



Journal of Internet Banking and Commerce

An open access Internet journal (<http://www.arraydev.com/commerce/jibc/>)

Journal of Internet Banking and Commerce, April 2012, vol. 17, no. 1
(<http://www.arraydev.com/commerce/jibc/>)

PROFILE OF THE ELECTRONIC COMMERCE CONSUMER: A STUDY WITH BRAZILIAN UNIVERSITY STUDENTS

Dario de Oliveira Lima-Filho

Professor of the Graduate Program in Business Administration at the Federal University of Mato Grosso do Sul, Brazil

Postal Address: Av. Filinto Muller, 1555, CEP 79074-460 Campo Grande - MS, Brazil

Email: dariolimafilho@gmail.com

Associate Professor at the Federal University of Mato Grosso do Sul in undergraduate and graduate programs in Business Administration and operational coordinator of the Interinstitutional Doctorate program (DINTER) in Business Administration UNINOVE/UFMS. Has experience in the area of Business Administration, with emphasis on Marketing, working mainly on the following topics: consumer behaviour, agribusiness, strategy and marketing.

Camila de Souza Alves

Postal Address: Av. Filinto Muller, 1555, CEP 79074-460 Campo Grande - MS, Brazil

Email: camiladsa@live.com

Graduate student (Master's degree) in Business Administration at the Federal University of Mato Grosso do Sul (UFMS).

Filipe Quevedo-Silva

Postal Address: Av. Filinto Muller, 1555, CEP 79074-460 Campo Grande - MS, Brazil

Email: admquevedo@hotmail.com

Graduate student (Master's degree) in Business Administration at the Federal University of Mato Grosso do Sul (UFMS).

Luísa Brito Moreira

Postal Address: Av. Filinto Muller, 1555, CEP 79074-460 Campo Grande - MS, Brazil

Email: lu_364@hotmail.com

Undergraduate student in Business Administration at the Federal University of Mato Grosso do Sul (UFMS).

Vicente Rodrigues Garcez

Postal Address: Av. Filinto Muller, 1555, CEP 79074-460 Campo Grande - MS, Brazil

Email: vrg222@hotmail.com

Undergraduate student in Business Administration at the Federal University of Mato Grosso do Sul (UFMS).

Willian Ferreira Aratani

Postal Address: Av. Filinto Muller, 1555, CEP 79074-460 Campo Grande - MS, Brazil

Email: willian_aratani@hotmail.com

Undergraduate student in Business Administration at the Federal University of Mato Grosso do Sul (UFMS).

Abstract

This work aimed to analyze the profile of electronic commerce costumers, as well as identify characteristics that differentiate costumers from non-costumers of electronic commerce. For this purpose, a quantitative-descriptive study was carried out with university students of a federal public university of the south-western region of Brazil, during the first half of 2011, using a structured questionnaire. Data were analyzed through descriptive statistics, logistic regression and cluster analysis. The results showed that more than 75% of the students had already made purchases over the Internet and that security and price were major factors in their decision. Men were the primary users of electronic commerce and this type of consumption was positively related to income and the use of credit cards. In addition, consumption preferences able to differentiate consumers of electronic commerce from non-consumers were: quick and practical shopping, risk perception and indifference towards testing the products before making purchases. The results also indicated that there were four different segments in habits, preferences and socio-demographic characteristics: "controlled", "young consumers", "basic consumer" and "conventional buyers".

Keywords: Information and communication technologies; Market segmentation; Online consumer behaviour; Internet.

© Dario Lima-Filho, et al., 2012

INTRODUCTION

Organizations and society have been modified on the basis of the emergence of new information and communication technologies (ICT). The Internet falls within the concept of revolutionary technology, allowing communication almost without frontiers, beyond the possibility of a broad search for information. Among the new possibilities brought about through websites, electronic commerce, or e-commerce stands out. It refers to the marketing relationship over the Internet.

E-commerce can be characterized by the use of an online means to sell, buy and exchange goods or services. It consists of a system that facilitates and enables the realization of transactions between consumers and businesses (Kotler & Keller, 2006; Franco Junior, 2005; Turban & King, 2004).

E-commerce was made possible with the emergence and mainly with the popularization of the Internet, which initially had only use for financial, academic and governmental institutions. From 1990, according to Limeira (2005), a facilitating factor in the use of the Internet for commercial purposes occurred due to the emergence of providers, equipment and connections that made access to this technology easier.

Trade carried out with the use of the Internet involves more than buying and selling. Hooley, Saunders and Piercy (2005) suggest that the e-commerce encompasses facilitating tools for buying and steps present in pre and post-sales processes. For the proper functioning of this type of transaction, companies need to be attentive to the needs of consumers, with the goal of making disclosures effectively and deliver products correctly within the deadline stipulated, among other activities that permeate the relationship between consumer and company for this type of purchasing process.

The popularization of e-commerce and innovations generated by information and communication technologies cause impacts on behaviours, habits and expectations of consumers about the products and services that they will demand. These tools allow situations like making purchases at any time, and ease of purchase in stores geographically distant. With the use of the advantages generated by this mode of trade, companies can stand out from their competitors and meet satisfactorily consumers needs, who are increasingly informed and demanding with regard to their desires (Botelho, Gomes, & Silva, 2011; Martins, Stolt, & Freire, 2010).

Several authors (Nascimento, 2011; Farias, Kovacs, & Silva, 2008; Limeira, 2005) show the difference between e-commerce and conventional trade, caused by different characteristics between the physical world and the virtual world. Among the differences, it can be mentioned: rapid interactivity between company and customer; need for trust between the parties to solve difficulties –as the impossibility of testing the product–; the possibility of shopping in other regions or even other countries; concern about the design of the website, which becomes a sort of company's online environment.

The profile of buyers is no longer the same and the Internet provides them with greater agility in shopping, comfort and access to various products and shops, price comparison and other advantages. Blackwell, Engel and Miniard (2005) affirm that consumption growth through e-commerce can bring changes comparable to those caused by the

industrial revolution, as, for example, transformations in the consumer lifestyle and greater ease of access to consumption. Therefore, marketing professionals must be aware of the factors that hinder making purchases by traditional method and/or make purchases performed over the Internet more attractive.

A research carried out by TIC Domicílios e Empresas (2011) (*Brazilian center of studies on information and communication technologies*) points out that 41% of Brazilians use the Internet, number higher than 36% recorded in 2009. It is also observed that users with basic education rose from 36% in 2009 to 43% in 2010. The results show that in 2010 only 7% of the population with basic education used financial services (banking) on the Internet, while among those with higher education this number rose to 31%.

According to the WebShoppers (E-BIT, 2011) half-yearly report, only during the first half of 2011, 4.8 billion Canadian dollars were invoiced in online sales of consumer goods in Brazil, revealing an increase of 24% compared to the revenue reached in the same period of the previous year. Also according to the report, of the total volume of orders placed, 13% was related to households, 12% to computer products and 11% to health, beauty and medicines. This seems to show that e-commerce is going through a period of maturation and has greater acceptance among people who buy different types of products.

However, it should be noted that not all people are willing to purchase goods or services online, either because they do not believe in the advantages of this type of transaction or because they distrust its security. According to Bessa, Nery and Terzi (2003), making purchases over the Internet requires greater consumer confidence in the company from which they are buying. Therefore, it becomes increasingly important to identify consumers willing to make their purchases over websites as well as their wishes and needs.

E-commerce still needs to overcome many obstacles in order to consolidate as a purchasing alternative for all groups of people. In Brazil, "FRadar" research carried out by FNazca (2010) with 2.247 people in 143 municipalities, shows that 33% of those people did not make their purchases over the Internet for fear that their orders could not be delivered or that the deadline would not be met, 28% did not make purchases because they did not have contact with the product, and 23% for fear that their data could be used for malicious purposes by others.

The company, before adopting this method of marketing, has to assess the strengths and weaknesses which deserve greater attention, in order to adapt its operation and marketing strategies, because it is relatively new technology, even though on the rise. Ten years ago, Porter (2001) stated that successful companies should use the Internet together with the traditional way of competition, as this technology was important for setting organizational strategies.

With the advancement of information and communication technologies (ICT) and the development of tools that improves activities such as e-commerce, Kotler and Keller (2006) suggest that companies should worry about better understanding consumers, as they currently obtain information with ease and thus become more demanding.

Studies on consumer behaviour should be carried out frequently, because consumers change their perceptions, needs and wishes in relation to the environment. In fact, Nascimento (2011) states that topics related to the Internet tend to become obsolete in the light of rapid technological change. The literature offers several studies about the behaviour of e-commerce customers, as the example of researches conducted by Martins et al. (2010) and Costa (2009) in Brazil, Eid (2011) in Saudi Arabia, and Sin and Purnamasari (2011) in China.

This study aims to analyze the profile of e-commerce customers. Specifically, it intends to: a) Check which socio-demographic variables influence the purchasing behaviour of costumers and non-customers; b) Identify the differences in the behaviour of the customers and non-customers; and c) Identify segments of current and potential customers.

METHODOLOGY

A quantitative-descriptive study was carried out, using a structured questionnaire, as suggested by Malhotra (2009). The sampling technique adopted was non-probabilistic for convenience. The study was conducted with 117 students of a federal public university in the south-western region of Brazil. It was performed during class hours and with the permission of teachers, in the first half of 2011. The research included customers and non-customers of e-commerce.

The questionnaire was divided into two parts. The first included 14 statements about the consumption profile (Chart 1) with the goal of not only characterize the respondents, but to identify differences in preferences of consumers and non-consumers of e-commerce. This group of variables was measured by adopting Likert's scale of 5 points, ranging from 1 (strongly disagree) to 5 (strongly agree). The second part of the questionnaire consisted of a group of socio-demographic variables.

From 117 questionnaires applied, 17 contained several unanswered questions and, therefore, had to be excluded from the final sample. Thus, 100 questionnaires were considered valid, including students of undergraduate courses in Business Administration (14,53%), Economics (35.04%), Pharmacy (19.66%), Pedagogy (19,66%) and Chemistry (11,11%).

The analysis of the data was divided into two stages and carried out with the aid of Minitab software (Minitab, 2010). The first aimed to identify the socio-demographic and consumption preferences characteristics, which differentiate consumers and non-consumers of e-commerce. In this way, in order to analyze the influence of socio-demographic characteristics in this type of consumption, bivariate analyses were carried out with descriptive statistics and cross-sectional analysis using Chi-square test with a significance level of 0,05.

Still, in the first step, in order to verify the most characteristic consumption behaviour of consumers of e-commerce, a binary logistic regression was held using the 14 statements contained in Chart 1 as explanatory variables. This multivariate technique is used to analyze the behaviour between a categorical dependent variable –in this case, whether purchases are made over the Internet or not– and independent metric variables

(Chart 1), so that, subsequently, predict the probability of a respondent belong to a particular group, as suggested by Fávero, Belfiore, Silva and Chan (2009). More than being a method of prediction, this tool allows identifying which factors and to what extent they influence the variable explained.

In the second step of the analysis, the aim was to identify actual and potential consumer segments. For this purpose, an agglomerative hierarchical clustering analysis (Hair, Black, Babin, Anderson, & Tatham, 2009) was carried out by using the 14 variables related to consumption preferences (Chart 1). This method of analysis aims to form segments which have internal homogeneity (among the members of the segment) and external heterogeneity (among segments). It starts with a segment for each respondent –in this case 100 segments– and then, seeking to minimize the internal variation of the groups formed, it groups the closest in order to form a single segment (Hair et al., 2009).

Chart 1: Variables used in the empirical study.

Code	Variable
Q1	I make purchases quickly and practically.
Q2	I like shopping without leaving home.
Q3	Innovative things attract me.
Q4	I like to take risks.
Q5	I look forward to having security when making purchases.
Q6	I usually buy on impulses.
Q7	I always buy according to what I planned.
Q8	The advantage of making purchases over the Internet is that I do not have to deal with a salesperson.
Q9	I prefer to have someone helping me when shopping.
Q10	I like to see or test what I intend to purchase.
Q11	I have little time to make purchases.
Q12	Making purchases is a pleasure for me.
Q13	I always look for goods or services on sale.
Q14	Quality is more important than price to me.

To select the optimum amount of segments, the percentage change in the agglomerative coefficients was observed, which indicate precisely the heterogeneity within the segments, along with the performing of a graphical analysis of the results (Hair et al., 2009). After selecting the amount of segments, their identification was performed by analyzing their consumption behaviours and their crossing with socio-demographic variables contained in the questionnaire.

RESULTS AND DISCUSSION

Sample profile

Table 1 presents the socio-demographic data of the sample studied, as well as information about purchasing behaviour. It is interesting to note that the vast majority of students had already made their purchases over the Internet (75,26%). This value is

higher than values shown in other studies (Botelho et al., 2011; Macedo, Matos, Rigoni, & Betim, 2010; Costa, 2009), also performed with undergraduate students, in which the numbers were close to 65%.

Table 1: Sample Profile

Gender		Most important Item when purchasing over the Internet		Common expenses for making purchases over the Internet	
Male	43,30%	Website appearance	2,74%	Up to C\$120,00	68,06%
Female	56,70%	Prices	31,51%	C\$120,00 to C\$240,00	23,61%
Age		Security	50,68%	C\$240,00 to C\$360,00	4,17%
Up to 24	81,44%	Ease of purchase	4,11%	Over C\$360,00	4,17%
25 to 34	12,37%	Time of delivery	2,74%	Satisfaction with making purchases over the Internet	
35 to 44	2,06%	Ways of payment	1,37%	Totally satisfied	38,36%
45 to 54	3,09%	Website transparency	6,85%	Satisfied	50,68%
Over 54	1,03%	Has already travelled abroad		Indifferent	5,48%
Income		Yes	40,21%	Unsatisfied	5,48%
Up to 1 basic minimum salary	6,25%	No	59,79%	Has already made purchases over the Internet	
2 to 3 basic minimum salaries	22,50%	Frequency of purchasing		Yes	75,26%
4 to 10 basic minimum salaries	37,50%	Up to once a month	48,45%	No	24,74%
10 a 20 basic minimum salaries	25,00%	2 to 4 times a month	30,93%	Preferred ways of payment	
Over 20 basic minimum salaries	8,75%	Over 4 times a month	20,62%	Cash	81,44%
Uses credit card				Instalments	18,56%
Yes	71,13%				
No	28,87%				

The most important factors influencing the purchasing decision of consumers are security (50,68%) and price (31,51%), what corroborate similar studies (Macedo et al., 2010; Crespo & Bosque, 2010; Zo & Ramamurthy, 2009; Renzi, Santos, & Freitas, 2008; Silveira, Muller, Silva, Freitas, & Costa, 2008), even though price has been considered the most important factor in some of them.

Characteristics of e-commerce users

To find out whether socio-demographic variables influence the consumption over the Internet and whether it would be possible, by means of these variables, identify the consumer of e-commerce, data were related to the fact that the respondents had already made their purchases over the Internet. Relations were evaluated by using the Chi-square test.

When analyzing gender, it is observed that for the group of buyers the division is nearly 50%, but in the group of non-buyers the number of women grows to nearly 80%, i.e. men use this form of consumption more than women. Similar results were found in a study with students and teachers of higher education institutions located in the metropolitan region of Belo Horizonte, state of Minas Gerais, Brazil (Costa, 2009), in which, among men, 30,8% stated they did not buy over the Internet, while among women that number rose to 36,9%.

In relation to the family income, most buyers fits in the category of 4 to 10 basic minimum salaries (38,36%), while most non-buyers received between 1 and 3 basic minimum salaries (41,67 %). This relationship between higher income and consumption over the Internet has also been identified in other similar researches (Sin and Purnamasari, 2011; Nascimento, 2011; Costa, 2009; Limeira, 2005).

Regarding purchasing by credit card, around 76% of buyers stated that they used this tool to make their purchases, while only 54,17% of non-buyers used it. This difference may be related to the fact that most purchases made over the Internet are paid by credit card, possibly by the convenience of payment and because transactions are made more quickly (Macedo et al., 2010; Azevedo & Gomes, 2008; Silveira et al., 2008).

This is also possibly due to the increasing consumer confidence with regard to the quality of the products and, above all, the security of the data. Several studies (Martins et al., 2010; Teo & Liu, 2007; Chen & Dhillon, 2003; Corbitt, Thanasankit, & Yi, 2003) show that purchases over the Internet are still regarded with a certain degree of risk and poorly reliable, especially when it is necessary to enter bank details or credit card numbers. But, according to Azevedo and Gomes (2008), this reality has been changing over the years.

To assess whether there are significant differences between the consumption preferences of buyers and non-buyers, a binary logistic regression was conducted. With this technique it was intended to find out which variables allowed differentiating e-commerce consumers from non-consumers, i.e., what characteristics are the most striking within this market segment (buyers).

Initially, the adjusted model had issues related to consumption preferences (1 to 14) as explanatory variables, but when performing the test of significance, the only variables that indicated coefficients significantly different from zero (p-value inferior or equal to 0,05) were: "I make purchases quickly and practically" (Q1), "I like to take risks" (Q4), and "I like to see or test what I intend to purchase" (Q10), i.e., according to the collected data, these three variables were the only ones able to differentiate consumers.

Table 2 presents the adjusted model. As it can see in the table, all p-values are inferior

to 0,05, i.e., there is no evidence that the estimated coefficients are equal to zero; in addition, the G test, which tests the null hypothesis that all coefficients associated with the independent variables are equal to zero, also featured a p-value inferior to 0,05, leaving no evidence that any coefficient was zero.

Table 2: Adjusted binary logistic regression model

Logistic Regression Table							
Predictor	Coef	St Dev	Z	P	Odds Ratio	95% CI	
						Lower	Upper
Constants	4,98	1,803	2,76	0,006			
Q1	0,53	0,270	1,96	0,050	1,70	1,00	2,89
Q4	-1,12	0,322	-3,46	0,001	0,33	0,17	0,62
Q10	-0,98	0,355	-2,75	0,006	0,38	0,19	0,75
Log-Likelihood = -41,96							
Test in which all slopes are zero: G = 24,62; DF = 3; P-Value = 0,000							

Odds Ratio values indicate the weight of each variable in the model, because they demonstrate how much an increase in an independent variable, holding everything plus constants, influences the probability of the event to occur. Therefore, it is concluded that the convenience factor is the most important in this case.

The positive value of the estimated coefficient for "I make purchases quickly and practically" (Q1) indicates that any increase in the score given to this item makes the respondent more prone to belong to the group of online consumers. Thus, e-commerce buyers prefer to make purchases quickly and in a practical way and believe that the Internet is a tool that enables this procedure.

The practicality and ease of purchasing over the Internet are determining factors for the use of e-commerce. Several studies (Nascimento, 2011; Crespo & Bosque, 2010; Macedo et al., 2010; Cruz, Costa, Santos, Vital, & Rosário, 2008; Silveira et al., 2008; Arroyo, Camargo Júnior, Merlo, & Scanduzzi, 2006) found that these items are important to these consumers, being among the major factors in the decision. Websites that do not offer quick and practical environments are at a disadvantage and may even repel this type of clients, such as affirmed by Caro (2005) and Liu and Wei (2003).

With the variables "I like taking risks" and "I like to see or test what I want to purchase" the inverse occurs, since their coefficients are negative. In other words, according to the assertions of the respondents, buyers would be less willing to take risks and do not make a point of testing what they are purchasing. In relation to testing the products, this relationship seems logical, because even though a few websites show several images and detailed information of the products available and they even offer the possibility of browsing a book before buying it, there is no way to test the products more effectively, especially in comparison with purchases made in a physical store.

The little willingness to take risks, according to results found in the present study, is an interesting fact, since usually these consumers are classified as less averse to risks (Crespo & Bosque, 2010; Costa, 2009). In addition, several works (Martins et al., 2010;

Cruz et al., 2008; Teo & Liu, 2007; Liu & Wei, 2003; Corbitt et al., 2003) relate purchases made over the Internet to higher risks as a function of the fact occurring at distance, fear of having data stolen, or even being the victim of fraud.

Based on the adjusted equation, a test comparing the real answers obtained in the questionnaires with the answers provided by the model was carried out. The model was right in 80,4% of times, demonstrating that if only these three variables were used, it is possible to reach a high level of precision, showing once again how relevant this model proved to be.

Customer segmentation

In order to verify the possible existence of different segments among the respondents, it was decided to perform an agglomerative hierarchical clustering analysis (Hair et al., 2009), using the 14 variables related to consumer preferences. Once the analysis was performed, the coefficients of agglomeration, which indicate the degree of homogeneity of the segments formed, along with the graphical analysis of the results, suggested that the amount of segments should be four (clusters).

When examining the possibility of segmentation among buyers of CDs over the Internet, Granuzzo (2001) also found four clusters on the interests and buying behaviour. The research conducted by Arroyo et al. (2006) with undergraduate and graduate students, with the goal of identifying e-commerce consumer preferences, identified three clusters.

After selecting the amount of segments, it is necessary to identify them. To that end, the averages of scores allocated to each segment were analyzed (Table 3). Subsequently, in the search for better understanding of each segment, they were crossed with socio-demographic variables contained in the questionnaire and the relationship of dependency was evaluated by using the Chi-square test.

Table 3: Average scores of segments (clusters)

Variables	Segment 1	Segment 2	Segment 3	Segment 4
I make purchases quickly and practically.	3,5	3,9	3,9	2,5
I like shopping without leaving home.	3,4	3,5	3,3	1,7
Innovative things attract me.	3,7	4,2	3,3	3,9
I like to take risks.	1,2	1,4	2,5	1,7
I look forward to having security when making purchases.	4,3	4,5	3,4	4,6
I usually shop on impulses.	1,7	2,9	3,1	3,4
I always buy according to what I planned.	4,0	2,8	3,0	2,9
The advantage of buying over the Internet is that I do not have to deal with a salesperson.	3,1	3,2	2,2	1,4
I prefer to have someone helping me when shopping.	2,9	2,5	2,4	3,7
I like to see or test what I intend to purchase.	3,5	4,0	3,0	4,7

I have little time to make purchases.	3,1	3,3	2,5	3,1
Shopping is a pleasure for me.	2,6	3,9	3,9	4,5
I always look for goods or services on sale.	3,6	4,1	3,8	3,8
Quality is more important than price to me.	3,8	4,0	2,5	3,9

Segment 1 (controlled) represents 27,86% of the sample and consists of 55,56% of men. Most of them were young with up to 24 years of age (74,07%). 42,11% of this cluster had family income between 4 and 10 basic minimum salaries and most of them made their purchases up to once a month (66,67%). Most individuals of this segment made purchases paying in cash (77,78%) and among the four consumer groups identified in this study, this is which less used the credit card (59%). This is the cluster that contains more individuals who had already made purchases over the Internet, reaching 92,59%.

In relation to consumer preferences, this segment was not identified with making purchases on impulse nor relates the act of making purchases as an act of pleasure. They looked forward to having security when making purchases, buying only what they were planning and they liked to use the Internet because they did not have to deal with a salesperson and because of the convenience of making purchases without leaving home. The group showed to be indifferent about having anyone aiding in the time of purchase and, following the example of clusters 2 and 4, segment 1 gave more value to quality than price. In the case of the three variables identified in the logistic regression as discriminating for online consumers, this cluster assigned scores above average to "I make purchases quickly and practically", followed by "I like to see or test what I intend to purchase" (the second lowest average) and "I like to take risks" (low score).

Segment 2 (Young consumers) corresponds to 47,42% of the sample. It is composed by 54,35% of women and is the youngest, in which 93,48% of the individuals was up to 24 years of age. 41,03% of individuals in this cluster had a family income between 4 and 10 basic minimum salaries. Most of them made purchases two to four times a month (45,65%), and this segment was the one that made most of the purchases in cash (91,39%). 71,79% used credit card and 76,09% had already made purchases over the Internet.

Regarding preferences of consumers, individuals of this segment liked making purchases without leaving home and looked forward to having security at the time of making purchases. They were attracted by novelties and felt pleasure when making purchases. The segment showed indifference about having anyone aiding at the time of making purchases and, as clusters 1 and 4, this segment also gave more value to quality than price. In the case of the three discriminating variables, this group assigned a high score to "I make purchases quickly and practically", the second higher score to "I like to see or test what I intend to purchase" and a low score to "I like to take risks".

Segment 3 (Basic consumer) includes 11,34% of the sample. It is composed of 63,64% of women and is the oldest, with 54,55% of the individuals being over 24 years of age. This group had the lowest income with 45,45% of the individuals earning up to 3 basic minimum salaries and most of them made purchases up to once a month (72,77%).

Most individuals of this segment made their purchases by paying in cash (72,77%) and 81.82% used credit card. In this cluster, 72,73% had already made purchases over the Internet.

In relation to consumer preferences, this segment saw no advantage in not having to deal with a salesperson. It was the only cluster to prefer the price at the expense of quality and showed to be indifferent to most variables. In the case of the three discriminating variables, this group gave high scores to making purchases quickly and practically and taking risks. The lowest score was given to testing before making purchases.

Segment 4 (Conventional buyers) comprises 13.40% of the sample and was composed of 84,62% of women. The majority were young women, up to 24 years of age (84,62%). This cluster was the one with the biggest incomes; 45,45% earned between 10 and 20 basic minimum salaries. The individuals of this cluster made their purchases more frequently, since the majority (61%) made their purchases more than twice a month. Most individuals of this segment made their purchases by paying in cash (61,64%). On the other hand, in relation to the other three segments, most instalment purchases were made by this segment (38,46%). Credit cards were used by 84,62% of members of this segment and this was the cluster that contained more people who had never made purchases over the Internet (61,54%). In relation to consumption preferences, this segment did not see advantages in making purchases without leaving home and either not having to deal with a salesperson. These individuals looked forward to having security when making purchases and preferred to have someone helping them at that time. They made purchases on impulse, were attracted by novelties and considered making purchases as a pleasure. As clusters 1 and 2, segment 4 gave more value to quality than price. In the case of the three discriminating variables, this group assigned low scores to making purchases quickly and practically and taking risks. They assigned the highest score to testing before making purchases.

CONCLUSION

This study aimed to analyze the profile of e-commerce users. To this end, a descriptive-quantitative study was conducted with 117 undergraduate students at the Federal University of Mato Grosso do Sul, in the city of Campo Grande, state of Mato Grosso do Sul, Brazil, during the first half of 2011, using a non-probabilistic sampling technique for convenience. Data analysis was performed by means of descriptive statistics and tests, in addition to the techniques of binary logistic regression and cluster analysis.

The results showed that more than 75% of the students had already made purchases over the Internet and that security and price were major factors in their decisions. Men used e-commerce more than women and that kind of consumption is positively related to incomes and the use of credit cards.

In addition, according to the results of logistic regression, it was found that the consumption preferences, able to differentiate consumers of e-commerce, were: making purchases quickly and practically, risk perception and indifference to testing the products before making purchases. Still, four different clusters were identified in relation to preferences and socio-demographic characteristics: controlled (27,86%), young

consumers (47,42%), basic consumer (11,34%) and conventional buyers (13,40%).

The purchase of goods and services over the Internet has unique characteristics that make it different from traditional purchasing in physical stores. Therefore, companies must consider websites as a new business or an expansion of their business today. Accordingly, this work brings important contributions to companies about real and potential e-commerce customers, enabling to know and satisfy them.

A key issue in which companies should concentrate refers to security perceived by consumers at the time of the transaction on the website. In this study and other recent specific studies on the topic (Bao, Li, Meng, Liu, & Wang, 2011; Beatty, Reay, Dick, & Miller, 2011; Eid, 2011) this fact became clear. In the words of Nascimento (2011), the acquisition of more followers to the e-commerce depends on the ease of access to websites and the elimination of "fear of the unknown".

For the academics, this research joins efforts to studies of segmentation and behaviour of e-commerce consumers in Brazil, especially in a group of high interest constituted by university students.

The subjects of the study (i.e., university students), the sample size (100 interviews) and the fact that this research was carried out in only one city (Campo Grande – MS) are not representative elements of the Brazilian population, so it is possible to recognize a limitation in this research.

Finally, as a suggestion for future work, it would be advisable to conduct studies on the expansion of e-commerce considering mobile devices for Internet access (mobile phones and tablets), the e-commerce as a competitive advantage and the impact of the new taxation on Internet sales, as well as carrying out a broader research with the application of a higher number of questionnaires to individuals who possess more discrepant socioeconomic characteristics.

REFERENCES

- Arroyo, C. S., Camargo Júnior, A. S., Merlo, E. M., & Scandiuizzi, F. (2006). Uma análise das preferências de consumidores no comércio eletrônico. *Facef Pesquisa*, 9 (1), 5-16.
- Azevedo, A. C., & Gomes, Z. L. M. (2008). Comportamento de compra de clientes no comércio eletrônico: um estudo sobre as suas percepções de compra nos ambientes comerciais online. *Cient., Ciênc. Juríd. Empres*, 9 (1), 73-81 mar.
- Bao, Y., Li, Y., Meng, X., Liu, Y., & Wang, W. (2011). An empirical study on consumer trust in B2C e-commerce in China. *Proceedings of the International Conference on Management and Service Science (MASS)*. Wuhan, China. Retrieved from http://ieeexplore.ieee.org/xpl/freeabs_all.jsp?arnumber=5998404 (Accessed on Dec 2011).
- Beatty, P., Reay, I., Dick, S., & Miller, J. (2011). Consumer trust in e-commerce web sites: A meta-study. *Journal ACM Computing Surveys (CSUR)*, 43 (3), 1-46.
- Bessa, V. C., Nery, M. B., & Terzi, D. C. (2003). Sociedade do conhecimento. *São Paulo em Perspectiva*, 17 (3-4), 3-16.
- Blackwell, R. D., Engel, J. F., & Miniard, P. W. (2005). *Comportamento do Consumidor*, Thomson Pioneira, São Paulo, SP.
- Botelho, G. K. N., Gomes, E. O., & Silva, H. M. R. (2011). E-commerce: análise do hábito de compra de jovens universitários em lojas virtuais em relação ao composto de marketing. *Proceedings of the 4th Encontro Científico de Administração, Economia e Contabilidade*. Ponta Porã, Brasil. Retrieved from <http://periodicos.uems.br/novo/index.php/ecaeco/article/viewFile/1347/743> (Accessed on Dec 2011).
- Caro, A. (2005). *Fatores críticos no comportamento do consumidor online um estudo exploratório*. M.Sc. Dissertation. Universidade de São Paulo, São Paulo, Brasil.
- Chen, S. C., & Dhillon, G. S. (2003). Interpreting dimensions of consumer trust in e-commerce. *Information Technology and Management*, 4, 303-318.
- Corbitt, B. J., Thanasankit, T., & Yi, H. (2003). Trust and e-commerce: a study of consumer perceptions. *Electronic Commerce Research and Applications*, 2, 203-215.
- Costa, F. L. (2009). *Comércio eletrônico: hábitos do consumidor na internet*. M.Sc. Dissertation. Faculdades Pedro Leopoldo, Pedro Leopoldo, Brasil.
- Crespo, A. H., & Bosque, I. R. (2010). The influence of the commercial features of the internet on the adoption of e-commerce by consumers. *Electronic Commerce Research and Applications*, 9, 562-575.
- Cruz, N. J. T., Costa, A. C. S., Santos, P. C. F., Vital, T. W., & Rosário, F. J. P. (2008) O comportamento do consumidor maceioense em relação ao comércio eletrônico. *Proceedings of the 28th Encontro Nacional de Engenharia de Produção*. Rio de Janeiro, Brasil. Retrieved from http://www.abepro.org.br/biblioteca/enegep2008_TN_STO_073_519_12110.pdf (Accessed on Dec 2011).
- E-BIT. (2011). 24^a Web shoppers. Retrieved from <http://www.webshoppers.com.br/webshoppers/Webshoppers24.pdf> (Accessed on Oct 2011).
- Eid, M. I. (2011). Determinants of e-commerce customer satisfaction, trust, and loyalty in Saudi Arabia. *Journal of Electronic Commerce Research*, 12 (1), 78-93.
- F/NAZCA. (2010). 7^a F/Radar. Retrieved from <http://www.fnazca.com.br/wp->

- content/uploads/2010/12/fradar_7a_edicao_abril2010.pdf (Accessed on Dec 2011).
- Farias, S. A., Kovacs, M. H., & Silva, J. M. (2008). Comportamento de Consumidor Online: a perspectiva da teoria do fluxo. *Revista Brasileira de Gestão de Negócios*, 10 (26), 27-44.
- Fávero, L. P., Belfiore, P., Silva, F. L., & Chan, B. L. (2009). *Análise de dados: modelagem multivariada para tomada de decisões*, Elsevier, Rio de Janeiro, RJ.
- Franco Junior, C. F. (2005). *E-business: internet, tecnologia e sistemas de informação na administração de empresas*, Atlas, São Paulo, SP.
- Granuzzo, A. R. (2001). *Avaliação da qualidade do serviço no comércio eletrônico: um estudo em sites de vendas de CDs*. M.Sc. Dissertation. Universidade Federal do Rio de Janeiro, Rio de Janeiro, Brasil.
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2009) *Análise multivariada de dados*, Bookman, Porto Alegre, RS.
- Hooley, G., Saunders, J., & Piercy, N. F. (2005). *Estratégia de Marketing e Posicionamento Competitivo*, Prentice Hall, São Paulo, SP.
- Kotler, P., & Keller, K. L. *Administração de Marketing: A Bíblia do Marketing*, Pearson Prentice Hall, São Paulo, SP.
- Limeira, T. M. V. (2005). A internet, o comportamento do consumidor e as práticas de marketing. *FGV Pesquisa – Rel 61*. Retrieved from <http://bibliotecadigital.fgv.br/dspace/handle/10438/3024> (Accessed on Sep 2011).
- Liu, X., & Wei, K. K. (2003). An empirical study of product differences in consumers' e-commerce adoption behavior. *Electronic Commerce Research and Applications*, 2, 229-239.
- Macedo, D. C., Matos, S. N., Rigoni, J., & Betim, M. T. (2010). Comércio eletrônico: identificação do perfil do e-consumidor. *Proceedings of the 30th Encontro Nacional de Engenharia de Produção*. São Carlos, Brasil. Retrieved from <http://pg.utfpr.edu.br/dirppg/ppgep/ebook/2010/CONGRESSOS/ENEGEP/16.pdf> (Accessed on Dec 2011).
- Malhotra N. K. (2009). *Marketing Research: An Applied Orientation*, Prentice Hall, Upper Saddle River, NJ.
- Martins, D., Stolt, M. S., & Freire, R. (2010). Comércio eletrônico: um enfoque baseado no comportamento de compra dos acadêmicos da Univali. *Proceedings of the 7th Simpósio de Excelência em Gestão e Tecnologia*. Resende, Brasil. Retrieved from http://www.aedb.br/seget/artigos10/252_ARTIGO%20SEGET%202010%20-%20AUTORES.pdf (Accessed on Dec 2011).
- Minitab. (2010). *Minitab statistical software user's guide 2: data analysis and quality tools*. Minitab Release 16. Minitab Inc., State College, PA..
- Nascimento, R. M. (2011). *E-commerce no Brasil: perfil do mercado e do e-consumidor brasileiro*. M.Sc. Dissertation. Fundação Getúlio Vargas, Rio de Janeiro, Brasil.
- Porter, M. (2001). Strategy and the Internet. *Harvard Business Review*. Retrieved from <http://hvass.nu/s2/artikler/teori/Misc/porter.pdf> (Accessed on Sep 2011).
- Renzi, A. B., Santos, R., & Freitas, S. (2008). Expectativas dos usuários nos processos de procura e decisão de compra de livros em lojas virtuais e livrarias: um modelo mental. 2008. Retrieved from http://www.adrianorenzi.com/adrianorenzi_abergo2008.pdf (Accessed on Sep 2011).
- Silveira, J. A. J., Muller, A., Silva, L. F., Freitas, L. R., & Costa, M. (2008). Perfil dos

- usuários de e-commerce em Guaíba. Retrieved from <http://guaiba.ulbra.tche.br/pesquisa/2008/artigos/administracao/343.pdf> (Accessed on Sep 2011).
- Sin, L. G., & Purnamasari, R. (2011). China e-commerce market analysis: forecasting and profiling internet user. *Journal of Arts, Science & Commerce*, 2 (3), 1-8.
- Teo, T. S. H., & Liu, J. (2007). Consumer trust in e-commerce in the United States, Singapore and China. *The International Journal of Management Science*, 35, 22-38.
- TIC Domicílios e Empresas. (2011). Pesquisa sobre o uso das tecnologias de informação e comunicação no Brasil: TIC Domicílios e TIC Empresas 2010. *Comitê Gestor da Internet no Brasil*. Retrieved from <http://op.ceptro.br/cgi-bin/indicadores-cgibr2010?pais=brasil&estado=ms&academia=academia&age=de-16-a-24-anos&education=pos-mestrado&purpose=pesquisa-academica> (Accessed on Dec 2011).
- Turban, E., & King, D. (2004). *Comércio Eletrônico: estratégia e gestão*. Prentice Hall, São Paulo, SP.
- Zo, H., & Ramamurthy, K. (2009). Consumer selection of e-commerce websites in a B2C environment: a discrete decision choice model. *IEEE Transactions on systems, man, and cybernetics*, 39 (4), 819-839.