors like confidentiality and safety of customer's information is important in order to attract and retain customers effectively (Yazdanifard, et al., 2011). In relation to delivery services, the online retailers should constantly deliver the right products (reliable delivery), packaged the product safely (safety packaging) and products should be able to meet the promised delivery schedule (timely delivery) until it arrives in the hand of customers (Handoko, 2016).

In future studies, the respondents who live in rural region are to be considered. The present study is limited to identifying five variables under website quality which influence customer satisfaction. It is suggested that other factors affecting website quality may also be included.

References

Ahmad, A. E., & Al-Zu' bi, H. A. (2011). E-banking functionality and outcomes of customer satisfaction: An empirical investigation. *International Journal of Marketing Studies*, *3*(1), 51-59.

Bai B., Law, R., & Wen, I. (2008). The impact of website quality on customer satisfaction and purchase intentions: Evidence from Chinese online visitors. *International Journal of Hospitality Management*, *27*, 391–402.

Che Nwi, N., Al Mamun, A., & Ahmad, R. N. (2015). Examining the key factors affecting e-service quality of small online apparel businesses in Malaysia. *SAGE Open*, April–June: 1–10, doi: 10.1177/2158244015576550.

Desmet P. M. A., & Hekkert, P. (2007). Framework of product experience. *International Journal of Design*, *1*(1), 57-66.

Eroglu,S. A., Machleit, K. A., & Davis, L. M. (2001). Atmospheric qualities of online retailing: A conceptual model and implications. *Journal of Business Research*, *54*(2), 177-184.

Flavia', C. & M. Guinaly' U. (2006). Consumer trust, perceived security and privacy policy: Three basic elements of loyalty to a web site. *Industrial Management & Data Systems*, *106*(5), 601-620.

Gefen, D. (2000). E-commerce: The role of familiarity and trust. *Omega*, *28*(6), 725-737.

Ghasemaghaei, M., & Hassanein, K. (2013). Customers' satisfaction with online information quality: The moderating roles of customer decision making style, gender and product involvement. retrieved from:
http://aisel.aisnet.org/cgi/viewcontent.cgi?article=1079andcontext=ecis2013_rip.

Goodwin, C. (1991). Privacy: Recognition of a consumer right. *Journal of Public policy Marketing*, *10*(1), 149-166.

Guo, X., Ling, K. C., & Liu, M. (2012). Evaluating factors influencing customer satisfaction towards online shopping in China. *Asian Social Science*, *8*(13), 40-50.

Gustafsson, A., Johnson, D., M., & Roos, I. (2005). The effects of customer satisfaction, relationship commitment dimensions, and triggers on customer retention. *Journal of Marketing*, *69,* 210–218.

Handoko, L. P. (2016). The effect of product quality and delivery service on online-customer satisfaction in Zalora Indonesia. *Jurnal EMBA*, *4*(1), 1189–1199.

Khalid, A., Lee, O., Choi, M., & Ahn, J. (2018), The effects of customer satisfaction with e-commerce system, *Journal of Theoretical and Applied Information Technology*, *96*(2), 481-491.

Khristianto, W., Kertahadi, I., & Suyadi, I. (2012). The influence of information, system and service on customer satisfaction and loyalty in online shopping. *International Journal of Academic Research*, *4*(2), 28-32.

Kim, D. J., Donald, L. F., & Raghav Rao, H. (2009). Trust and satisfaction, two stepping stones for success e-commerce relationship: A longitudinal exploration. *Information System Research*, *20*(2), 237-257.

Kim, J., & Lee, J. (2002). Critical design factors for successful e-commerce systems. *Behaviour and Information Technology*, *21*(3), 185-9.

Kuo, H. M., & Chen, C. W. (2011). Application of quality function deployment to improve the quality of internet shopping website interface design. *International Journal of Innovative Computing, Information & Control*, *7*, 253-268.

Lee, G. G. & Lin, H. F. (2005). Customer perceptions of e-service quality in online shopping. *International Journal of Retail & Distribution Management, 33*(2), 161-176.

Liao, C., Palvia, P., & Chen, J. L. (2009). Information technology adoption behavior life cycle: Toward a technology continuance theory. *International Journal of Information Management,* (29), 309-320.

Lin, P. H. (2013). Shopping motivations on the internet: An empirical study of trust, satisfaction and loyalty. *International Journal of Electronic Business Management*, *11*(40), 238-246.

Ling, G. M., Fern, Y. S., Boon, L. K., & Huat, T. S. (2016). Understanding customer satisfaction of internet banking: A case study in Malacca. In *Procedia Economics and Finance,* 37, 80–85. https://doi.org/10.1016/S2212-5671(16)30096-X

Liu, C.,& Arnett, K. P. (2000). Exploring the factors associated with web site success in the context of electronic commerce. *Information and Management*, *38*(1), 23-33.

Luo, J. Ba, S., & Zhang, H. (2012). The effectiveness of online shopping characteristics and well-designed websites on satisfaction. *MIS Quarterly*, *36*(4), A1-A9.

Malaysia Crunch. (2013). Malaysia e-commerce Statistic. http://www.malaysia crunch.com/2012/3. retrieved on 18 May 2013.

Mei Ca, Q. Z. (2005). B2C E-commerce web site quality: An empirical examination. *Emerald Group Publishing Limited*, 645-661.

Nelson, R. (2012). The importance of customer satisfaction, retrieved from http://www.wparesearch.com/uncategorized/the-importance-of-customer-satisfaction/

Noronha, A. K., & Rao, P. S. (2017). Effect of website quality on customer satisfaction and purchase intention in online travel ticket booking websites. *Management*, *7*(5), 168-173, doi: 10.5923/j.mm.20170705.02

Nunnally, J. C. (1978). Psychometric Theory (2nd ed.), New York: *McGraw-Hill*.

Park, C., & Kim, Y. (2003). Identifying key factors affecting customer purchase behaviour in an online shopping context. *International Journal of Retail and Distribution Management*, *31*(1), 16–29.

Parker,C., & Mathews, B. (2001). Customer satisfaction: contrasting academic and consumer interpretations. *Marketing Intelligence and Planning*, *19*(1), 38–44.

Schwake, H. I., Ganis Sukoharsono, E., & Handayani, S. R. (2015). Effect of quality information, quality system and quality service to customer satisfaction and customer loyalty (Empirical study on customer service online e-ticket in Pt. BTRAV connection Malang). *Journal of Business and Management*, *17*(4), 42–48. https://doi.org/10.9790/487X-17464248

Solomon, M. R. (1999). *Consumer Behavior (4ᵗʰ ed.)*. Upper Saddle River, NJ: Prentice-Hall, Inc.

Turban, E., King, D., & Lang, J. (2010). *Introduction to electronic commerce (3ʳᵈ ed.)*. New York, NY: Prentice Hall.

Wolfinbarger, M. & Gilly, M. C. (2002). COMQ: Dimensionalizing, measuring and predicting quality of the e-retailing experience. *MSI Working Paper Series*, no. 02-100, Marketing Science Institute, Boston, MA.

Yang, Z. (2001). Consumer perceptions of service quality in internet-based electronic commerce. *In Proceedings of the EMAC Conference,* (Vol. 811).

Yazanifard, R., Edres, N. A.-H., & Seyedi, A. P. (2011). Security and privacy issues as a potential risk for further e-commerce development. *International Conference on Information Communication and Management*, *16*, 23–27. retrieved from http://www.ipcsit.com/vol16/5-ICICM2011M008.pdf