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Structural Equation Model to measure Attitude toward E-commerce

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ABSTRACT

The objective of this study is to examine the factors that impact on the attitudes of postgraduate students towards online shopping, the questionnaire of Delafröz, Paim and Khatibi (2009, $\alpha = 0.70$) was applied to 107 postgraduate students from the Autonomous University of San Luis Potosí. Structural equation technique was used and the results indicate that the perceived beneficial contribute significantly in the attitude towards shopping online ($\beta=.37$, $t=1.945$), however, purchasing orientation ($\beta =.57$; $t=2.628$) is significant. The results show evidence for the companies -that use the web as a place to offer their products- to consider this market sector (undergraduate students).

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INTRODUCTION

Online purchasing is an activity that has grown around the world, especially in companies that have marketing activities such as internet infrastructure and take into account also that people today can not only access the Web through a PC but through other technological devices. These technological changes have enabled a new way of life and thus a change in the consumer, because now people can more easily get to buy a product in less time and at less cost.

In Mexico, according to the latest information from the Mexican Internet Association (AMIPCI) for the 2012, online trade grew by 46% over the previous year, with sales of 79,600 million pesos, they also point that 47% of Internet users have shopped through a mobile device and 46% of Internet users have purchased a product and / or service online in domestic and foreign sites.

The purchase of goods and services online has become a choice for the consumer that becomes more comfortable than the traditional purchase (Mohd Suki, and Ramayah, 2008), for this reason, the objective of this study is to examine the factors that impact on the attitude of graduate students toward online shopping. To achieve the objective, the study will seek to answer the following questions:

- Does the orientation towards the purchase impacts the attitude toward graduate students buying online?
- Are the Benefits of Online Shopping impact on the attitudes of graduate students towards buying online?
- Are the Benefits of online shopping make an impact in the orientation towards online purchase of graduate students?

This research provides guidelines for online companies to generate profit-oriented strategies of users to improve or increase consumer loyalty online.

Literature Review:

E-commerce has been defined by different authors (Rosen, 2000, Anda 2003, Turbante et al., 2008, quoted by Shu-Hung Hsu and Bayarsaikhan, 2012), as the use of electronic means to perform operations within the economic entity such as the purchase, sale or exchange of products and services to create value in the company.

Many traders are using this media, and make great efforts to reach the consumer because this plays a vital role in the economy, their consumption decisions affect the demand for products and the success or failure of business, therefore, knowing the consumer buying behavior is an important factor for every business, they must plan and direct its goals and activities to consumers.

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In this sense it is important to define consumer behavior, about Loudon and Della-Bitta (1995) indicates that is the decision process and physical activity individuals make when they evaluate, acquire, use or consume goods and services. In the words of Shiffman and Kanuc (1991) is the procedure that shows consumers find, buy, use, evaluate and dispose of products, services and ideas waiting to meet their needs.

The motivations that direct the consumer purchase are functional or non-functional utilitarian or hedonic. The utilitarian motivations refer to efficiency in purchasing; consumers value a set of elements such as time saving speed, efficiency and minimal effort (Bloch, Sherrell and Ridgway, 1986 cited by Mafé and Blas, 2006). In this regard, Assael (2004) notes that users search for practical benefits on the goods and services they buy.

Hedonic orientation, on the other hand, is more personal and is oriented more to the fun and satisfaction of the consumer in search of practicality of the product (Eliashberg and Shugan, 1997, cited by Assel, 2004). Thus, consumers with hedonic orientation, to buy a product online transform this activity into an exploration of feelings looking to fill a need for social interaction (Crandall, 1979).

Referring to the perceived benefits Shwu-Ing, (2003) notes that in the context of online shopping, benefits refer to the benefits this type of purchase and meets consumer needs and mentions that there are two types: extrinsic and intrinsic

Extrinsic benefits include features such as a wide selection of products, competitive prices, easy access to information, lower search costs and benefits relate to intrinsic design and color (Shang et al., 2005), other benefits considered consumers are comfort, freedom of choice, information, page layout, they all have a positive relationship with attitude toward online purchase (Shwu-Ing, 2003).

Theoretical Foundation:

In order to understand consumer attitudes towards buying online has taken the Technology Acceptance Model (TAM) by Davis (1989) but the model is designed to understand the adoption of information technologies in the workplace is suitable theoretical basis for the adoption of electronic commerce (Lederer et al, 2000; Chen and Chang, 2003).

In the TAM model, intended to use the new technology is determined by the attitude that the individual takes to use you can make of it, based on the See by, identifies two factors: the usefulness and ease of use, the first refers to the degree to which an individual believes that using the new technology will improve your performance or performance and the second refers to the person thinks that the use of technology does not require any effort to do the job.

Recently, it has added to the model other construct that measures the degree to which they perceived the management of new technology: funny, frustrating, boring (Davis, 1993). Thus, in the structure of TAM, the two aspects are considered as determinants of consumer attitudes towards the use of a new technology: utilitarian and hedonic.

To understand the determining factors of consumer behavior, it is argued that this approach has a strong, positive direct consumer intention to use the new technology (Davis, 1993; Bobbitt and Dabholkar, 2001).

The theory of reasoned action of Fishbein and Ajzen (1975) is a theory of human behavior that relates the beliefs, attitudes, intentions and behavior, which are related to decision-making at the behavioral level as well, the theory states that such beliefs as perceived benefits influence the attitude.

Research Model:

In this study, the research model (Figure 1) used to examine the factors affecting the attitude towards online shopping, contains constructs that have been confirmed by other authors (Davis, 1993; Bobbitt and Dabholkar, 2001; Delafrooz, Paim and Khatibi (2009) which studied consumer perspective towards online shopping.

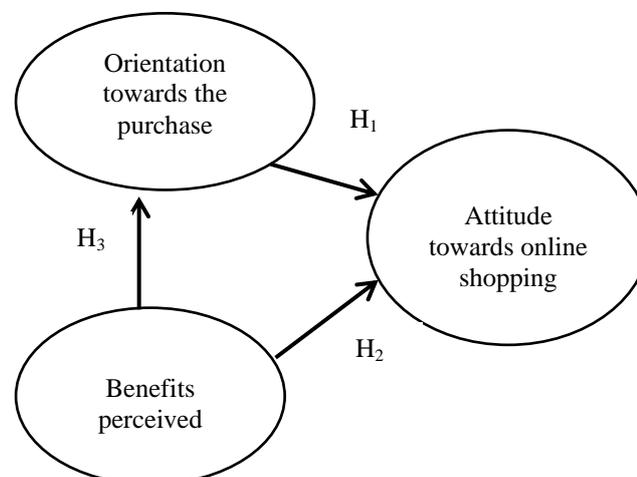


Fig. 1: Model of attitude towards online shopping

The model is simple and holds that the orientation and the perceived benefits have an impact on attitude towards online shopping. The model includes three hypotheses concerning fundamental the constructs are shown in Table 1.

Table 1: Research Hypothesis

| | |
|----------------------|---|
| H₁ | The orientation towards the purchase impacts the attitude towards online shopping |
| H₂ | Benefits of online shopping impacts the attitude towards online shopping |
| H₃ | Benefits of online shopping can impact the purchase Orientation |

Source: own

In order to test the hypotheses is used structural equation modeling technique, which allows to evaluate not only the causality between a set of independent and dependent constructs (structural model) also evaluates the weight of each factor variables (measurement model).

Methodology:

After completing the review of the literature, the quiz was chosen Delafrooz, Paim and Khatibi (2009), the reliability of the instrument was tested using Cronbach's alpha coefficient having obtained a value of 0.70 which according to Nunnaly (1994) is an acceptable reliability coefficient. The questionnaire includes three sections: guidance hedonic and utilitarian orientation perceived benefits. Each construct was used in the Likert scale of five levels which ranges from strongly disagree to strongly agree.

The sampling was not probabilistic as individuals themselves were selected from a population, in this case student's graduate of the Autonomous University of San Luis Potosi. After completing the review of the literature, the quiz was chosen Delafrooz, Paim and Khatibi (2009), the reliability of the instrument was tested using Cronbach's alpha coefficient having obtained a value of 0.70 which according to Nunnaly (1994) is an acceptable reliability coefficient. The questionnaire includes three sections: guidance hedonic and utilitarian orientation perceived benefits.

Each construct was used in the Likert scale of five levels which ranges from strongly disagree to strongly agree. The sampling was not probabilistic as individuals themselves were selected from a population, in this case student's graduate of the Autonomous University of San Luis Potosi.

The sample consisted of 107 students of Graduate Schools of Chemical Sciences, Dentistry, Commerce and Management: 55 are men and 52 are women. Tables 2 through 4 show the items with weight factor and reliability that make up each construct.

Table 2: Factor Analysis and Reliability of orientation construct

| Construct | Item | Factorial Weights | | |
|-------------------------|------|-------------------|------|------|
| fun | O34 | .861 | | |
| | O35 | .831 | | |
| | O36 | .788 | | |
| | O37 | .756 | | |
| convenient | O21 | | .615 | |
| | O22 | | .783 | |
| | O23 | | .556 | |
| | O24 | | .736 | |
| emotion | O32 | | | .821 |
| | O33 | | | .779 |
| Cronbach's alpha = .857 | | | | |
| Source: own | | | | |

This section is also displayed in Table 3 items with their weight factor and reliability that make up the construct called benefits of buying online. The construct is composed of a set of variables that comprise the following components: convenience, price, wide selection, fun, service and policies

Table 3: Factorial analysis and reliability of benefits

| convenience | Factorial Weights | fun | Factorial Weights |
|----------------|-------------------|----------|-------------------|
| B2 | .698 | B18 | .825 |
| B3 | .641 | B19 | .542 |
| B4 | .784 | B22 | .527 |
| B7 | .611 | B23 | .765 |
| price | Factorial Weights | service | Factorial Weights |
| B6 | .860 | B1 | .790 |
| B10 | .839 | B16 | .770 |
| B20 | .527 | B17 | .750 |
| B21 | .579 | | |
| wide selection | Factorial Weights | policies | Factorial Weights |

| | | | |
|------------------------|------|-----|------|
| B8 | .694 | B12 | .838 |
| B9 | .786 | B13 | .612 |
| B11 | .673 | | |
| Cronbach's alpha =0.80 | | | |
| Source: own | | | |

Likewise Table 4 shows the items, weight factor and reliability that make up the construct called attitude toward online shopping. It is noted in the tables that each of the constructs: the buying guidance, benefits and attitude towards purchase presented good reliability since each has a value greater than or equal to 0.80.

Table 4: Factorial Analysis and reliability online shopping construct

| Construct | Item | Factors | | |
|------------------------|------|---------|--------|--------|
| | | Weight | Weight | Weight |
| Fun | O34 | .872 | | |
| | O35 | .844 | | |
| | O36 | .799 | | |
| | O37 | .824 | | |
| Benefits | B6 | | .784 | |
| | B10 | | .865 | |
| | B20 | | .638 | |
| | B21 | | .729 | |
| Interesting | O22 | | | .751 |
| | O23 | | | .715 |
| | O24 | | | .725 |
| Cronbach's alpha =0.80 | | | | |
| Source: own | | | | |

Outcomes:

First shows the correlation of data and finds that all of the variables tend to one (Table 5).

Table 5: Correlation of variables

| | A | B | E | a | D | Ú | E |
|---|------|------|------|------|------|------|---|
| A | 1 | | | | | | |
| B | 0.12 | 1 | | | | | |
| E | 0.31 | 0.16 | 1 | | | | |
| a | 0.34 | 0.25 | 0.29 | 1 | | | |
| D | 0.6 | 0.2 | 0.21 | 0.7 | 1 | | |
| U | 0.37 | 0.31 | 0.26 | 0.55 | 0.48 | 1 | |
| E | 0.53 | 0.01 | 0.33 | 0.26 | 0.43 | 0.28 | 1 |

A= pleasant-(agradable), B=benefits-(beneficios), E= Interesting-(Interesante), a=helpful- (ayuda), D= fun-(divertida); U=useful-(útil), E= emotion- (emoción)

Source: own

The figure 2 and Table 6 show themselves the results to enable verification that the orientation towards the purchase (H1) a significant impact on attitude towards online shopping (.57).

However, the benefits of the purchase will not impact the attitude toward online shopping (0.37) but if purchasing orientation (.46).

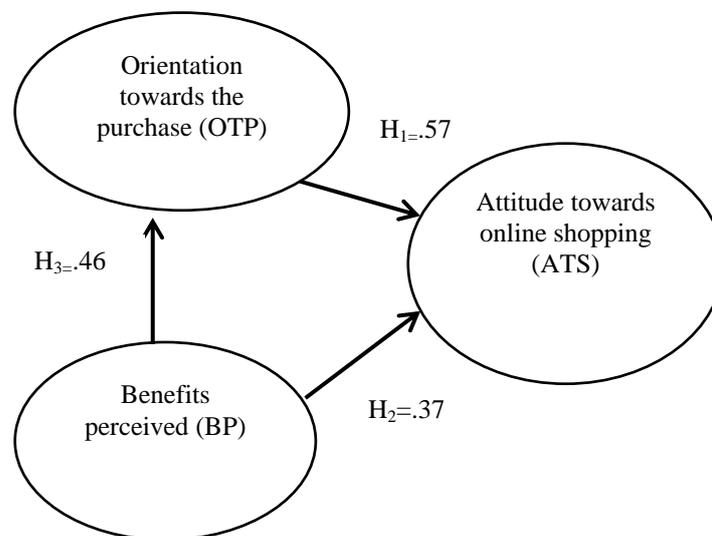


Fig. 2: Model of attitude towards online shopping

Table 6: Indexes, Coefficient (t-value)

| | | |
|--|-----------------------|------|
| $X^2 = 10.135$ df = 8=1.267; $p = 0.256$ | | |
| AGF = .903 | | |
| RMSA= .05 | | |
| Link | Coefficient (t-value) | SMC |
| OTP → ATS | .57 (2.628) | .209 |
| BP → ATS | .37 (1.945) | .209 |
| BP → OTP | .46 (2.990) | .655 |

Source: own

We proceeded to quantify overall significance of the model through the indexes. In this case, both the relationship of X^2 for degrees of freedom (10,135 / 8 = 1,267) and the goodness of fit (AGFI) index (0.903) indicate that the model is a quite acceptable.

Before evaluating those measurement or structural models, the researcher should analyze the overall fit of the model for verify that this is an appropriate representation of the whole set of causal relationships. Are utilized each of three types of measures of goodness of fit. The three basic measures of absolute fit are: the likelihood ratio of X^2 squared ($p = .256$), the goodness of fit index (.903) and the Root Mean Square Error of Approximation (RMSEA) (0.50) which indicate that the model is correct.

Upon acceptance the model as a whole, was evaluated each of the constructs (measuring model) to check the internal consistency of all indicators to measure the concept. The findings of Table 7 indicates that the values associated with the reliability of the constructs range from 0.550 onwards, the recommended value for the average variance extracted is also larger than 0.5

Table 7: Reliability and Variance of each construct

| | Reliability | Average extracted variance |
|------------|-------------|----------------------------|
| Usefulness | 0.55 | 0.699 |
| Hedonics | 0.70 | 0.646 |
| Benefits | 0.72 | 0.637 |

Source: own

Regarding the discriminant validity, values from the table 8 show that all are less than 1, this means that none of the items which were part of the various factors that appear in other constructs.

Table 8: Correlation among constructs

| | Usefulness | Hedonic | Benefits |
|------------|------------|---------|----------|
| Usefulness | 0.690 | | |
| Hedonic | | 0.726 | |
| Benefits | | | 0.700 |

Source: own

After evaluating the joint model and the aspects of the measurement model, the estimated coefficients are examined. Is observed in the Table 6 that two of them are meaningful: OTP → ATS (.57) and BP → OTP (.46), and one not (BP → ATS (.37).

Conclusion:

This paper emphasizes the understanding of the consumer attitudes towards online shopping; the results suggest that perceived benefits do not define the attitude of the users who use this type of purchase. However, the orientation towards the purchase was significant in attitude, these findings differed with those achieved by the authors (Mohd Suki and Ramayah, 2008; Delafrooz, Paim and Khatibi, 2009), since they show evidence that suggests that the benefits perceived by the user, are a significant factor on this model of purchase.

Moreover, research shows evidence that suggests that the benefits have an impact on the orientation towards the purchase (hedonic or utilitarian), in this regard, it should be emphasized that postgraduate students when shopping through the web, they do focused on the created need to find a particular product and therefore are seeking information to make purchases.

The practical implications are: The results showed evidence that allows us to assume that companies who use the web as a place where offer their products, they should keep in mind that this market segment (postgraduate students), their behavior is oriented to meet needs hedonics and utilitarian rather than finding a benefits for that reason the online stores must focus their strategies in this regard.

Finally, we note that the theoretical implications are: The model fit allows say that the model proposed by Davis (1992) and Fishbein, and Ajzen, (1975). is acceptable to predict the reality of consumer attitudes towards online shopping of this segment from the market and at the same time gives light to establish new questions to promote the search for new knowledge.

REFERENCES

- AMIPCI., 2012. Asociación Mexicana de Internet. Retrieved from: www.amipci.org.mx [June 25, 2013].
- Assael, H., 2004. Comportamiento del consumidor. México. Editorial Thomson.
- Bobbitt, M.y., P. Dabholkar, 2001. Integrating attitudinal theories to understand and predict use of technology-based self-service: The Internet as an illustration. *International Journal of Service Industry Management*, 12(5): 423-450.
- Chen, S.J. and T.Z. Chang, 2003. A descriptive model of online shopping process: Soe empirical results. *Int. J. service Industry Manag*, 14(5): 556-569.
- Crandall, R., 1979. Social interaction affect and leisure. *Journal of Leisure Research*, 11(3): 165-181.
- Davis, F. (1993). User acceptance of information technology: system characteristics, user perceptions and behavioral impacts. *International Journal of Man-Machine Studies*, 38(3): 475-487.
- Davis, F.D., 1989. Percived Usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quart*, 13: 319-340.
- Delafrooz, N., N.y. Paim, A. Khatibi, 2009. Developing an Instrument for Measurement of Attitude Toward Online Shopping. Retrieved from: www.eurojournals.com/ejss_7_3_16.pdf
- Fishbein, M. and I. Ajzen, 1975. *Belief, Attitude, Intention and Behavior: An Introduction to theory and Research*. Reading, Massachusetts: Addison-Wesley.
- Lederer, A., D. Maupin, M. Sena and Y. Zhuang, 2000. The technology acceptance model and the World Wide Web. *Decision Support Systems*, 29: 269-282.
- Loudon, D.L., A.J. Della-Bitta, 1995. *Comportamiento del consumidor. Conceptos y aplicaciones*. México. McGrawHill.
- Mafé, R.y., S. Blas, 2006. Perfil Comportamiento y satisfacción en internet como variables de segmentación de los compradores virtuales. Retrieved from: <http://www.consumo-inc.es>.
- Mohd Suki, N. and T.N. Ramayah, 2008. Internet shopping acceptance examining the influence of intrinsic versus extrinsic motivations. *Direct Marketing: An International Journal*, 2(2): 97-110.
- Nunnally, J., 1994. *Psychometric theory*. New York. McGraw- Hill.
- Shang, R.A., Y.C. Chen, & L. Shen, 2005. Extrinsic versus intrinsic motivation for consumer to shop on predicting user acceptance of e-shopping on the web. *Inf Manag*, 41: 351-368.
- Shiffman, G. & L. Kanuc, 1991. *Comportamiento de consumidor*. México. Pretice Hall.
- Shu-Hung Hsu, S.H., B.E. Bayarsaikhan, 2012. Factors Influencing on Online Shopping Attitude and Intention of Mongolian Consumers. *The Journal of International Management Studies*, 7(2): 167-176.
- Shwu-Ing, W., 2003. The relationship between consumer characteristics and attitude toward online shopping. *Manag. Intelligence Planing*, 21(1): 37-44.