APPLICATION OF DECOMPOSED THEORY OF PLANNED BEHAVIOR ON POST GRADUATE STUDENTS TOWARD ON-LINE SHOPPING

by
Rohaizat Baharun, Faezeh Mirghasemi, Nor Saadah Abd. Rahman [1]
And Zubaidah Awang [2]

[1] Department of Business Administration,
Faculty of Management,
Universiti Teknologi Malaysia.
[2] Language Academy
Universiti Teknologi Malaysia.

ABSTRACT

The increasing use of the Internet in Malaysia provides a developing prospect for E- marketers. Attitude is an important determinant of online shopping behavior and represents the best estimates of future behavior available to market researchers. Among all the theories, the decomposed TPB model determines particular salient beliefs that might influence Information Technology usage and will predict the behavioral intention more reliable. This study sets out to examine the factors influencing students' online shopping attitudes and intentions at one of public university in Malaysia. In this research the non-probability sampling were chosen and the data were collected from 375 postgraduate students in the university. Data were analyzed by structural equation modeling using the Partial Least Squares (PLS) approach. The results of the study showed that perceived usefulness and compatibility were significantly and positively correlated with the attitude of students towards online shopping and also trust as an extent factor indicated to have positive influence on mediator, while perceived ease of use did not provide the significant relationship on attitude. Moreover, it was found that attitude fully mediate the relationship between trust and behavioral intention and also perceived usefulness and behavioral intention, whereas, attitude partially mediates the relation between perceived ease of use also compatibility and behavioral intention.

Key words: Postgraduate students, Attitude, Behavioral intention, on-line shopping, DTPB

1.0 INTRODUCTION

These days, Internet is not just a networking media which provides a lot of information for users, yet it is also used as a way of transaction for customers at world wide market. Using Intenet has grown quickly during the past years and

has become a common means for delivering and trading information, products and services (Albarq, 2006) and online setting (Anaza, 2014). The number of internet users has been continuously increasing all over the world, including developing countries. According to Euro monitor International (2012), in Asia and Eastern Europe internet access rates were considerably higher during the year 2012 and onward. With these capabilities, the internet has the potential to create a fundamental shift in how people communicate (Ross et al 2009).

As the number of internet users increases, the number of customers who shop over the internet is also growing. In addition, due to a more comfortable feeling of shopping online, the younger generation is turning to Internet procurement (Euro monitor International, 2012). According to Euro monitor International (2012) also, worldwide online shopping sales achieved €341.3 billion in 2011, which was a growth of 22 percent from the previous year. In Europe, online shopping sales were €110.1 billion in 2011 that shows growth of 18 percent from 2010. This trend is expected to continue increasing to €670 billion by 2015. In Malaysia, Internet retailing is expected to have a continuous growth, due to the increasing penetration rate of the

internet. The Malaysian government predicts that the broadband penetration rate will reach 75% by 2015 (Euro monitor International, 2012). Therefore, government efforts, together with other entities, will help to improve the broadband penetration rate, whilst boosting internet retailing within Malaysia over the forecast period. However, Kiang et al (2011) investigated that, even though the statistics showed growing online sales, there are still many online customers who use the data gathered online, making purchases offline. This can be proved by the large abandon rates of purchasing carts. Additionally as considered by Broekhuizen and Huizingh, (2009), customers utilize online stores to achieve current market information, where they discover more about prices as well as a product or service differences, but they do not make the last transaction using the online shop.

As mentioned, behavioral intention is determined by consumer's attitudes toward acting the behavior. From an e-business perspective, understanding theories like TRA, TPB, and TAM can provide an appropriate foundation to explain and predict consumers' intention toward adopting online shopping behaviour (Choi and Geistfeld, 2004; Goldsmith, 2002). This understanding will allow e-commerce managers to obtain

better insights into the customers' e-shopping motivation and facilitate them in developing effective strategies towards growing website traffic flow (Wysocki, 2000). Learning from customer is a good moved by the manager, as mentioned by Spender (2013), learning is mystery because we don't have any theory of human learning.

It is important to point out that, many researchers claimed that, there has been an expansion of educational services in Malaysia, while consequently university students have become one of the important consumer market segments (Sabri et al, 2008). Therefore, due to the students' purchasing power in the market, it is vital for web retailers and marketers to completely understand the attitude and intention of this particular group towards online shopping. Hence, to successfully attract this particular population, e-retail service providers must learn more about them, especially in relation to their attitude towards online shopping and online shopping intentions.

The main goal of this study is to investigate purchasing intention of post-graduate students at University Technology Malaysia, with a particular emphasis on understanding and evaluating the factors which indirectly influence their purchasing intention by measuring the mediating role of attitude towards online shopping.

Taylor and Todd (1995a) indicated that a better understanding of the relationship between the belief/trust structures and antecedents of intention requires the decomposition of attitudinal beliefs. They also showed that the decomposed model of the Theory of Planned Behavior has better explanatory power than the pure Theory of Planned Behavior and Theory of Reasoned Action. So, the argument of the decomposed model of the Theory of Planned Behavior gives a more satisfactory explanation in adoption of internet services in many industries will be tested in this study.

2.0   RESEARCH METHODOLOGY
2.1   Research model

In this section, the research model of the study based on DTPB (decomposed theory of planned behavior) is proposed. The model is based on the idea of Taylor and Todd (1995b) that believed TPB can be broken down into multidimensional constructs, while in this research the whole model is not going to be investigated and the focus of the study will be on attitude and constructs like perceived usefulness, perceived ease of use and compatibility which affect the attitude toward online shopping and consequently the impact of them on the intention by mediating attitude

of customers who tend to purchase online. In addition, trust as an important determinant of customer behavior is

integrated into the model. Figure 1 illustrates the conceptual model of study.
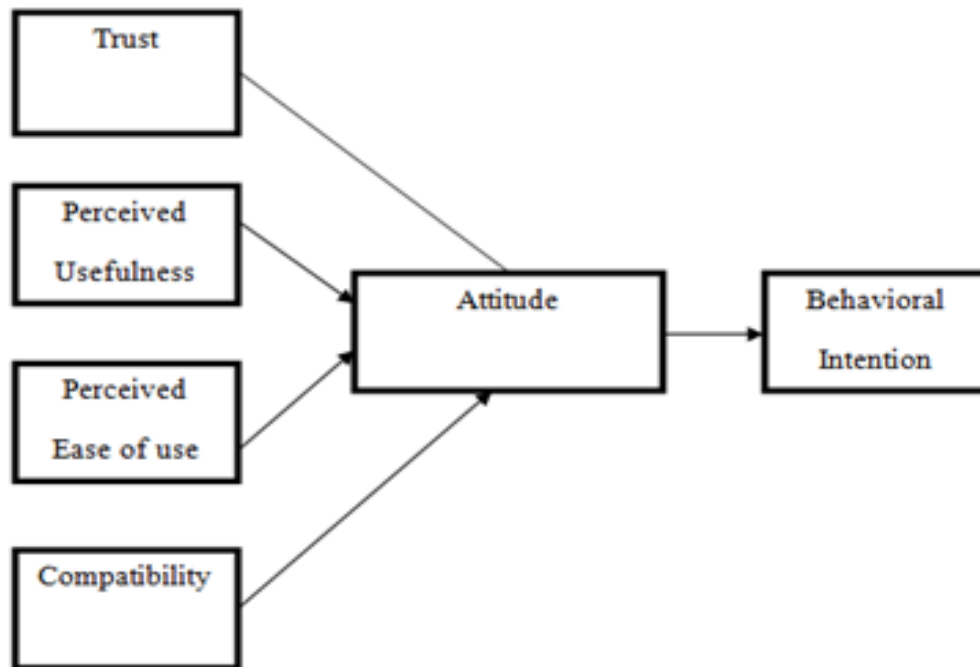
Figure 1: Conceptual Model

2.2 Objectives of study

In general, the objectives of studies related to online shopping behavior are to recognize and predict customers' online purchasing behavior as well as, investigating the factors that affect customers' shopping attitude and intention in order to make the potential consumers to active and improve their marketing strategies. Although a large number of constructs have been investigated by many studies previously, present study as mentioned before, will use decomposed theory of planned behavior to investigate mostly the role of attitude as a mediator

and the influence of that on intention of online shopping customers.

2.3 Population and Sampling

Present study designed to investigate how internet shopping affect customer's attitude and behavioral intention toward online shopping among post graduate students of UTM. The population of this research was all consumers who had at least one time experience of online purchasing. According to Chen (1999), using these types of users in the study is essential since the Internet is a common medium for business to customer (B2C)

electronic commerce. In addition, using respondents who are not familiar with online shopping would possibly bias the results.

According to Zendehdel and Paim, (2013) and Cvjeticanin et.al (2013), students are potentially capable of using internet services and are believed to be the most active and frequent internet users. Hence, it is important for retailers and consumers' behavior researcher to identify Malaysian students' population attitude and intention towards online shopping due to student's remarkable role in online marketing in Malaysia (Sabri et al. 2008). This fact shows that, selecting students as our sample was appropriate. In this study, the method that was more related to the research was using the table to determine the sample size from a given population. Due to the reason that, author knows the overall population, the sample size was determined based on Krejcie and Morgan (1970) method which is using the table. The population size in this thesis was the total post graduate students of UTM which is 12,883. According to the table proposed by Krejcie and Morgan (1970), if the population is around 12,883, the sample size should be 375 respondents. After determining the sample size of this study, next step was to choose specifically which faculty from the 12 Faculties in UTM was going to be chosen. For this purpose,

simple random sampling was used. Three numbers (2, 3, and 5) were selected randomly using simple random sampling table. These numbers represented Faculty of Built Environment, Faculty of Civil Engineering and faculty of management. Therefore the questionnaire were distributed into three equal parts among post graduate students in these three faculties and the final 375 respondents participated in answering the questionnaire. Average 125 questionnaires distributed among post graduate students of Faculty of Built Environment, Faculty of Civil Engineering and Faculty of Management and have experience of online shopping at least once at the time of study.

2.4   Research Tools

Developed questionnaire contained six constructs; trust, perceived ease of use, perceived usefulness, compatibility, attitude and behavioral intention. Questionnaire forms conducted and distributed to UTM post graduate students who had at least one time experience of online shopping. Questionnaire distributed by hand to respondents and this method also being applied by previous researchers because this method has lots of advantages such as; researcher can get higher number of respondent. (Hair et. al, 2003). See the appendix for the questionnaire item.
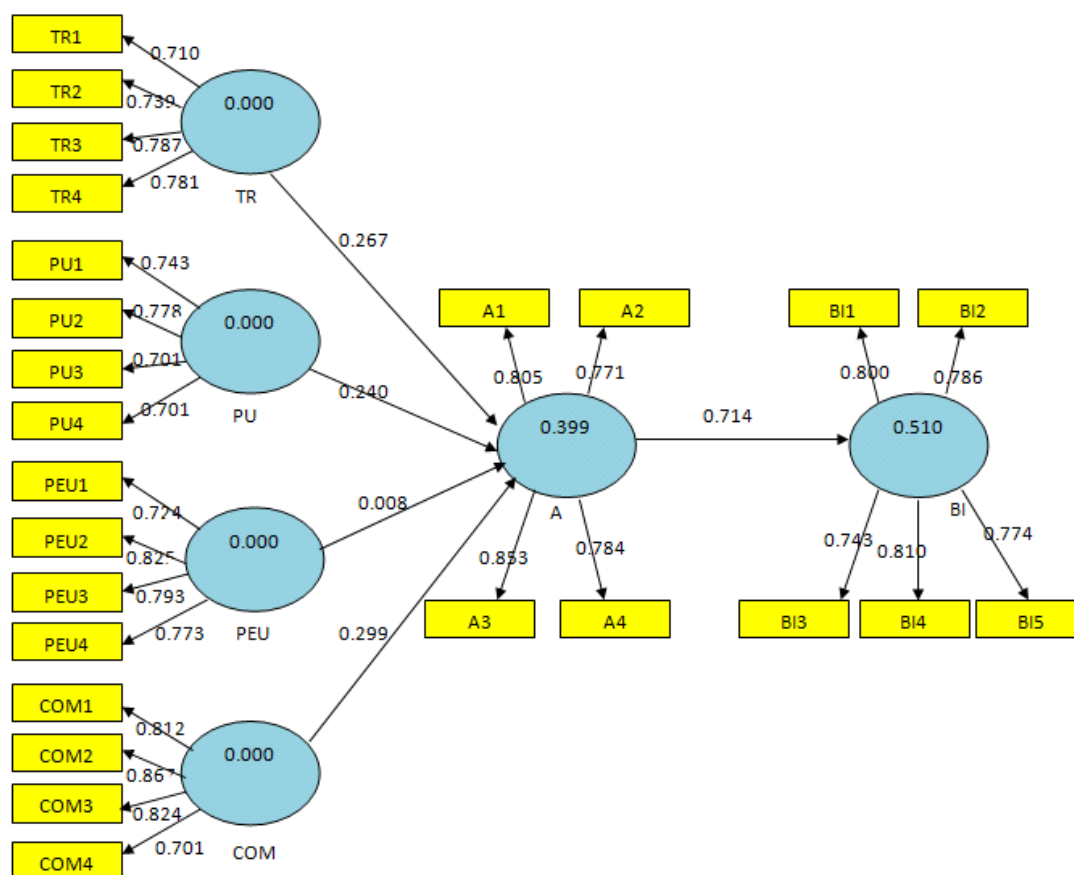
Figure 2: Outcome of the Structural Path Analysis

2.5 Model reliability assessment

To examine construct reliabilities, Cronbach's alpha coefficients were reported. Cronbach's alpha coefficients range from 0.701 to 0.866, thus suggesting acceptable constructs reliabilities by following the suggestion made by Hair et.al (2003). These were further validated using composite reliability scores with scores, ranging from 0.812 to 0.887.by following the guideline provided by Brown (2006). See the appendix for composite reliability and Cronbach's alpha values.

3.0 RESULTS

Path coefficient for the PLS structural model gives a validation of the theoretically assumed relationships between constructs (Adams et al., 2007). The individual path coefficients measure the degree of the causal relation between constructs, they can be interpreted as standardized beta coefficients of ordinary least squares regressions (Henseler et al., 2009). The outcome of the structural path analysis are provided in Figure 2, in which PLS path coefficients are shown. All path coefficients are positive, however for the

path PEU to Attitude (A); the path coefficient is positive (0.008) but the amount is very close to 0, that indicates the causal relation between these two variables is not significant.

The result of hypotheses testing was shown in the next section. In order to test the hypotheses, a structural model was built using the SmartPLS program. The path coefficients are produced using a bootstrapping procedure. The bootstrapping procedure is essentially a re-sample using the available observations as a basis. The bootstrapping results in a larger sample which is claimed to model the unknown population (Henderson, 2005). The new sample provides the data from which conclusions can be drawn.

Table 1: Hypothesis results

Hypothesis	Path Coeff.	T Statistics	result
H1: Perceived Usefulness →Attitude	0.240	2.047*	Accepted
H2: Perceived Ease of Use →Attitude	0.008	0.054	Rejected
H3: Compatibility →Attitude	0.299	2.115*	Accepted
H4: Trust →Attitude	0.267	2.432*	Accepted
H5a: Trust →Attitude → Behavioural intention	0.848	6.48*	Full mediation
H5b: Perceived Usefulness Attitude → Behavioural intention	0.642	6.44*	Full mediation
H5c: Perceived Ease of Use →Attitude→ Behavioural intention	0.633	6.099*	Partial mediation
H5d: Compatibility →Attitude → Behavioural intention	0.572	4.404*	Partial mediation

* Significant at .05 level

Bootstrap procedure was used to estimate the significance of path coefficients of hypotheses H1-H5 in the model. With regard to the evaluation of the proposed model, this study estimated path coefficients (the coefficients of the relationships between variables), would confirm the research hypotheses. The hypothesis testing is performed by following Chin (1998) who recommended that the significance of each path coefficient can be estimated by t- test using bootstrapping with 500 sub samples. The result of hypothesis testing includes standard deviation, t-value and β. The overall hypotheses testing results are presented in Table 1 and Figure 2 illustrates the conceptual model with significant paths (p < 0.05) in solid lines and non-significant paths (p > 0.05) in dashed lines.

4.0   DISCUSSION AND CONCLUSIONS

The purpose of this study was to understand the impact of factors affecting online shoppers' attitude toward online purchasing. In addition, to determine the mediating role of attitude between independent variables (trust, perceived usefulness, perceived ease of use and compatibility) and dependent variable (behavioural intention). This study tested a

model based on the theory of planned behaviour. The approach to testing the model was based on the one used by Taylor and Todd (1995b) with decomposed belief structures. Beliefs about perceived usefulness, perceived ease of use and compatibility were integrated in the model in order to explain consumers' attitude in regards to online shopping and identify key determinants of online purchasing. Moreover, the relationship between trust and attitude was also explored.

The model was tested empirically, a survey of 375 questionnaire were conducted and the results from PLS path modelling indicated that the model was able to explain 38 percent of the variance in behavioral intention and 10 percent of the variance in attitude toward online shopping. Of the 5 causal paths specified in the conceptual model, 4 were found to be statistically significant, and the relation between Perceived Ease of Use and Attitude was not significantly supported.

It was hypothesized and empirically supported that perceived usefulness and compatibility between online shopping and consumers' needs, positively and significantly impact attitude towards online purchasing, whereas, it was rejected that perceived ease of use positively impact attitude. On the other hand, the finding indicated that attitude

fully mediate the relationship between trust and behavioural intention as well as perceived usefulness and BI. In addition, attitude partially mediates the relation between perceived ease of use and BI as well as compatibility and behavioural intention. The outcomes of this research indicated that the compatibility factor strongly relates to attitude and perceived ease of use has the lowest relationship with attitude. Therefore, it is reasonable to state that consumers who perceive online shopping to be advantageous, the web retailer trust worthy and believes that shopping online is compatible with their shopping needs; express a positive attitude toward online shopping and a high willingness to shop online and consequently, their intention to shop online will be higher.

The results suggest that e-stores' websites should think of consumers who have reached to a certain level of perception of ease of use only on low evaluation level. Otherwise consumers will evaluate them as being poor. In other words, e-retailers should consider that a shopper may or may not purchase at a user-friendly website, but he or she will definitely not purchase at a user-unfriendly website. Consumers, who feel confident about their skills using the internet to shop, are more likely to make purchases online, for those less confident consumers, help

and assistance tools can be essential, in building up their skills and in increasing their willingness to purchase online.

Higher levels of trust are related to higher willingness to purchase online, continuing clear shipping and return policies, as well as a secure check out process which is fundamental. One way to make individuals trust the security of the internet and to increase the online shopping is to create a standard to show that the website that the e-retailer has conducted is trustworthy. Hence, trust need to be built as an important part of online business strategy. For example online companies'web sites with lower brand identification are suggested to plan a secure environment. They can make a logo or some sort of highly reliable symbol to conduct the transition in a safe and comfortable way.

Therefore, from the findings of the study, internet retailers can improve their services in term of having better responsiveness to their consumers. The web retailers are required to consider which of the independent factors in this study (trust, ease of use, compatibility, usefulness) impacts more on the attitude and consequently on behavioral intention of the users. This can be done by finding out from users what they perceived of doing the act of online shopping and provide the services, products, facilities

and web designs that consumers expected from them. By this approach, users will be compelled by virtue of superior service to stay than switching to another internet store.

In conclusion, these results have implication for research theories. There is little prior research that uses a decomposed Theory of Planned Behaviour in comparison to traditional well-known Theory of Reasoned Action. Our results suggested that decomposed the belief/trust structures into multi-dimensional improve our understanding of these relationship.

Appendix

Internal Consistency – Factor loading

Constructs with Underlying Questionnaire Items	Loading
Atitude	
A1 Purchasing product is good idea	0.805
A2 Purchasing product is a wise idea	0.770
A3 Purchasing product online is an idea I likes	0.853
A4 Shopping online is pleasant	0.783
CR= 0.879, α = 0.818	
Behavioural Intention	
BI1 I intend to continue purchase online in the future	0.799
BI2 I will purchase online in the near future	0.785
BI3 I intend to completely switch over to use the internet for shopping	0.742
BI4 I will strongly recommend others to use the internet for shopping	0.810
BI5 I intend to shop online more frequently	0.774
CR= 0.887, α = 0.843	
Compatibility	
COM1 Shopping online fits well with my lifestyle	0.812
COM2 Shopping online fits well with my shopping needs	0.866
COM3 Shopping online is compatible with the way I likes to shop	0.824
COM4 Shopping online gives me the flexibility in terms of time	0.701
CR= 0.873, α = 0.804	
Perceived Usefulness	
PEU1 Shopping online makes it easier to compare products	0.723
PEU2 Shopping online provides access to useful shopping information	0.825
PEU3 Shopping online save me time	0.792
PEU4 Using the internet to shop leads to better purchase decision	0.776
CR= 0.861, α = 0.786	
Perceived Ease of Use	
PU1 Shopping online to me is clear and easy to understand	0.743
PU2 I find shopping online easy to do	0.777
PU3 It would be easy for me to become skilled at shopping online	0.701

PU4 It takes a short time to learn the method to shop online   0.701
CR= 0.817, α = 0.704

Trust
TR1 I select online store which I believe are honest   0.703
TR2 Overall, online stores are trustworthy   0.738
TR3 Internet vendors are honest with their customers   0.786
TR4 Internet vendors are competent at providing quality products and services   0.780

CR= 0.812, α = 0.701
Note: CR – composite reliability, α – Cronbach's alpha

5.0   REFERENCES

Adams, C.A; Larrinaga-González, C. 2007. Engaging with organisations in pursuit of improved sustainability accounting and performance. *Accounting, Auditing & Accountability Journal,* 20: 333 – 355.

Albarq, A.N. 2006. Intention to shop online among university students in Jordan. unpublished thesis, Universiti Utara Malaysia.

Anaza, N.A. 2014. Personality antecedents of customer citizenship behaviours in online shopping situation. *Psychology & Marketing*, 31: 251-263.

Broekhuizen, T. and Huizingh, E. 2009. Online purchase determinants: Is their effect moderated by direct experience?. *Management Research News*, 32: 440-457.

Brown, T.A. 2006.Confirmatory factor analysis for applied research. Guiford Press, New York and London.

Chen, C. 1999. Information Visualisation and Virtual Environment, Springer-Verlag, London.

Chin, W.W. 1998. Issues and Opinion on Structural Equation Modelling. *MIS Quarterly*, 22: vii-xvi.

Choi, J. and Geistfeld, L.V. 2004. A cross-cultural investigation of customer e-shopping adoption, *Journal of Economic Psychology*, 25: 821-836.

Cvienticanin, S.; Pecanac, R.; Sakac, M. and Djurendic-Brenesel, M. 2013. Computer Application in the initial education of Children in Natural Sciences. *Croation Journal of Education*, 15:87-108.

Goldsmith, P.B. 2002. On the equivalence of causal LTI iterative learning control and feedback control. *Automatica*, 38:703-708.

Euromonitor International 2012. Internet users in the world. Last accessed January 2014. Available from: http://www.euromonitor.com/malaysia/internetvsstore/report.

Hair Jr, J.F.; Bush, R.P. and Ortinau, D.J. 2003. Marketing Research: within a changing information environment, McGraw Hill, New York.

Henderson, A.R. 2005. The bootstrap: A technique for data-driven statistics. Using computer-intensive analyses to explore experimental data. *Clinica Chimica Acta*, 359:1-26.

Henseler, J., Ringle, C. M., & Sinkovics, R. R. 2009. The use of partial least squares path modelling in international marketing, *Advances in international marketing*, 20:277-319.

Kiang,M.Y; Ye, Q.; Hoa, Y.; Chen, M. & Li, Y. 2011. A service-oriented analysis of on-line product classification methods, *Decision support Systems*, 52:28-39.

Krejcie, R. V., & Morgan, D. W. 1970: Determining sample size for research activities. *Educational and psychological measurement*, *30*:607-610.

Ross, C, Orr, E.S., Sisic, M., Arseneault, J.M., Simmering, M.G., & Orr, R.R 2009. Personality and Motivation associated with Facebook use. *Computer in Human Behavior*, 25: 578-586.

Sabri, M. F., MacDonald, M., Masud, J., Paim, L., Hira, T. K., & Othman, M. A. 2008.

Financial behavior and problems among college students in Malaysia: Research and education implication. *Consumer Interests Annual*, 54:166-170.

Spender, J.C. 2013. Step toward a theory of the managed firm. *Universia Business Review*, 40: 52-67.

Taylor, S., and Todd, P.A 1995a. Decomposition and crossover effects in the theory of planned behaviour: a study of consumer adoption intentions. *International Journal of Research in Marketing*, 12:137-155.

Taylor, S., and Todd, P. A. 1995b. Understanding information technology usage: A test of competing models. *Information systems research*, 6:144-176.

Wysocki, B. 2000. Need for profits pares the dot-coms' option. *Wall Street Journal*, May 1, A1.

Zendehdel, M., & Paim, L. H. 2013.Predicting Consumer Attitude to Use On-line Shopping: Context of Malaysia. *Life Science Journal*, 10:497-501.