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## **MIGRATION OF CONSUMERS TO INTERNET SHOPPING IN SÃO PAULO: AN EXPLORATORY STUDY**

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ARTIGO – MARKETING

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### **ABSTRACT**

*Although of increasing importance, electronic commerce is relatively new and little is known about consumer behavior and opinion. Internet shopping in Sao Paulo was examined to identify variables of influence including dissatisfaction with traditional options and other reasons that may affect this choice. During field interviews conducted with 408 people of high, medium and low incomes, most said they were not accustomed to electronic commerce. The major attraction was convenience while low Internet prices were not important. The interviews provided the basis for a proposal to determine individual interest in electronic commerce as a function of opinions expressed.*

**Key words:** *Consumer Behavior, E-Commerce, Marketing, Retail Trade.*

### **A ADESÃO DO CONSUMIDOR PAULISTANO ÀS COMPRAS PELA INTERNET: UM ESTUDO EXPLORATÓRIO**

### **RESUMO**

Embora seja uma atividade em expansão, o comércio eletrônico é uma prática ainda recente, em relação à qual o comportamento e as opiniões dos consumidores são relativamente pouco conhecidos. O objetivo deste estudo foi examinar a adesão ao comércio eletrônico por parte dos consumidores da cidade de São Paulo e identificar quais variáveis podem intervir nesse fenômeno, dentre as quais pode estar uma eventual insatisfação com o comércio tradicional. Também foram estudados fatores que podem contribuir para que um indivíduo adote esse procedimento na realização de suas compras. Para tanto, foi desenvolvida uma pesquisa de campo com base em 408 entrevistas com pessoas das faixas de renda alta, média e baixa, cujos resultados, em síntese, mostram que a maioria das pessoas ainda se encontra distante do comércio eletrônico, que o fator que mais atrai os consumidores que usam esse canal de compra é a sua praticidade e que, para os não adotantes, não foram identificados fatores que decisivamente pareçam contribuir para uma efetiva adesão. O estudo sugere que os preços baixos encontrados na Internet não são a principal motivação entre os consumidores para a escolha desse canal. Com base na pesquisa de campo foi apresentada uma proposta de como avaliar a probabilidade de uma pessoa se interessar pelo comércio eletrônico a partir de suas opiniões.

**Palavras-chave:** Comportamento do Consumidor, Comércio Eletrônico, *Marketing*, Varejo.

## **LA ADHESIÓN DEL CONSUMIDOR DE SÃO PAULO A LAS COMPRAS POR LA INTERNET: UN ESTUDIO EXPLORATORIO**

### **RESUMEN**

*Aunque sea una actividad en expansión, el comercio electrónico es una práctica relativamente nueva y el comportamiento y las opiniones de los consumidores con relación a él son relativamente poco conocidos. El objetivo de este estudio fue examinar la adhesión al comercio electrónico por los consumidores en la ciudad de Sao Paulo e identificar qué variables pueden intervenir en ese fenómeno, incluida entre ellas una posible insatisfacción con el comercio tradicional. También se estudiaron los posibles factores que pueden contribuir para que un individuo adopte ese procedimiento para hacer sus compras. Así, hemos desarrollado un estudio de campo basado en 408 entrevistas a personas de niveles de ingresos altos, medios y bajos, y los resultados, en resumen, muestran que la mayoría de las personas todavía está lejos del comercio electrónico, que el factor más importante para los consumidores que utilizan ese canal de compra es su sentido práctico y que, para los no adoptadores, no fueron identificados factores que parezcan contribuir decisivamente a una adhesión efectiva. El estudio sugiere que los bajos precios que se encuentran en Internet no son la principal motivación de los consumidores para elegir ese canal. Basado en la investigación de campo fue presentada una propuesta de cómo evaluar la probabilidad de una persona interesarse por el comercio electrónico a partir de sus opiniones.*

**Palabras-clave:** *Comportamiento del Consumidor, Comercio Electrónico, Marketing, Comercio Minorista.*

## 1. INTRODUCTION

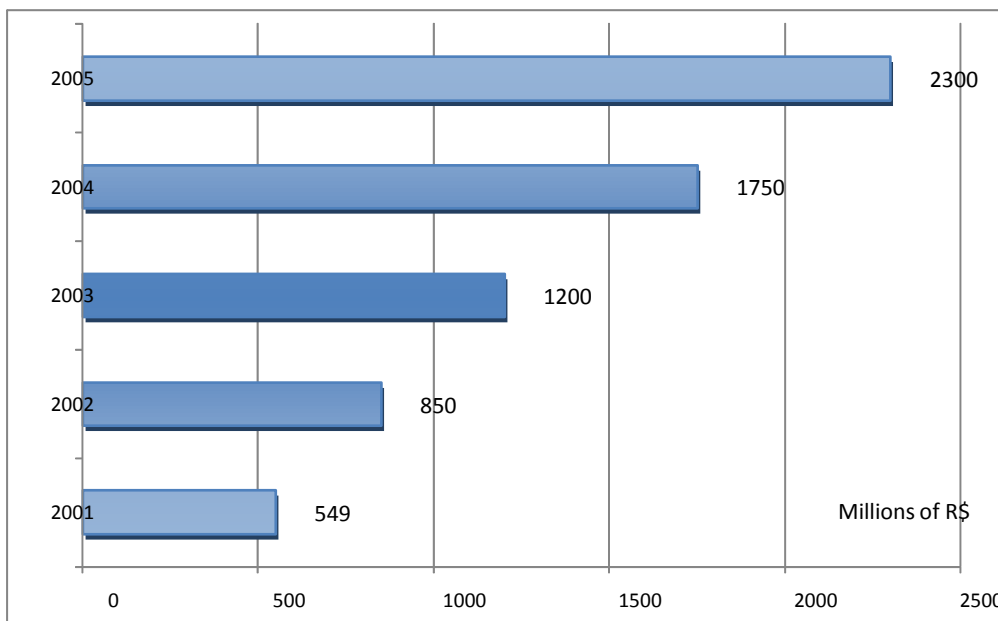
As soon as the Internet became available to society, people and companies became interested in using it to obtain the most varied benefits. In business, the use of the Internet for carrying out commercial transactions was one of the first forms of use, which became known as electronic commerce or e-commerce for short. From this initial moment, there have been alternating periods of great optimism and a certain disillusionment. Nevertheless, the volume of sales over the Internet, in general, has always grown. For Zilber (2002:76), “companies are increasingly using the infrastructure of the Internet and the application of e-commerce as a way of handling their business processes, with those relating to customer service clearly predominating.” According to a survey carried out by Forrester Research (2004) with decision-makers from 182 American companies, over the next five years it is expected that there will be an increase of between 21% and 32% in the contribution to the results of these companies from the revenue of Internet operations.

In Brazil, according to the Management Committee of the Internet in Brazil (CGIB, 2005), there are some 800,000 registered “dot.com” domains, each one theoretically corresponding to a company that has a commercial purpose. This

number shows just how big the e-commerce phenomenon is. The size and growth of this market in Brazil can also be assessed by data coming from E-bit, a company that carries out online market research. Graph 1 shows that the growth in sales through Brazilian websites has been significant. This growth derives from various factors and one of them is possibly that company initiatives are coming into line with the interests and preferences of its customers.

It is worth observing that over the last few decades the routines of people who live in major cities have changed considerably. Getting from one place to another has become increasingly difficult, people are working more, risks are higher and the rare moments of leisure have become precious. Consequently, service via the Internet might be seen as an opportunity for companies to make life more convenient for their customers, by adding value to their products and services; this is a move that will make sense if consumers are prepared to pay for this convenience. However, it might be questioned whether consumers, in general, have this vision of e-commerce or if it is only shared by a small group of people. In the latter hypothesis, the potential of the market might be close to its limit and the rest of the population will continue to make their purchases in the traditional retail sector.

Graph 1: Brazilian e-commerce sales figures



*Source: EBIT, 2006b.*

*This work intends to check whether consumers who live in large cities have some type of predisposition in favor of or against e-commerce. Taking purchases via the Internet as an alternative to traditional retail stores, the secondary objective of this study is to expand knowledge about consumer attitudes, preferences and degree of satisfaction with physical stores. The study is justified, since selling via the Internet is not a consolidated issue. The pertinent theory is still being constructed while people's propensity to using this purchase channel is apparently evolving.*

## **2. E-COMMERCE AND CONSUMER BEHAVIOR**

*Turban et al. (2000) date origins of e-commerce back to the 1970s, with the growth of the electronic transfer of funds and electronic data exchange. Other applications, ranging from share trading to travel reservation systems, followed these early ones. Although the heavily telecom-based strategic value of these systems was widely recognized, only when the Internet's commercial phase started in the early 1990s was the term "electronic commerce" coined and its applications expanded. For Turban and King (2004:3), e-commerce "is understood as being the process whereby products, services and information are bought, sold and exchanged over computer information networks or via the Internet." According to Kambil (1997), e-commerce is the application of information technology for sustaining business processes and for the exchange of goods and services, while Malaga (2001) considers that the capacity of information technologies such as the worldwide web to facilitate economic activity is called e-commerce.*

*Currently, the understanding of the term e-commerce is fairly wide-ranging and it has broad implicit possibilities for entities involved, the products traded, the information processed and the computer networks used. These include online payments, the placing of orders, buying, selling, reservations, etc. However, there are restrictions; for example, whereas there are widespread electronic sales of music CDs, the sale of clothes, which generally need to be tried on, is far more limited.*

*The way in which people decide on their purchases can be analyzed from the*

*microeconomics and marketing points of view. In the microeconomic approach, the consumer is analyzed and mathematically modeled, the assumption being that his behavior is rational and that he is trying to maximize utility. On the other hand, in marketing, the study of consumer behavior often focuses on the purchasing process and on the variety of forces that model it (CHURCHILL JR.; PETER, 2003). Mowen and Minor (2002:3) define consumer behavior as "the study of the buying units and exchange processes involved in the acquisition, consumption and disposition of goods, services, experiences or ideas." In this wider approach, marketing resorts to sociology, psychology and other sciences to understand consumer behavior.*

*The consumer is definitely a complex being because of his multiple facets. For Giglio (2004:47), the study of consumer behavior must take into account that:*

- *Humans are positive; their behavior is dictated by rational processes of comparison, analysis and synthesis;*
- *Humans are emotional, moved by conscious and unconscious feelings;*
- *Humans are social, moved and controlled by the group's rules;*
- *Humans are dialectic, moved by the opposition there is in human existence (altruism and egoism, for example);*
- *Humans are complex, moved by decision and indecision on various levels, which makes their behavior unpredictable.*

*Churchill Jr. and Peter (2003) indicate that the study of consumer behavior should consider that when a consumer makes a purchase, he might be meeting a utilitarian or hedonic need. Utilitarian need concerns basic functions and material benefits, whereas hedonic need concerns the desire for pleasure and self-expression. Finally, Kotler (1995:60) indicates that "marketing professionals should study the desires, perceptions, preferences and buying behavior of their consumers." Such a study will provide the clues needed for developing new products, new product features, price, channels, messages and other elements of the marketing mix.*

### 3. DEVELOPMENT OF THE RESEARCH

The research had the following specific objectives:

- To check the distribution of people in an urban center who express restrictions as to e-commerce;
- To investigate the benefits and restrictions that people in favor of and against e-commerce attribute to it;
- To outline the factors that contribute to people being in favor of or against making their purchases via e-commerce.

Bearing in mind that the objectives of this work involved consumer behavior, the researchers decided to carry out a study that had an empirical-analytical approach and involved collecting information in the field. According to Adams and Preiss after Moreira (2002:15), this type of study “has to do with the types of activities carried out by the researcher when dealing with people who are the object of his study.” According to the same authors, this type of investigation may be used to measure attitudes, preferences, beliefs and behavior, mapping out forecasts about the future, or even asking questions about facts in the lives of people.

The universe for which the investigation was designed comprises adult consumers living in the

city of São Paulo. Information was collected from a sample of individuals, using questionnaire-based interviews. Since the most important questions on the questionnaire were closed and dichotomous and because the dispersion of the population was unknown, a priori, when deciding on the sample size the worst case scenario was considered, which is 50% positive replies and 50% negative. By adopting a correctness level of 95.5% for establishing confidence intervals and a maximum error rate of 5%, the researchers decided that a minimum sample size of 400 people was needed. Since the sample size is very much smaller than the population, it was unnecessary to use the correction factor for finite populations.

The questionnaire was first submitted to a pretest of 20 interviews, which helped to refine it until it reached the final version used in the field survey. The interviews were carried out in the street, in predetermined locations, with people chosen by the interviewer, whose quota of interviews involved stratification criteria by region of the city, gender and places frequented by consumers who fell into the high, medium and low income bands. The sizing of the quotas of the interviewees took into account IBGE census data, which indicate approximately equal percentages between men and women in the population. Table 1, below, shows the characteristics of the sample.

**Table 1: Characteristics of the sample**

Residents living in the north of the city	25.0%
Residents living in the south of the city	25.0%
Residents living in the east of the city	25.0%
Residents living in the west of the city	25.0%
Interviewees from high income districts	33.3%
Interviewees from medium income districts	33.3%
Interviewees from low income districts	33.3%

Source: Authors.

The procedures adopted regarding the size and composition of the sample were aimed at obtaining sampling results that would indicate with a relative degree of certainty the trends and behavior of all consumers from São Paulo, in accordance with the variables and dimensions investigated in the survey. Sampling by quotas is not strictly probabilistic – a prerequisite for making inferences – although

similar opinion-gathering studies using samples of this nature have yielded good results. To ensure the sample’s representativeness, four geographic regions of the city were considered – north, south, east and west – and in each region, those locations that have a large flow of high, medium and low income consumers were identified. In each of these 4 regions, 100 interviews were carried out,

*distributed between those locations where there is a concentration of consumers from the different income bands.*

#### **4. RESULTS**

*The results of the field survey showed how the purchasing frequency in the traditional retail sector varies as a function of the type of retail business. It was observed that in certain business areas, such as supermarkets, the number of purchases per year is significantly greater than in others, as is the case of the retail household appliances segment. Considering that people generally have time restrictions, one might argue that the segments*

*where the purchasing frequency is high might make a lot of progress if they were to offer their customers more convenient alternatives.*

*Interviewees were asked to evaluate the quality of service in different types of retail outlets, by attributing to them marks from 1 to 4. The average marks attributed are shown in Table 2. One can see that all the average marks are very close. Moreover, there are no significant variations between their corresponding standard deviations. This suggests that, in the assessment of consumers, there is no type of retail store offering service of a quality that stands out from the others. The high averages also suggest, in general terms, that consumers are relatively satisfied with retail stores.*

**Table 2: Assessment of the types of retail**

<b>Type of retail</b>	<b>Average score</b>	<b>Standard deviation</b>
Supermarkets	3.26	0.531
Hypermarkets	3.21	0.501
Apparel stores	3.20	0.513
Pharmacies and drug stores	3.19	0.586
Bookstores	3.22	0.558
CD stores	3.20	0.577
Toy stores	3.19	0.576
Home apparel stores	3.24	0.535
Furniture stores	3.20	0.505
Building materials stores	3.21	0.468
Household appliances stores	3.25	0.515

Source: Authors.

*The main means of communication from which consumers learn of offers and promotions for all types of retail is television, followed by newspaper inserts, leaflets distributed in the street and advertising in magazines and newspapers. In Table 3, it is interesting to note that although the most*

*recalled vehicle was electronic, all those in second place are not electronic.*

**Table 3: Means of communication preferred by consumers**

<b>Type of retail</b>	<b>1st place</b>	<b>2nd place</b>
Supermarkets	TV - 81.6%	Newspaper inserts - 42.3 %
Hypermarkets	TV - 86.5%	Leaflets in the street - 59.8%
Apparel stores	TV - 77.7%	Leaflets in the street - 39.7%
Pharmacies and drug stores	TV - 89.5%	Magazines and newspapers - 45.1%
Bookstores	TV - 77.2%	Newspaper inserts - 38.0%
CD stores	TV - 85.8%	Leaflets in the street - 53.2% Magazines and newspapers - 54.4%

Type of retail	1st place	2nd place
Toy stores	TV - 76.7%	Newspaper inserts - 38.7%
Home apparel stores	TV - 89.5%	Leaflets in the street - 43.6% Magazines and newspapers - 42.9%
Furniture stores	TV - 77.4%	Billboards - 39.3% Magazines and newspapers- 38.8%
Building materials stores	TV - 88.7%	Leaflets in the street - 54.4% Magazines and newspapers- 55.9%
Household appliances stores	TV - 84.6%	Newspaper inserts - 48.0%

Source: Authors.

Of the 408 interviewees, only 12.3% said that they had already purchased something from the Internet and of those who had not yet done so, 13.4% said they would like to use this retail channel. These 13.4% potential purchasers represent 11.8% of the entire market, which means that there is willingness, from the demand point of view, to practically double the number of electronic retail consumers.

A series of questions was also asked in which the interviewees had to say whether they agreed with phrases about the possible benefits and problems of buying on the Internet. On a Likert scale, respondents had to agree or disagree, either fully or partially, with statements put to them. Interesting facts emerged from this block of questions that may be indications of questions that should merit the attention of retail professionals.

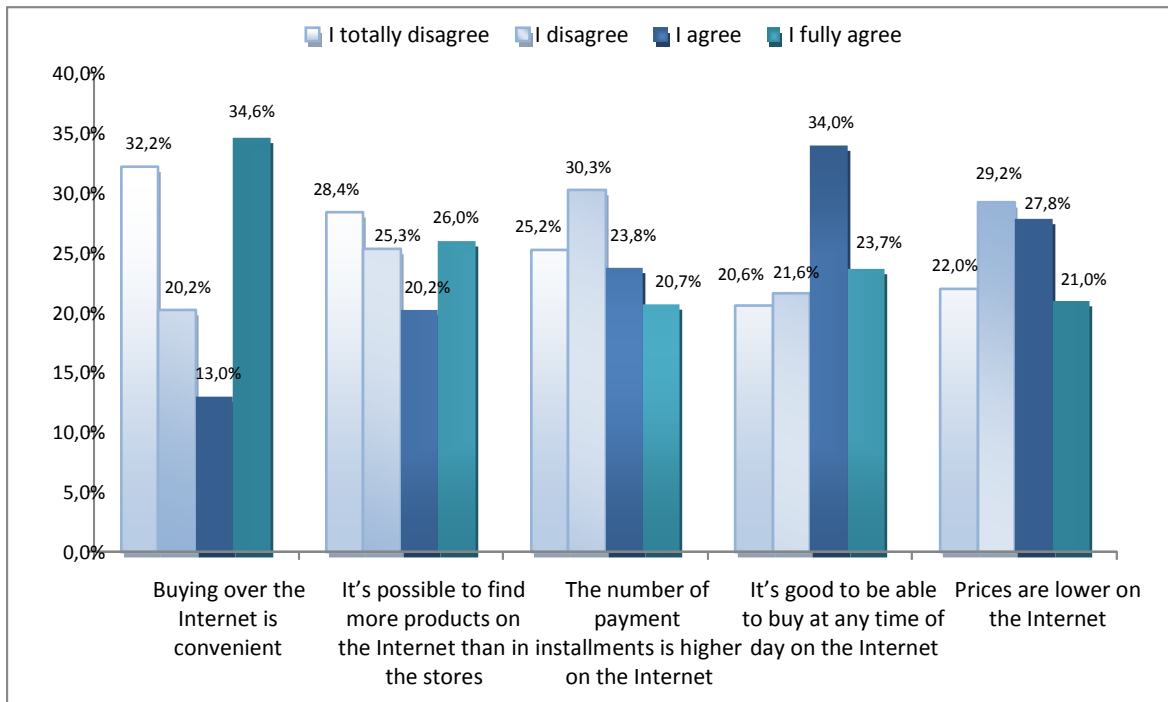
One must point out that a relatively high percentage of people (about one in four of the respondents) were unable to adopt a position on the statements. This occurred with all the phrases on the questionnaire. Although it was not necessarily the same people who had difficulties in all the questions, the fact remains that even when they were presented with arguments about matters that everyone is supposedly familiar with, a large

number of the consumers proved insecure in their replies. Another fact that also suggests that a more in-depth analysis is needed is the high dispersion of the replies of people who gave their opinions on the phrases they were shown.

Graph 2 shows the replies to the possible benefits of buying over the Internet. One can see that not even an aspect that a priori one might considered easy to answer, i.e., the convenience of e-commerce, was able to elicit a relatively unanimous response. This dispersion suggests caution is needed when studying opinions and attitudes about the Internet and e-commerce, particularly the opinions of people who are relatively unfamiliar with the technology. Internauts and people who belong to the more affluent sectors of the population have greater access to technology and therefore know about these issues, but this may not apply to the public in general. In fact, the research showed that there is a great level of ignorance of these matters. One must point out that the field survey was carried out in São Paulo, which, according to the 12th edition of the Webshoppers survey (EBIT, 2006c), accounts for 21.5% of the e-commerce sales of the whole of Brazil. If the survey had covered other regions in the country, the degree of ignorance would have been undoubtedly higher.

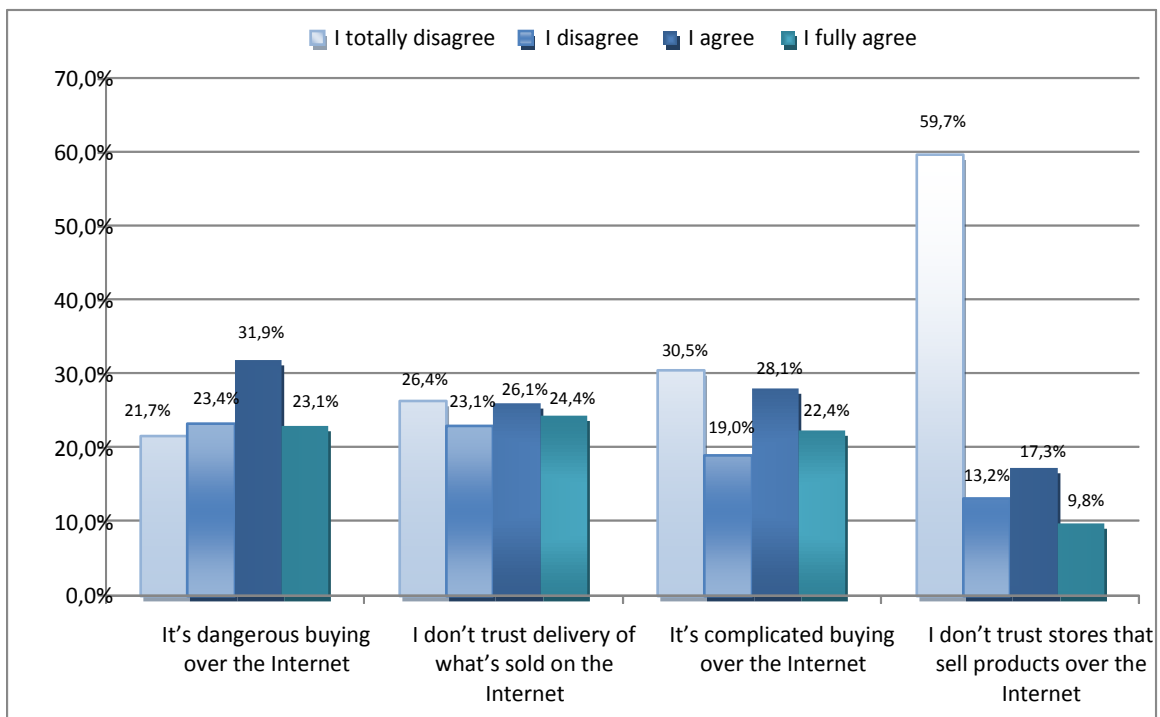


Graph 2: Possible benefits of buying on the Internet



Source: Authors.

Graph 3: Possible problems with buying on the Internet



Source: Authors.

Graph 3 shows the replies to the possible problems associated with buying via the Internet. Again, one can see that the opinions of the interviewees were very dispersed. The only aspect regarding which one could clearly identify a predominant opinion was the large degree of disagreement (59.7%) with the statement that indicated lack of confidence in stores that sell products over the Internet. As the interviewees do not agree with a negative sentence (“I do not trust stores that sell products by the Internet”), the conclusion is that respondents who gave this reply actually trust companies that sell online. It might also be speculated that as these people become more familiar with buying over the Internet, this trust will rise further. As Torjak (2002) observed, experienced Internet consumers trust the privacy and security features of the virtual store websites a lot.

#### 4.1. Analysis of the group of people who have already bought or would like to buy via the Internet

The opinions on e-commerce supplied by interviewees from the group of people who have

already bought or would like to buy via the Internet were submitted to factor analysis. This group comprised 98 people and the objective was to identify which factors contribute to them feeling motivated to buy via the Internet. As this study is exploratory by nature, analysis of the data obtained in the field did not take into account any pre-established model.

The method used in factor analysis for rotating the initial matrix was Varimax (orthogonal rotation), with Kaiser normalization; there was convergence in seven iterations. The Kaiser-Meyer-Olkin test to measure sampling adequacy was 0.701, which allows the analysis to continue, according to Pestana and Gageiro (2000:397). Bartlett’s sphericity test yielded significance of 0.000, which, because it is lower than 0.05, leads one to conclude that there is a correlation between the variables and, therefore, that factor analysis can be used. Four factors were obtained, whose accumulated percentage of total variance explanation is 74.26%. The eigenvalues were also adequate. Table 4 shows the corresponding rotated matrix.

Table 4: Rotated components matrix (group of buyers)

Variables	Factor 1	Factor 2	Factor 3	Factor 4
It’s possible to find more products on the Internet than in the stores	0.865	-0.074	-0.160	0.041
Buying over the Internet is convenient	0.802	-0.099	-0.266	0.178
The number of payment installments is higher on the Internet	0.732	-0.287	-0.079	-0.205
Prices are lower on the Internet	0.615	-0.135	0.183	-0.170
It’s dangerous buying over the Internet	-0.155	0.832	-0.146	0.293
I don’t trust delivery of what’s sold on the Internet	-0.243	0.812	0.312	-0.196
I don’t trust stores that sell products over the Internet	0.003	-0.099	0.827	0.222
It’s complicated buying over the Internet	-0.269	0.393	0.723	-0.154
It’s good to be able to buy at any time of day on the Internet	-0.071	0.060	0.109	0.899

Source: Authors.

Factor 1 is formed by the variables “It’s possible to find more products on the Internet than in the stores”, “Buying over the Internet is convenient”, “The number of payment installments is higher on the Internet” and “Prices are lower on the Internet.” From the customer viewpoint, this factor refers to those attributes that indicate how complete

the retail service is, namely: greater selection, comfort when making the purchase, the offer of credit and an appropriate price structure. As the factor is identified by the group of people that are in favor of online purchases, this indicates that consumers attribute value to its variables and suggests it should be named “valued benefits.”

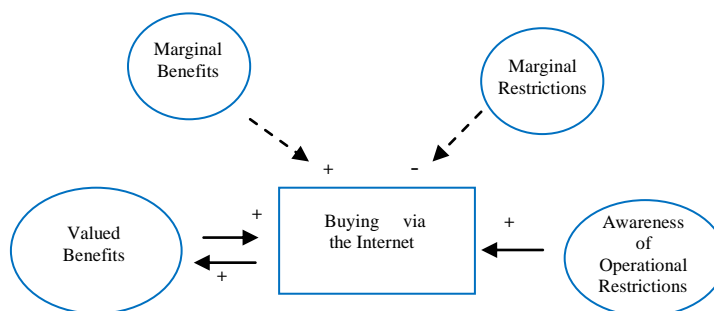
Factor 2 comprises the variables “It’s dangerous buying over the Internet” and “I don’t trust delivery of what’s sold on the Internet.” These attributes are linked to the difficulties that permeate buying or finalizing the selling operation. As the factor is identified by the group of people that is favorable to online purchases, one could argue that consumers are aware of these restrictions and live with them normally. Therefore, the factor will be named “awareness of operating restrictions.” Consumer awareness of these restrictions clearly points to the importance of the retail market being permanently attuned to their needs.

Factor 3 brings together the variables “I don’t trust stores that sell products over the Internet” and “It’s complicated buying over the Internet.” These variables possibly refer to isolated thought about e-commerce of those who like this retail modality, or to the difficulties perceived regarding some websites that have been perceived from buying experiences. This isolated and specific characteristic possibly arises from two aspects: 1) the existence of many unknown or little known buying sites that are contrasted to the Internet branch of those stores that also exist in traditional commerce and that inspire trust in their customers; and 2) the complicated interfaces and procedures for buying electronically. Despite this apparent complexity, consumer satisfaction with electronic purchasing is high, as shown by the Ebit Satisfaction Index, which has been over 85% for several years (EBIT, 2006a). Therefore, this third factor may be called “marginal considerations” showing that though they may be inconvenienced, consumers are still motivated to buy online.

Finally, Factor 4 comprises just one variable, “It’s good to be able to buy at any time of day on the Internet.” It might be expected that this variable would form part of Factor 1, but one can also argue that, even though it is characteristic of a possible benefit, perhaps this benefit is perceived differently by consumers. In this sense, it is worth observing that online stores also advise that most of their sales take place around normal trading hours. In principle, this factor is not a determinant of purchases and will be named “marginal benefits.”

Figure 1 gives the authors’ interpretation of the way in which these factors possibly maintain a relationship with buying via the Internet among people who have already bought or would like to buy by in this way. In this figure, the arrows indicate an influence relationship and the signs indicate whether the influence is in the same direction or not. The solid arrows indicate an actual relationship, whereas dashed arrows indicate a possible or weak relationship. In accordance with this figure, the more valued the benefits, the more online purchases the consumer will make and, inversely, the more purchases are made, the more the value of the benefits will be reinforced. An understanding and awareness of the operational restrictions that affect the purchase are understood as strengthening the intention to purchase and not inhibiting it. The better perceived this question is, the more the consumer will be inclined to purchase online. Finally, the figure also shows the existence of other benefits and restrictions, but which are of a secondary nature and possibly contribute little or nothing to the electronic purchase.

Figure 1: Relation among the factors of the group of people who have already bought or who would like to buy via the Internet



Source: Authors.

**4.2. Analysis of the group of people who have not bought and would not like to buy via the Internet**

Other factor analysis was carried out with 310 consumers from the group that had never bought anything via the Internet and would not like to do so, in order to check which factors contribute to them not feeling motivated to buy on the Internet. Once again the method used for the initial matrix rotation in the factor analysis was Varimax (orthogonal rotation), with Kaiser normalization,

with convergence in five iterations. The Kaiser-Meyer-Olkin test had a value of 0.677, which allows the analysis to continue. As in the previous case, Bartlett’s sphericity test had a significance of 0.000, which indicates the existence of correlation between the variables and is not a counter-indication to the use of the factor analysis technique. Three factors were obtained, whose accumulated total variance explanation percentage is 74.24%. Again, the eigenvalues were adequate. Table 5 gives the corresponding rotated matrix.

**Table 5: Rotated components matrix (group of non-buyers)**

Variables	Factor 1	Factor 2	Factor 3
<i>It’s dangerous buying over the Internet</i>	0.875	-0.056	0.101
<i>Prices are lower on the Internet</i>	-0.791	0.189	0.083
<i>The number of payment installments is higher on the Internet</i>	-0.682	0.558	0.099
<i>It’s good to be able to buy at any time of day on the Internet</i>	0.663	-0.123	0.209
<i>Buying over the Internet is convenient</i>	-0.116	0.950	-0.150
<i>It’s possible to find more products on the Internet than in the stores</i>	-0.212	0.948	-0.129
<i>It’s complicated buying over the Internet</i>	0.278	-0.256	0.814
<i>I don’t trust stores that sell products over the Internet</i>	-0.224	0.072	0.750
<i>I don’t trust delivery of what’s sold on the Internet</i>	0.472	-0.229	0.595

Source: Authors.

Factor 1 brings together the variables “It’s dangerous buying over the Internet,” “Prices are lower on the Internet”, “The number of payment installments is higher on the Internet” and “It’s good to be able to buy at any time of day on the Internet.” As the loads of the variables “Prices are lower on the Internet” and “The number of payment installments is higher on the Internet” are negative, the interviewees disagree that these attributes indicate prudence in connection with buying online. Likewise, agreement with the first variable may be understood as precaution. Agreement with the trading hours is possibly innocuous, considering that, for this group of people, there is no evidence of any time restriction for their purchases. Therefore, this factor can be named “caution with the Internet.”

Factor 2 contains the variables “Buying over the Internet is convenient” and “It’s possible to find more products on the Internet than in the stores.”

Although respondents also agreed with the above statements and though they do not buy and do not want to buy via the Internet, probably without these conveniences the rejection of these people to e-commerce would be even greater than it is. Therefore, Factor 2 will be named “propensity toward the Internet.”

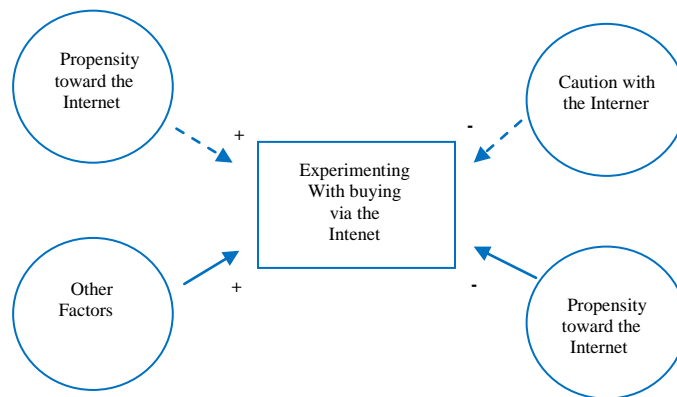
The final factor is formed by the variables “It’s complicated buying over the Internet”, “I don’t trust stores that sell products over the Internet” and “I don’t trust delivery of what’s sold on the Internet.” As the respondents do not want to buy via the Internet, neither do they have an appetite for buying from it, phrases corresponding to the first and third variables possibly express rejection for purchasing online. Concerning the second variable, with which the consumers disagree, it seems to result from the satisfaction they experience with large physical stores. These stores probably constitute this group of respondents’ paradigm for

retail service and that, along with the lack of an equivalent point of reference for commercial websites, may be seen as yet another aspect of rejection to buying online. Therefore, the factor will be named “rejection of the Internet.”

In Figure 2, once again, the authors speculate how the factors identified possibly maintain a relationship, at present, with a possible experiment with buying from the Internet by the group of people who have never bought and would not like to buy via this channel. In this case, the determined factors, in the best of hypotheses, suggest some

benefits with which this group is possibly much more pleased in traditional stores. Consequently, it is left to the other factors to decide whether this public will adhere to purchasing via the Internet, for example, real access to technology and a change in the behavior and values of this type of consumer. Perhaps, for this group, physical-virtual retail, where electronic purchasing is carried out in a store with the help of a salesperson, is an interesting alternative both for those who sell and for those who buy.

**Figure 2: Relationship of the factors of the group of people who have never bought and who would not like to buy over the Internet**



Source: Authors.

### 4.3. Determinants of adherence to e-commerce

One could argue that the perceptions of a respondent about e-commerce determine whether this person belongs to the group in favor of buying via the Internet or to the group against it. This suggests checking the chance of a respondent belonging, for example, to the group of those in favor of such purchases, as a function of their opinions about e-commerce. Knowledge of the probability of a person belonging to the group in favor of purchases via the Internet may be of interest, because if it is known how much they are expected to spend it will be possible to put a figure to an estimate of Internet sales, as they are equal to the product of the probability of buying times the expectation of individual spending.

The development of an analysis of this type, in which one attempts obtain the probability of a dependent variable by assuming a determining value as a function of one or more of the

independent variables, suggests the use of a linear probability model. Observing that the value assumed by the dependent variable is dichotomous, because a person cannot belong at the same time to the group in favor of and the group against e-commerce, and considering that just one independent variable is involved, one has:

$$P_i = E(Y_i | X_i) = \beta_1 + \beta_2.X_i + \mu_i$$

However, the literature shows that the direct application of a model of this type presents some problems: (1) the non-normality of  $\mu_i$ ; (2) the heteroskedasticity of  $\mu_i$ ; (3) the possibility of the estimate of  $E(Y_i | X_i)$  falling outside the 0 to 1 interval. These restrictions recommend carrying out transformations that make the analysis feasible. In this particular study, the authors decided to carry out a logistic regression, which for just one independent variable takes the following form:

$$L_i = \ln\left(\frac{P_i}{1-P_i}\right) = \beta_1 + \beta_2 \cdot X_i$$

In this model,  $P_i$  is the probability of the dependent variable having the value 1, indicating the presence of the phenomenon being studied, and  $1 - P_i$  represents the probability of the occurrence of the complementary event. In the specific case of this study, for the dependent variable, the value 1 was considered as belonging to the group of people in favor of buying via the Internet and value 0 was considered to represent those not belonging to this group. The questions on the questionnaire were considered as independent variables, but with their extreme values (“fully agrees” and “totally disagrees”) grouped with the corresponding

intermediate values (“agrees” and “disagrees”). In this way, the variables came to represent just agreement or disagreement with the phrase in the questionnaire about the Internet. Value 1 indicates agreement and value 0 indicates disagreement.

For the 408 initial interviews, 287 questionnaires were used, because many interviewees failed to respond to some questions because they did not know what position to adopt with regard to the issue. Using all the questions from the questionnaire that expressed an opinion, the parameters of the logistic regression were calculated, observing that some variables did not prove to be significant and were discarded from the analysis. Using only the significant variables the results presented in Table 6 were obtained.

**Table 6: Results of the logistic regression**

**Dependent variable: belonging to the group that has already bought or would buy from the Internet**

Variable	Coefficient	Standard error	T statistic	probability
C: constant	0.359050	0.126239	2.844214	0.0048
V1: it's convenient to buy via the Internet	0.156627	0.020221	7.745945	0.0000
V2: prices are lower on the Internet	-0.089374	0.025912	-3.449139	0.0006
V3: it's dangerous top buy on the Internet	-0.077406	0.026002	-2.976957	0.0032
Statistic F = 27.49496 probability (statistic F) = 0.00000				

Source: Authors.

As Table 6 shows, the model proved to be adequate. The values of the t statistic and the probabilities associated with it indicate that the variables maintained in the study are truly significant, since they can be considered different from zero, with a good level of confidence. The results also show that the F statistic, which tests the general adjustment of the model, has satisfactory values.

From the coefficients obtained, one can calculate the probability that someone who has adopted a certain position concerning the questions that express an opinion belongs to the group in question. For this, the equation resulting from the logistic regression is used:

$$L_i = \ln(P_i / (1 - P_i)) = 0.359050 + 0.156627 \cdot V1 - 0.089374 \cdot V2 - 0.077406 \cdot V3 + u_i$$

The equation shows that every time the variable V1 assumes the value 1, i.e., the interviewee agrees with the phrase “Buying over the Internet is convenient,” the probability of that person belonging to the group, or that they have already bought via the Internet, increases. When the V2 variable (which has a negative sign) assumes the value 0, i.e., the respondent disagrees with the

phrase “Prices are lower on the Internet,” the probability of that person belonging to the group in question increases. Likewise, when the V3 variable (which also has a negative sign) assumes the value 0, i.e., the respondent disagrees with the phrase “It’s dangerous buying over the Internet,” the probability of that person belonging to the group in question increases.

The preceding analysis suggests some conclusions. (a) Consumers who resort to e-commerce are clearly looking for convenience in their buying. (b) Despite information about prices on the Internet being relatively easy to obtain through research and comparison, it is not obvious that the lowest price is the main attraction of this type of commerce; the results of the regression suggest precisely the opposite. (c) This type of consumer is not intimidated by the possible risks associated with buying over the Internet.

These results are in line with market research carried out with people who are in the habit of buying over the Internet (EBIT, 2006b, 2006c). The research shows that these consumers have income higher than the national average and that for them, even in traditional commerce, price is not the prime driver of the decision to buy. Furthermore, this consumer has greater knowledge about the precise limitations of Internet technology and possibly manages to weigh up better the possible risk of buying through this channel as compared to the risk that also permeates the traditional channel.

It is worth observing that, although the model obtained was considered adequate according to statistical criteria, the logistic regression has a random term,  $u_i$ . According to Carmo, Sartoris and Braga (2000:24), it is included in the specification of econometric models for three reasons: (a) the omission of explanatory variables; (b) the fact that human and social behavior cannot be precisely described, since it intrinsically contains an element of randomness; (c) the existence of measurement errors in the dependent variable, with the theoretical values not being repeated precisely. In this case, their presence indicates that there might be other variables with explanatory power and that they simply were not considered in this study, which suggests the model needs to be improved for future studies.

## **5. CONCLUSIONS**

In São Paulo, only 12.3% of the consumers have already purchased anything via the Internet and of those who have, just 13.4% said they would like to use this type of retail trade. The lack of interest of the rest of the population (approximately 75%) in e-commerce might be explained as resulting from the feeling of distance these people have vis-à-vis the

Internet itself. The researchers see lack of access to the Internet as a consequence of Brazil's economic and social context, which leads to digital exclusion (TEIXEIRA, 2001; SANCHEZ, 2003). However, this study revealed a similarity in the demographic and socioeconomic profiles of the two groups of respondents, comprising people in favor of or against purchasing online. This suggests that the explanation for the existence of these groups cannot only be due to socioeconomic differences. In any event, the study carried out also shows that many consumers are still uncomfortable with the subject of the Internet. An example of this is that 121 people were unable to come up with any opinion about one or more of the nine phrases on the pros and cons of e-commerce in the questionnaire. The high level of dispersion of the replies of those interviewees who were capable of expressing their opinion is also points in this direction.

In principle, one might suppose that good quality service in e-commerce might attract customers who are dissatisfied with the service of some traditional retail segments. However, the high marks the interviewees ascribed to the various types of retail that have physical stores indicate that the attraction of purchasing on the Internet is unlikely to result from a difference in the level of service quality between these two sales modalities.

The positive aspect of e-commerce that achieved the highest percentage of agreement among those interviewees who have already bought via the Internet or who would like to do so was convenience. For those who do not use e-commerce and are not thinking about using it, it is the possibility of buying at any time of the day or night. Although recognized as positive, this latter aspect may not be very relevant, because most people said that they normally go to the supermarket and apparel stores on weekends (56.4% and 57.0%, respectively). A significant part of the consumers also said that they are in the habit of buying at night (35.0% and 26.0% respectively), which shows that it is also possible to arrange an extended and suitable time for making purchases other than via the Internet.

The negative aspect with which there was the greatest percentage of agreement by the interviewees who have already purchased from the Internet is the danger of buying from the web. For those who do not use e-commerce and are not

thinking considering its use, it is their lack of trust in the delivery of what is being sold via the Internet. In the first case, agreement with the danger of buying electronically indicates that people are aware of the risk, but that this clearly does not keep them from buying. In the second case, mistrust as to delivery is perhaps not a decisive inhibitor, because consumers in this group appear not to have strong reasons for actually buying something electronically. In the two cases, the non-inhibition argument is supported by the fact that consumers had indicated that they trust stores that sell via the Internet.

The factor analysis that was conducted, using the information provided by interviewees from the group of people who had already bought something via the Internet or would like to, showed the existence of factors that help one to understand the behavior of this group: the clear presence of “valued benefits” and “awareness of operational restrictions.” This result broadly indicates that e-consumers recognize quality service on the Internet and understand the problems of this channel. The factor analysis that was done with respondents from the group that had never bought via the Internet and would not like to revealed three factors that were interpreted as “rejection of the Internet”, “caution with regard to the Internet” and “disposition toward the Internet.” In this case, factors were identified that point to acceptance of the restrictions of this purchasing channel, despite also identifying some concession concerning it. One can observe that people from both groups see both advantages and problems with e-commerce and that, probably, depending on how they feel about these advantages and problems, they adopt a position that is in favor of or against purchasing via the Internet. As apparently there is no polarization of opinions about e-commerce, there must be room for marketing or media actions in the future that will have an influence on consumer opinions.

Finally, the conclusions of this brief study of the regression model point in the same direction as the previous ones. For groups of people who use or are interested in e-commerce, there are reasons for adopting it, which are linked to its convenience; issues related to price and security are apparently unimportant. These reasons do not have the same importance in the group that is against, for which

convenience is not in evidence; these people are looking for the lowest price – even if it is not offered by online commerce – and their misgivings, possibly unfounded, with regard to buying via the Internet are obvious. For this group, these aspects clearly do not contribute to adherence that, one should stress, is apparently not only influenced by these factors.

The prospects for e-commerce are a broad issue that needs to be studied further, particularly when considered within the Brazilian context. Besides the issue of consumer behavior, which was briefly explored in this work, it is necessary to carry out a more in-depth study of the relation between Internet sales performance indicators and the macroeconomic and demographic indicators of the Brazilian population. A parallel between e-commerce and the luxury end of the Brazilian retail segment might also exist, which might even allow the real possibilities for expanding this type of sale to be checked.

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