THE IMPACT OF INTERNET USER SHOPPING PATTERNS AND DEMOGRAPHICS ON CONSUMER MOBILE BUYING BEHAVIOUR

Enrique Bigne
Department of Marketing
University of Valencia
enrique.bigne@uv.es

Carla Ruiz
Department of Marketing
University of Valencia
carla.ruiz@uv.es

Silvia Sanz
Department of Marketing
University of Valencia
silvia.sanz@uv.es

ABSTRACT

In less than 15 years, the mobile phone has become an essential part of our daily lives. It is no longer a luxury item and has become one of the most commonly used daily consumer goods throughout the world. Despite its growing significance, there is still a lack of research work in many countries in this field. This study aims to make an approximation of the M-shopper profile and identify the variables influencing purchase behaviour. The methodology used to achieve these objectives is based on 7 focus groups and the analytical techniques of Chi-Square and logistic regression. Analysis of the results obtained from a representative sample of 2,104 Spanish Internet users shows that the M-commerce decision can be predicted according to consumer age, social class and behaviour patterns as user of non-store shopping channels.

Keywords: Consumer behaviour; Direct shopping; Home Shopper; M-Commerce

1. Introduction

Technological progress in the sphere of information and communication is encouraging the use and development of new shopping methods, leading to a rapid growth in non-store shopping as the individual can buy products/services without having to travel to retail outlets [Sharma and Sheth 2004; Thompson 1997]. This growth in non-store shopping and new trends in technology have facilitated the introduction of electronic marketing and promise to provide new ways of impacting and serving consumers in the future [Balasubramanian, Peterson and Jarvenpaa 2002; Reynolds 2000; Sivanad, Gesta and Sulep 2004]. Practically all products/services can be purchased quickly, conveniently and without moving from home [Davison, Dorrington and McCoy 1982; Eroglu, Machleit and Davies 2003; Rosenberg and Hirschman 1980; Sheth 1983].

Wireless Internet via mobile devices (WIMD) is leading the world into another spectrum of communications and means of conducting day-to-day business and life activities [Sivanad, 2004]. In the next years, more Internet transactions will be realized via mobile phones than fixed network devices. According to the MC Statistics viewed at epaynews.com, only 16% of 533 million Internet users were global wireless Internet users in the year 2001; however the percentage will soar to 57% of 1460 million Internet users in 2007. At present, online ticketing, reservation for flights and hotels or theater tickets are part of the most attractive WAP applications, since they bring consumers comfort, spontaneity and mobility [Buellingen and Woerter 2004].

In general, the different methods of direct shopping are still expected to grow but whereas some of the methods are showing rather low levels of growth, stagnation and even decline, in others the predicted growth rate is picking up speed. The most innovative methods maintain significant rates of growth [Sivanad 2004; Yang 2005] and at the same time there is a tendency to use them in conjunction with other sales systems as companies seek to complement sales methods and obtain synergies [Wu and Wang 2004]. Thus for example, the combination of Internet with other methods, such as the mobile phone or television will make it possible to optimise consumer convenience and

increase their scope wider audience, in addition to overcoming some of the limitations which arise when using Internet alone as a shopping tool [Buellingen and Woerter 2004; Chiles and McMackin 1996; Jarvenpaa et al. 1999; Lohse and Spiller 1998; Swaminathan et al. 1999]. In Spain, the field study "*Surfers on the net*" [AIMC 2005] highlights the convergence of Internet with other media, and reveals that 45.4% of Internet users have sometimes watched television through Internet, 76.7% have sometimes used Internet to listen to the radio and 92.2% have sometimes consulted an e-newspaper.

It should be emphasised that the public at home use not only Internet but also the new mobile technologies such as electronic diaries and mobile phones. According to the study "*Surfers on the net*" [AIMC 2005], 37.8% of Internet users have a laptop computer, almost all of them (95.0%) have a mobile phone, 45.6% have a Web Cam and 16.0% have PDAs. These results suggest that the Internet user has a positive attitude to new technologies.

With the explosive growth of the mobile phone population combined with the development of wireless technologies, M-Commerce is becoming increasingly important to many businesses nowadays [Hung et al. 2003]. According to Wireless Week [2004] there were 94.9 million M-Commerce users worldwide in 2003 and the segment is expected to grow to 1.67 billion by 2008 [Yang 2005]. Table 1 shows mobile phone penetration in Europe during the period 1997-2002, measured as the percentage of number of lines in relation to the population in each of the member states. In comparison to other EU countries, mobile phone penetration in Spain is above the European average and higher than that of the two main economies in the Economic and Monetary Union (Germany and France) [TMC 2003]. In the Spanish case, the climate favours the use of laptops to the detriment of desk tops.

Table 1. Mobile Phone Penetration in Spain and the European Union

Year	Spain	Germany	France	Ireland	Italy	Portugal	UK	E.U.
1997	10.8	10.1	10.0	14.6	20.4	15.2	15.0	14.1
1998	16.3	17.0	19.2	25.6	35.6	30.9	25.2	24.0
1999	38.1	28.6	36.6	44.3	52.6	46.8	45.8	40.8
2000	59.9	58.7	49.5	65.2	73.2	65.4	72.9	63.3
2001	72.1	68.4	60.8	77.6	88.6	77.7	77.3	76.4
2002	80.1	71.8	65.0	76.4	90.2	82.5	82.0	79.3

Source: TMC [2003].

At present, the Spanish mobile market has a penetration rate of 86% with 36 million mobile subscribers [Netsize 2004]. With an increase of 374 thousand mobile users in April 2003, Spain saw the second largest surge in its customer base of any European country, behind Greece and ahead of Denmark [Netsize 2004]. Spain has three mobile operators (see Table 2). With more than 18 million subscribers and a 53.5% market share, Telefónica MoviStar dominates the Spanish market. Over the last two years, Amena has seen its market share grow considerably to reach nearly 20% of the Spanish mobile market in 2003. Around 60% of Spanish end-users are prepaid users.

Table 2. Spanish mobile telecom operators

	Telefónica MoviStar (www.tme.es)	Vodafone (www.vodafone.es)	Amena (www.amena.es)
Main shareholders	Telefónica (94.44%)	Vodafone Group (91.6%)	Auna (97.9%)
End-user market share in millions			
2001	15.71 (55.8%)	7.55 (29%)	4.87 (17.3%)
2002	18.10 (56.1%)	8.15 (25.3%)	6.00 (18.6%)
2003	18.87 (53.5%)	9.18 (26%)	7.22 (20.4%)
Total turnover in millions			
2002	6,817.0	3,413.23	2,229.81
2003	3,469.6	2,047.19	n/a
Monthly ARPU (€)			
2002	28.8	31.0	28.2
2003	28.6	31.0	n/a

Source: Netsize [2004].

Customization services represent 50% of the total mobile data usage (see table 3). Vote services account for a significant part of data traffic, thanks to the popularity of TV shows like El Gran Hermano, Operación Triunfo and La Isla de los Famosos.

Table 3. Mobile data services in Spain

	% of total data services
Logos and images	50%
Ringtones	50%
Adult content	5%
Games	5%
Quiz	5%
Chat	5%
Adult chat	10%
Vote	20%
Information service	5%

Source: Netsize [2004].

The increased mobile usage of recent years is a clear example of the system's growth, significance and the opportunities it offers as an independent sales channel and it therefore merits special attention from researchers. While published work on M-commerce applications and technologies and the different mobile operators and their services is becoming more abundant and representative [Barnes 2002, Buellingen and Woerter 2004; Coursaris and Hassanein 2002; Dholakia and Dholakia 2004; Figge 2004; Gerstheimer and Lupp 2004; Lehrer 2004; Leung and Antypas 2001; Kumar and Zahn 2003], there is a lack of literature on the profile of users who buy products/services through the different mobile operators and on the analysis of the factors which most influence shopping behaviour and the processes of adopting M-commerce [Coursaris and Hassanein 2002; Luarn and Lin 2004; NG-Kruelle et al. 2002; Wu and Wang 2004; Yang 2005].

Thus, the main objective of this work is to make an approximation (sociodemographic and behavioural) of the M-shopper profile based on a sample of Internet users and identify which variables exercise a significant influence on M-commerce. To achieve these objectives, this work is organised into two parts. The first part, theoretical in content, includes qualitative research, in-home shopping literature review and developing of the working hypotheses. The qualitative research is done to identify the values which are the primary drivers of consumers in mobile shopping as a complement to the theoretical framework and to develop some of our hypotheses. The second part includes the methodology used in the empirical study done on a representative sample of 2,104 Spanish Internet users and the data analysis. The M-shopper profile is described and the incidence of different variables on purchase behaviour is examined. In particular, the influence of non-store shopping experience and exposure to Internet on M-commerce is analysed. We also suggest gender, age and social class influence on consumer Mobile shopping behaviour.

2. Literature review and hypotheses development

Here we review the literature on non-store shopping and present a conceptual model for analysing the factors which influence M-shopping. In order to complete the literature review of primary driver values for consumers, we carried out a qualitative phase of research.

Qualitative research is becoming increasingly used in marketing to complement quantitative methods [De Ruyter and Scholl 1998; Srinivasan, Anderson and Ponnavolu 2002; Szymanski and Hise 2000], and is appropriate to determine if consumer reactions to new products or processes as consumer ideas, opinions and feelings can be examined in-depth, behaviour patterns can be identified and shopping behaviour explained [Crabtree and Miller 1992; De Ruyter and Scholl 1998]. As an illustration of this, Szymanski and Hise [2000] identified the possible antecedents of customer satisfaction in virtual environments using the focus groups technique and Srinivasan, Anderson and Ponnavolu [2002] carried out in-depth interviews to identify the factors which influence e-customer loyalty.

In this study, qualitative research helped us to develop some of the hypotheses of the conceptual model. We conducted 7 focus group interviews of homogeneous participants. All of them were Internet and Mobile phone-users. On average, they spent one hour using Internet per day and they had used the Mobile for about three years. Some of these respondents use the Internet and Mobile for shopping. The size of the focus group was six to ten participants. The dialogue was captured on tape. This study was conducted from March to April 2004 (see Table 4).

Table 4. Group Structure

Group meeting	Group 1 (3 dynamics)	Group 2 (2 dynamics)	Group 3 (2 dynamics)
Gender	Both genders	Both genders	Both genders
Job	Spanish university students	Senior and middle management	Students from EU
Age	18-25	40-55	18-25
Online Users/Shoppers	100% Users/ 20% Shoppers	100% Users/ 10% Shoppers	100% Users/ 60% Shoppers
Mobile Users/Shoppers	100% Users/ 40% Shoppers	100% Users/ 10% Shoppers	100% Users/ 20% Shoppers
Date of meeting	March to April 2004		

The literature review on adoption levels suggests that consumer needs, interests and attitudes vary with age, and the youngest consumers have the most positive attitude toward innovation [Darian 1987; Modahl 2000; Mulhern 1997; Rogers 2003; Schiffman and Kanuk 2003; Steenkamp, ter Hofstede and Wedel 1999; Wotruba and Pribova 1995]. Given that the variable age influences attitude towards this new medium, participants in group 2 were over 40 years old, while those in the other groups were aged between 18 and 25. In the context of interactive shopping, cultural characteristics also influence shopping patterns [Park and Jun 2003; Van Birgelen, De Ruyter, De Jong and Wetzels 2002]. Thus, consumers from individualist cultures develop a more innovative profile and are more predisposed to shop via Internet than consumers from cultures which favour collectivism [Jarvenpaa, Tractinsky, Saarinen and Vitale 1999; Steenkamp, ter Hofstede and Wedel 1999]. For this reason, the participants in group 1 were Spanish university students (students from low-individualist cultures), while those in group 3 were Norwegian and German students, i.e. from highly individualist cultures.

The conceptual model of M-commerce in Figure 1 is one outcome of this qualitative phase of research and literature review as explained below.

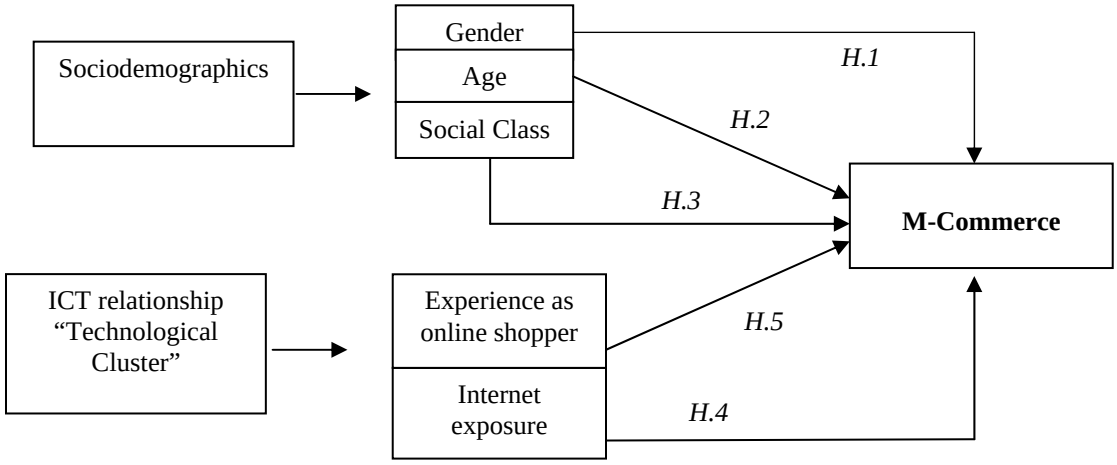

Figure 1. Conceptual Model

2.1. Sociodemographics

The literature review shows a great number of studies on the in-home shopper profile [Cunningham and Cunningham 1973; Darian 1987; Gillet 1970; Korgankoar and Moschis 1987; May and Greyser 1989; Mulhern 1997; Peterson et al. 1989; Reynolds 1974; Reynolds and Darden 1972; Wotruba and Pribova 1995], and the Internet shopper [Dholakia and Uusitalo 2002; Vrechopoulos et al. 2001; Sim and Koi 2002], but there are no specific studies on the M-shopper profile, possibly because this object of study is so new.

If we focus on the demographic characteristics of the in-home shopper, in general, the higher the level of education, income and occupation of the head of the household, the more favourable the perception of non-store

shopping [Cunningham and Cunningham 1973; Darian 1987; Gillett 1970; Mulhern 1997; Peterson et al. 1989; Reynolds 1974; Reynolds and Darden 1972; Wotruba and Pribova 1995].

One of the most successful systems of direct sales is Internet. In relation to the sociodemographic profile of the Internet shopper, the literature review reveals that system's main users are young men, with a high level of income and a university education [Brennan 2000; Dholakia and Usitalo 2002; Hoffman et al. 1995; Joines, Scherer and Scheufele 2003; Li et al. 1999; Vrechopoulos, Siomkos and Doukidis 2001], however, this profile is changing and in the United States is becoming like that of the average consumer to encompass all genders, ages and social classes. For example, in USA in the early years of Internet there were very few women users, but by 2001 women were 52.8% of the online population [Siegel 2003]. Internet shoppers have a positive attitude towards Internet [Park and Jun 2003; Sim and Koi 2002], enjoy surfing the net [Park and Jun 2003, Sim and Koi 2002], are more innovative than non Internet shoppers [Donthu and García 1999], trust their ability to make a purchase without prior inspection of the products [Dholakia and Uusitalo 2002] and usually use other technologies [Bellman et al. 1999].

The study of how gender relates to the purchase decision has always been of interest in the academic world, since in many product categories, women make the purchase decision [Dholakia 1999; Hawfield and Lyons 1998]. If we focus on the non-store shopping arena, the influence of gender on the specific behaviour of the collective of shoppers is complex and the literature review reveals contradictory results. Several authors state that women are the main users of direct shopping media [Darian 1987; Peterson, Albaum and Ridgway 1989; Wotruba and Pribova 1995]. However, the freedom and independence provided by these methods mean they are also attractive to men who usually have mainly utilitarian purchase motivations, valuing personal contact and social relations to a lesser degree [Citrin et al. 2003; Cross and Madson 1997; Hofstede 1980; Steenkamp et al. 1999].

Sociocultural pressure has made men generally more independent in their purchase decisions, while women place greater value on personal contact and social relations [Cross and Madson 1997; Citrin et al. 2003]. Society has traditionally favoured affective relations among women (for example, the development of shared activities with adults of the same sex), which entails greater interdependency in their social relations. In contrast, men need to develop their own identity, even if it means repressing their affective and relational needs. These schemes of interdependency and separation do not only influence the individual's personality, but also his/her attitude and behaviour towards different situations such as shopping [Markus and Oyserman 1989].Thus, men's purchase motivations are usually mainly utilitarian [Hofstede 1980; Steenkamp et al. 1999] while social and personal motives (entertainment to break routine, the chance of socialising in a public place, interaction with other consumers, etc.) increase satisfaction with shopping and encourage women to continue frequenting traditional commercial establishments. Many women consumers see shopping as a source of stimulation and inspiration and place special value on the act of shopping itself [Sim and Koi 2002].

In general, consumers think that opportunities for interaction with sales personnel or the opportunity to socialise with other consumers are lower in virtual channels in comparison to traditional ones, but find greater efficiency (savings in time, money, etc…) in non-store shopping [Rohm and Swaminathan 2004; Trocchia and Janda 2000]. Given that men are mainly guided by utilitarian motivations and women by hedonistic ones, and male shoppers mind less the sacrifices they need to make in non-store shopping (i.e. the inability to touch a product before making a purchase or the lack of a social environment and enjoyable ambience), it is to be expected that men place greater value on the benefits of non-store shopping [Citrin, Stern, Spangenberg and Clark 2003; Marcus and Kitayama 1991]. Research by Yang [2005] also evidences that males tend to perceive M-Commerce favourably. With that in mind, we offer the following hypothesis:

H1) Among Internet users, men are more predisposed to M-commerce adoption than women.

As for the age variable, users of non-store shopping systems are young, as the new technological advances in some direct shopping methods require account to be taken of the individual's capacity to understand the changes and complexities in the new technologies and to develop a positive attitude towards them [Mulhern 1997; Peterson et al. 1989; Rogers 2003; Wotruba and Pribova 1995]. For example, the presence of children in the household favours non-store shopping [Darian 1987; May and Greyser 1989; Modahl 2000]; however, the elderly segment of the population is very reticent to adopt the new sales channels, since they have no time restrictions and enjoy traditional shopping [May and Greyser 1989]. Trocchia and Janda [2000] maintain that the lack of experience with the new technologies, resistance to change and the need to have a visual and/or tactile experience of the product before the purchase, are the main reasons why mature consumers do not shop by Internet. Lack of familiarity with the medium prevents mature consumers from evaluating the benefits Internet offers and means that they tend to prefer to use other information sources for their purchases such as the television, press or social interaction with friends and relations.

Young people are more favourably disposed towards change [Modahl 2000; Mulhern 1997; Schiffman and Kanuk 2003] and use the new technologies such as the mobile phone from a very early age [AIMC 2004]. They also

have hedonistic and utilitarian motives for using Internet and mobiles, considering them a source of information, communication, entertainment and an alternative shopping channel [Bordeau et al. 2002]. The attitude towards innovation and these differentiated needs are one of the main reasons for the growth in personal computers and mobiles in households [Modahl 2000], since young people are motivated to use these media for something more than just education or work [Bordeau et al. 2002; Joines, Scherer and Scheufele 2003].

As our focus members indicated:

"I think that despite the low level of direct shopping by television, mobile and Internet in Spain, they are the shopping channels of the future and therefore will become more generally used, displacing traditional shopping channels but without totally replacing them" (18-25 years old).

"I consider that direct shopping will evolve slowly in Spain and that it will not be a threat to traditional sales channels. However, my intention is to purchase through the mobile, to a greater or lesser extent, when I am offered a product or service which meets my specific needs" (18-25 years old).

"I think that the new technologies are only necessary in critical situations (e.g. in the case of a car break down, etc…) or to improve the quality of life for people who are physically handicapped, but I don't consider their use in all aspects of daily life" (40-45 years old).

"Although sometimes I find it difficult to use the mobile, my son helps me to solve any problems which come up. For example, he downloaded my favourite tune. I think that generational change will be a driver to interactive shopping due to their constant exposure to and familiarity with the new technologies" (40-45 years old).

Hence, we hypothesise that:

H2) Young people are more predisposed to M-commerce adoption than older Internet users.

The middle classes appear to be the most receptive segment to direct sales [AIMC 2005]. However, the exclusive nature of certain products in these channels and existing consumption habits mean that it is beginning to gain special acceptance in the highest segments of the population [Liberal, 1997]. In addition, the view of other authors [Rosenberg and Hirschman 1980] should also be kept in mind. For them, the new sales systems are made for everyone, and attempt to reduce the distinctions between social classes by offering a wide variety of products and services for all consumers. In the case of the mobile phone, most of the products offered such as logos, ringtones, games, voting programs, etc, are especially attractive to the middle class segment of the population because they boost social integration. These sentiments are echoed in the following statements from our focus group members:

"I would never participate in voting TV programs because I don't think that the content of this type of program is appropriate to my lifestyle" (high-class senior manager).

"I enjoy participating in voting TV programs by sending SMS messages. I enjoy watching celebrities and sending them encouragement or criticising them with my friends" (medium-class student).

We therefore suggest that:

H3) Internet users from the middle classes are more predisposed to use the mobile as a shopping channel.

2.2. ICT Relationship

It should remembered that an influential factor in consumer attitude towards non-store shopping is exposure to technology, since it has been demonstrated that increased exposure to technology increases the probability of developing favourable attitudes towards new shopping channels [Modahl 2000]. Several authors maintain that consumers with most exposure to new technologies are those who are more willing to adopt direct channels [Bellman et al. 1999; Dholakia and Uusitalo 2002; Korgankoar and Moschis 1987; Lohse, Bellman and Johnson 2000; Modahl 2000; Sim and Koi 2002]. The increase in use and knowledge of these media will doubtless modify the norms of behaviour and response given to marketing actions [Dahlen 2002].

According to literature review, we expect Internet exposure to lead to M-shopping. The following quotes are illustrative:

"I am happy that I have got a high performance computer both at work and at home. I can play games, download music and especially, listen to ringtones which I end up buying through the mobile" (on line user).

"When the battery runs out on my mobile I send text messages by Internet" (on line user).

"My awareness of the mobile's benefits as a shopping channel has grown over a very short time, mainly due to the communication campaigns in media such as the Television or Internet (on-line user)".

"I don't understand why you don't use Internet or the mobile more in Spain to notify class changes, provide study material, to pay the registration fees, etc., like they do in Norway. Perhaps it's because here most students don't even have a laptop or because connection costs are much higher. I think that both Internet and the mobile are good information and shopping channels and their use should be encouraged at University" (individualistic culture student: Norwegian).

Hence we hypothesise that:

H4) Exposure to Internet has a positive influence on the use of the mobile as a shopping channel.

Rogers [2003] argues that "the adoption of one new idea may trigger the adoption of several others in a cluster which consists of one or more distinguishable elements of technology that are perceived as being interrelated". The technology cluster concept has been used to examine the adoption of videotext [LaRose and Atkin 1992], E-Commerce [Eastin 2002] and Mobile-Commerce [Yang, 2005]. This concept posits that consumers are likely to adopt a technology offering the same functions as those already adopted. Mobile commerce is a technology developed from computers and communication technologies so consumers who adopt cell phones, PDA, notebook computer or on-line shopping, should be more likely to adopt M-Commerce.

Finally, it should be highlighted that some prior experience with non-store shopping channels has a positive influence on the adoption of new direct shopping channels, since the consumer acquires skill in purchasing products/services with no prior physical inspection [Dholakia and Uusitalo 2002; Korgankoar and Moschis 1987; Shim and Drake 1990]. Hirschman [1980] noted that understanding of the characteristics and operation of a new product (sales channel) is needed before it can be adopted. In the context of M-commerce, it is to be expected that consumers with more experience of non-store shopping should also use M-shopping. Regarding non-store experience, the focus group members indicated:

"It is even easier to purchase through the mobile than on Internet, that's why I now use both shopping channels" (on line shopper).

"I used to buy tunes on Internet but now I buy them on the mobile" (on line shopper).

"I always prefer to buy in a traditional store because I can see and touch the products and the seller can solve any problems I might have" (non on line shopper)

"I would buy any type of product on Internet provided it cost less than through traditional channels. For example, I bought this sweater through Internet. I think the mobile is also a good tool for shopping, I'm not bothered which of the two shopping channels I use" (online individualistic student: German).

Hence, we propose that:

H5) Experience as an Internet shopper has a positive influence on the M-commerce adoption.

The following table is a summary of the literature review and the main contributions of the qualitative analysis, which support the hypotheses proposed in this study (see Table 5).

3. Methodology

In this study we examined secondary data from a survey by the Spanish Association of Electronic Commerce [AECE 2004]. The study of Electronic Commerce B2C collected information using Computer Assisted Telephone Interview (CATI) method from March to April 2004. Complete responses to the measures were obtained from a random sample of 2,104 survey participants. The population of this study was Spanish Internet users over 14 years old.

The logistic regression technique was used to test the proposed hypotheses. With this technique, data is treated with a dependent, non-metric variable, offering several advantages in comparison to discriminant analysis when the dependent variable has only two categories as in the case of the dependent variable M-commerce decision [Hair et al., 1998]. It is more robust than discriminant analysis when the assumptions of multivariate normality and equality of the variance-covariance matrixes are not fulfilled between the groups, it facilitates treatment with independent variables and the results obtained are parallel to those of multiple regression in terms of interpretation and the case by case diagnostic measurements available for residue examination.

All the variables in the analysis were measured directly. The non-store shopper's experience was measured with a dichotomous variable in which individuals indicated if they had acquired a product or service through Internet during the year 2003.

In the case of exposure to Internet and following the same criteria used in other research work [Goldsmith, 2002] frequency of Internet access (from "everyday" to "at least once a month") was considered to be a representative item for this concept, since individuals who connect more often have more experience than those users who only connect occasionally.

The dependent variable is M-shopping (purchase decision). A dichotomous scale was used to measure this with two possible categories of reply: those individuals who have acquired a product or service through the mobile and those who have never shopped through this medium.

4. Data Analysis

Firstly, a descriptive analysis of the sample was done. Then, the Chi-Square technique allowed us to test the existence of significant differences between the socio-demographic and behavioural profile of M-shopper and non M-shopper. Secondly, a logistic regression analysis was done to test the influence of consumer profile and relationship with the Internet medium on the M-shopping decision.

Table 5. Hypotheses development

Hypotheses	Literature Review	Qualitative Research Conclusions
H1: Among Internet users, men are more predisposed to M-commerce adoption than women.	Bellman et al., 1999; Brennan, 2000; Citrin, et al., 2003; Cross and Madson, 1997; Cunningham and Cunningham, 1973; Darian, 1987; Dholakia, 1999; Dholakia and Uusitalo, 2002; Donthu and García, 1999; Gillet, 1970; Hawfield and Lyons, 1998; Hoffman et al., 1995; Hofstede, 1980; Joines, Scherer and Scheufele, 2003; Korgankoar and Moschis, 1987; Li et al., 1999; Marcus and Kitayama, 1991; Markus and Oyserman, 1989; May and Greyser, 1989; Mulhern, 1997; Park and Jun, 2003; Peterson, Albaum and Ridgway, 1989; Reynolds, 1974; Reynolds and Darden, 1972; Rohm and Swaminathan, 2004; Sim and Koi, 2002; Steenkamp et al., 1999; Trocchia and Janda, 2000; Vrechopoulos et al, 2001; Wotruba and Pribova, 1995; Yang, 2005.	-
H2: Young people are more predisposed to M-commerce adoption than other Internet users.	AIMC, 2004; Bordeau et al., 2002; Darian, 1987; Joines, Scherer and Scheufele, 2003; May and Greyser, 1989; Modahl, 2000; Mulhern, 1997; Peterson et al., 1989; Rogers, 2003; Schiffman and Kanuk, 2003; Trocchia and Janda, 2000; Wotruba and Pribova, 1995.	Generational change as a driver of interactive shopping.
H3: Internet users from the middle classes are more predisposed to use the mobile as a shopping channel.	AIMC, 2004; Liberal, 1997; Rosenberg and Hirschman, 1980.	It is important to promote M-commerce using mass communication media to boost the feeling of social belonging.
H4: Exposure to Internet has a positive influence on the use of the mobile as a shopping channel.	Bellman et al., 1999; Dahlen, 2002; Dholakia and Usitalo, 2002; Korgankoar and Moschis, 1987; Lohse, Bellman and Johnson, 2000; Modahl, 2000; Sim and Koi, 2002; Steckel, 2000.	Exposure to Internet and the availability of the appropriate equipment have a positive influence on M-shopping.
H5: Experience as an Internet shopper has a positive influence on the M-commerce adoption.	Eastin, 2002; Hirschman, 1980; Korgankoar and Moschis, 1987; LaRose and Atkin, 1992; Shim and Drake, 1990; Dholakia and Uusitalo, 2002; Rogers, 2003; Yang, 2005.	Being a user of non-store shopping channels such as Internet has a positive influence on Mobile perceived ease-of-use and on M-shopping intention.

Source: Original work.

4.1. Descriptive analysis

In relation to the general characteristics of the sample, firstly it should be noted that it comprises Spanish Internet users aged 14 and over. The total sample is composed of 55.4% men and 45.4% women. In terms of analysis by age, a large percentage of the sample belongs to the age segment between 14 and 24 (32%). The middle class predominates (39.3%) and 38.6% live in the capital of the province.

A significant percentage of those interviewed used Internet very often (45.4%), it should also be noted that 23.2% have acquired some product/service through this direct shopping system (see Table 6).

Table 6. Description of the sample

Characteristic		Internet user (N = 2,104)		% of total (N = 2,104)	Chi-square
		M-purchasers (N = 585)	Non M-purchasers (N = 1,519)		
Gender	Male	53.7%	56.0%	55.4%	$\chi^2 = 0.800$; p = 0.371
	Female	46.3%	44.0%	45.4%	
Age	Between 14 and 19	38.3%	8.0%	16.4%	$\chi^2 = 421.130$ (**); p = 0.000
	Between 20 and 24	23.6%	12.5%	15.6%	
	Between 25 and 34	25.3%	31.6%	29.8%	
	Between 35 and 44	9.6%	22.6%	19.0%	
	Between 45 and 54	2.6%	16.3%	12.5%	
	Over 55	0.7%	9.0%	6.7%	
Social Class	High	14.5%	21.9%	19.8%	$\chi^2 = 31.919$ (**); p = 0.000
	Middle to High	26.3%	32.1%	30.5%	
	Middle	47.9%	35.9%	39.3%	
	Middle to low	10.3%	9.3%	9.6%	
	Low	1.0%	0.8%	0.9%	
Population density	Less than 2,000	5.8%	4.9%	5.2%	$\chi^2 = 6.891$; p = 0.331
	2,001-5,000	7.7%	6.1%	6.5%	
	5,001-10,000	8.4%	8.4%	8.4%	
	10,001-50,000	26.0%	24.6%	25.0%	
	50,001-200,000	14.7%	13.8%	14.0%	
	200,001-500,000	1.5%	2.7%	2.4%	
	Provincial capital	35.9%	39.6%	38.6%	
Internet use	Everyday	40.2%	47.5%	45.4%	$\chi^2 = 9.110$; P= 0.232
	From 3 to 6 days	26.5%	23.5%	24.3%	
	At least once a week	15.7%	14.4%	14.8%	
	At least once a month	13.3%	9.8%	10.8%	
	Less frequently	4.3%	4.8%	4.7%	
Experience of Internet shopping	Yes	25.3%	17.8%	23.2%	$\chi^2 = 13.559$; p = 0.000 (**)
	No	74.7%	82.2%	76.8%	

(**) 99% confidence level.

Comparison of the M-shopper profile with that of the non M-shopper shows that, generally, sample distribution is fairly uniform in terms of gender and population density as confirmed by the values obtained in the Chi-Square analysis ($\chi 2 = 0.800$, p = 0.371 for gender and $\chi 2 = 6.891$, p = 0.331 for area size). The results of this analysis also show that there are no significant differences between M-shopper and non M-shoppers in terms of frequency of Internet use ($\chi 2 = 9.110$, p = 0.232), as in both cases the frequency of use is very high. The only variables with significant differences are age ($\chi 2 = 421.130$, p = 0.000), social class ($\chi 2 = 31.919$, p = 0.000) and on-line shopping experience ($\chi 2 = 13.559$, p = 0.000).

It should be emphasised that the main users of this system are young people, since, generally, the data shows that 61.9% of shoppers are young people between 14 and 24. The least representative group of shoppers is that of interviewees over 45 years old (3.3%). The main reason for this may well be the lack of use and familiarity with the new technologies. In terms of social class, Internet users are mainly from the upper and upper middle classes.

A significant number of M-shoppers and non M-shoppers use Internet to purchase products/services (23.2%), but the percentage of M-shoppers (25.3%) who use this system for commercial transactions is higher.

In terms of product typology (see Table 7), the products most often purchased by Spanish Internet users are Ring tones (22.1%), logos (14.1%) and songs (8.3%). However, they are also beginning to buy some videos (0.9%) and other services such as horoscopes, chats (2.0%).

Table 7. Products purchased by Mobile

		(N = 2,104)
Products purchased	Logos	14.1%
	Ringtones	22.1%
	Songs	8.3%
	Videos	0.9%
	Others (horoscopes, chats)	2.0%
	Not purchased	72.2%

Source: AECE [2004]

In general they are goods of search, intangible and low cost and this result is coherent with the conclusions of the study by Girard, Silverblatt and Korgankoar [2002] who state that search goods will be the most successful in non-store selling channels as they are those for which the perceived purchase risk is lower. It should also be noted that it is likely that the important promotional campaigns on television over recent years for this group of goods has contributed towards generalising acceptance among consumers.

The focus group has also confirmed these results as can be seen from participants' comments:

"I buy ringtones and logos on the mobile because they are in fashion, they aren't expensive and I know exactly what I'm going to get."

"I sometimes use the mobile to participate in TV voting programmes provided it's not too expensive"

4.2. Logistic regression

A logistic regression was used to test the proposed hypotheses. For the regression, Mobile shopper was coded as a dichotomous variable including Internet users who had purchased anything by mobile (n=585) against those who said they had never purchased through this channel (n=1,519). Independent variables included the factors of Gender, Age, Social class; Internet usage patterns and Online buying behaviour (see Table 9).

Given that all the model's independent variables, except for age, are categorical, an adaptation procedure is required before including them in the model. Table 8 shows how the fictitious variables were designed and codified

Table 8. Design variables for the logistic regression analysis

Original variable	Design variables			
ONLINE EXPOSURE (EXP)	EXP1	EXP2	EXP3	EXP4
Every day of the week (EXP1)	1	0	0	0
3 to 6 days a week (EXP2)	0	1	0	0
At least 1 day a week (EXP3)	0	0	1	0
At least once a month (EXP4)	0	0	0	1
ONLINE PURCHASE (PURCHASE)	PURCHASE1			
Has purchased on Internet	1			
Has never purchased on Internet	0			
STATUS	STATUS1	STATUS2	STATUS3	STATUS4
Upper class (STATUS1)	1	0	0	0
Middle to upper class (STATUS 2)	0	1	0	0
Middle class (STATUS 3)	0	0	1	0
Middle to Lower class (STATUS 4)	0	0	0	1
GENDER	GEN1			
Man	1			
Woman	0			

Table 9. Logistic Regression for predicting membership of Mobile Shopping groups

Variable	Beta Coef	Std. Error	Wald	Sig	Exp(B)
AGE	-.101	.006	270.678	.000	.903
GENDER	.075	.111	.449	.503	1.077
PURCHASE	.183	.143	1.632	.049	1.201
EXP			3.292	.510	
EXP(1)	-.360	.289	1.554	.213	.697
EXP(2)	-.259	.292	.786	.375	.771
EXP(3)	-.407	.304	1.797	.1480	.665
EXP(4)	-.148	.312	.225	.635	.862
STATUS			15.380	.004	
STATUS (1)	-.111	.552	.040	.841	.894
STATUS (2)	.098	.544	.032	.857	1.102
STATUS (3)	.384	.540	.508	.476	1.468
STATUS (4)	-.156	.558	.078	.780	.855
INTERCEPT	2.356	.328	51.545	.000	10.553

It can be seen that only the regression coefficients for the variables age, status and experience as Internet shopper are statistically significant ($p<0.05$), judging by the Wald statistic (W_K).

These results suggest that there is a greater likelihood of M-commerce when the shopper has more experience of shopping by Internet. This conclusion can also be reached by verifying that this variable has the greatest significant eigenvalue (1.201). Thus, to have e-shopping experience increases the likelihood of M-purchase by 20.10%, when the other independent variables remain constant.

Furthermore, it should be noted that M-shopping likelihood is less when the person is older and comes from a lower social class. This is also indicated by the significant values (0.903 and 0.806[1] respectively) obtained in the corresponding Exp (B) and the negative eigenvalues. With respect to the variables gender and Internet usage, the coefficients associated to the regression considered offer non significant values.

According to these results we cannot state that, in relation to M-commerce, hypotheses H1, H3 and H4 are supported. However, we can state that hypotheses H2 and H5 in this study are totally supported (see Table 10).

Table 10. Research hypotheses

Hypotheses	
Among Internet users, men are more predisposed to M-commerce adoption than women.	H1: Not Supported
Young people are more predisposed to M-commerce adoption than other Internet users.	H_2: Supported
Internet users from the middle classes are more predisposed to use the mobile as a shopping channel.	H3: Not Supported
Exposure to Internet has a positive influence on the use of the mobile as a shopping channel.	H4: Not Supported
Experience as an Internet shopper has a positive influence on the M-commerce adoption.	H5: Supported

[1] This Exp (B) is the inverse neperian logarithm of the Beta coefficient for the low social class. The Beta value in this category is not shown by SPSS but it has been calculated by adding up the B coefficients and changing the sign of the result: - (-0.111+0.098+0.384-0.019)= -0.215

Having checked the statistical significance of the estimated logistic regression coefficients, we proceed to verify the overall significance of the model (see Table 11).

Table 11. Omnibus tests on model coefficients

	Chi-Square	df.	Sig
Step	437.613	11	0.000
Block	437.613	11	0.000
Model	437.613	11	0.000
-2 likelihood log	-2LL0: 2049.712 -2LL1: 1856.326		

The Chi-Square value of the empirical model shows a value of 437.613, with 11 degrees of freedom and a significance of 0.000. This value is greater than the value of the corresponding theoretical model both in level of significance of 0.05 and of 0.01 (Chi-Square value equals 429.82 and 435.21 respectively), and is therefore statistically significant. In addition, the value "-2LL" has reduced, which verifies the fact that this model provides a better fit than the model which only contains the constant.

Given the high sample size we have also obtained a good fit of the Chi-Square test with Hosmer and Lemeshow (see Table 12).

Table 12. Hosmer and Lemeshow's Chi-Square Test

Chi-Square	df.	Sig
13.021	8	0.111

The analysis gives an empirical Chi-Square value equal to 13.021, with 8 degrees of freedom, an empirical value which is below the theoretical value for a significance level of 0.05. Its significance is exactly 0.111. This value restricts the possibility of rejecting the null hypothesis (H0: There are no differences between the observed and anticipated values from the regression model), which in this case is desirable. The model appears to fit the data reasonably well as no important differences between the observed and predicted values have been found. It may be stated therefore, that model fit is good.

In addition to checking the overall fit of the model, it is also important to check its predictive efficiency, since the model could show an appropriate fit (such that it would be accepted) while its predictive efficiency could be lacking. This predictive efficiency has been checked using the classification tables, also known as prediction tables, which provide information on the percentage of cases which have been correctly classified by the estimated model (see Table 13).

Table 13. Classification Table

	Forecast		
Observed	Yes purchase	No purchase	Percentage correct
Yes purchase	239	346	40.9
No purchase	129	1390	91.5
Overall percentage			**77.4**

[a]. The cut-off value is 0.500

In particular, 1,629 (239+1,390) cases were correctly classified by the predictive model, as the observed response coincided with the forecast. However, 475 (129+346) cases were not correctly classified. The percentage of correct results was 77.4% and the percentage of error 22.6%. The results obtained suggest that this logistic regression model can be considered to be predictive.

5. Conclusions

This paper presents an in-depth study of the purchase decision using the mobile phone. The mobile phone system is currently a new communication channel which is becoming increasingly personalised and is recognised as an excellent interactive marketing tool with which companies can complement actions carried out in other communication media [Buellingen and Woerter 2004; Yang 2005]. For many Spanish companies it has become a new direct distribution network for products/services [Netsize 2004].

We consider that this research makes two main contributions in the academic field. Firstly, it presents an approximation to the M-shopper profile which is significant given the lack of literature available in this field. Secondly, it identifies some predictive variables of M-commerce.

We can describe the profile of the M-shopper as men (53.7%) and women (46.3%), aged between 14 and 24 (61.9%), middle class (47.9%) and mainly resident in provincial towns (64.1%). These individuals have high levels of exposure to the new technologies such as Internet (40.2% everyday), a medium which they also use for shopping (25.3%). Intangible, low cost products such as logos and ringtones are the most popular. The Spanish M-shopper's profile is very similar to that in other European countries, since this type of shopper is generally described as young and of either gender. They also show similar characteristics in terms of applications and contents, with emphasis on the demand for personalisation services such as logos, images and ringtones in all countries [Netsize 2004].

The logistic regression analysis on the set of variables analysed has highlighted the fact that age, social class and experience of Internet shopping are the variables which best predict M-commerce behaviour. Gender and frequency of Internet use have not turned out to be determinant factors in the purchase decision.

The possible differences due to gender in M-shoppers (and all virtual environments in general) tend to disappear as a consequence of changes in social habits and in the greater level of introduction and development of the new technologies [Modahl 2000; Siegel 2003]. Thus, the findings of this study confirm the results of other research [Modahl 2000; Rosenberg and Hirschman 1980] which highlights the fact that women are becoming increasingly familiar with virtual environments and that Internet use is becoming more and more widespread [AIMC 2005; Siegel 2003].

Internet exposure is not found to positively predict consumer's M-commerce decision. A plausible explanation may be attributed to respondent homogeneity because all participants are Internet users. Another explanation may be that consumers use Internet as an information channel but not for their shopping and therefore it is possible that exposure to Internet increases their tendency to use the mobile as a communication, but not a shopping channel. Therefore, exposure to Internet is a necessary but not sufficient condition for M-shopping.

Making Internet purchases does have a significant influence on the M-commerce decision. These findings are consistent with previous studies using the technology cluster concept that concludes "the adoption of new communication technologies is best predicted by the adoption of functionally similar technologies and user perception toward them" [Rogers 2003; Yang 2005]. Consumers who have purchased a product or service through Internet have broken the barriers to non-store shopping and therefore are more predisposed to M-shopping.

Thus, the priority segment for companies to consider when launching their marketing campaigns should be that of young people, both men and women, preferably with experience of Internet shopping and from the middle class or above. According to our results not only do young internautas use mobile phones more but they have also been more in contact with new technologies from an early age, so their levels of exposure are much higher than those of the other segments of the population. In addition, they show the most positive attitude towards innovation and change and thus are more willing to accept new services and contents offered by the different mobile phone operators. They are definitely the group with the most favourable attitudes towards the direct shopping channels.

The mobile phone market is reaching maturity in practically every country. Currently 8 out of 10 people have a mobile phone and the penetration rate is over 100% in some countries such as Sweden and Italy. Countries such as Japan, Korea or the EU are already in a more advanced phase of growth, leading towards the creation of new added value services using 3G technologies [Netsize 2004]. There are currently 36 million mobile Spanish users with a penetration rate of 86%. To maintain interest in these new technologies and overcome the levels of saturation and/or stagnation reached over the last two years, Spanish companies should be able to offer new, innovative services and contents with added value to complement those which are already on offer, since may companies have failed due to the lack of services and contents of interest to the user. They should offer their users the chance to try out new interactive applications, multimedia and faster connections and also reinforce present mobile services which presumably will help to improve the user's quality of life, both personally and professionally. Thus, the mobile phone has to be capable of satisfying the need for information, communication, personalisation, entertainment, convenience and efficiency, in addition to becoming an alternative shopping channel.

One of the advantages of mobile terminals is that the message recipient can be contacted during leisure times and at times and in situations where it would not be possible to reach him with other methods [Balasubramanian, Peterson and Jarvenpaa 2002]. It is therefore the perfect medium for the consumer to receive instantaneous information in the form of short messages adapted to individual requirements [Buellingen and Woerter 2004; Dholakia and Dholakia 2004]. One of the main benefits of the M-commerce would be the development of the mobile locator [Figge 2004; González 1999], which would make it possible to send the individual the messages he needs according to his geographical location (for example: at lunch time he could receive offers from the nearest restaurants).

There is no doubt that the success of this new direct sales channel will be conditioned by both the group of product/service offered and their cost, since the focus groups and previous studies [Netsize 2004] show that the products/services most acquired by users of these systems are those which are in fashion and offer the least perceived purchase risk.

In terms of the limitations of this study, the data analysed is based on secondary information sources and for this reason there are complementary aspects not included in the questionnaire which we think would be interesting to analyse. Specifically, the consideration of attitudinal variables such as motivations and barriers on the M-purchase decision. For this reason, and bearing in mind the lack of research in this field, we think it would be very useful to complement this study with the development and validation of a scale to measure M-commerce motivations and perceived risk. Furthermore, the use of secondary information sources has limited the measurement of some of the variables such as Internet exposure. It would have been interesting to be able to consider both frequency of use and the length of time spent on-line. Another limitation is sample homogeneity, as the population were all Internet users. Therefore we are considering as a line of research, to propose and empirically test a general model of M-commerce behaviour to be applied to a sample of Internet and non Internet users. A further limitation is that currently M-products and services are low cost entertainment products so they fit perfectly with young people's lifestyle. For this reason, although the present study analyses the profile of the consumer willing to acquire M-products and services, it would be useful to repeat the study when there is a wider range of products and services available to see whether the results remain valid.

As revealed in the group meetings, the consumer's cultural background is one of the aspects which can influence the creation of a favourable climate for developing and consolidating electronic transactions. [Jarvenpaa et al. 1999; Park and Jun 2003; Steenkamp et al. 1999; Van Birgelen et al. 2002]. For this reason, we consider that another interesting line of research would be to contrast the validity of the proposed behavioural model with samples of consumers from other cultures and compare the results obtained.

REFERENCES

AECE (Spanish Association of Electronic Commerce), "Estudio sobre Comercio Electrónico B2C 2004", http://www.aece.es, 14.02.2004.

AIMC (Research Communication Media Association), "Navegantes en la Red. VI Encuesta AIMC a Usuarios de Internet", http:// www.aimc.es, 30.11.04.

AIMC (Research Communication Media Association), "Navegantes en la Red. VII Encuesta AIMC a Usuarios de Internet", http:// www.aimc.es, 15.03.05.

Balasubramanian, S., R. A. Peterson, and S. L. Javenpaa, "Exploring the implications of M-Commerce for markets and marketing", *Journal of the Academy of Marketing Science*, Vol. 30, No. 4:348-361, 2002.

Barnes, S.J., "The mobile commerce value chain: Analysis and future developments", *International Journal of Information Management*, Vol.22: 91-110, 2002.

Bellman, S., G. Lohse and E. Johnson, "Predictors of online buying behaviour", Communications of the ACM, Vol.42, No.12:32-38, 1999.

Bordeau, L., J. Chebat and C. Couturier, "Internet consumer value of university students: E-mail versus Web users", *Journal of Retailing and Consumer Services*, Vol. 9, No. 2: 61-69, 2002.

Brennan, D., "Placing the consumer centre screen: a view from the inside", *International Journal of Advertising*, Vol. 19, No.5:625-644, 2000.

Buellingen, F. and M. Woerter, "Development perspectives, firm strategies and applications in mobile commerce", *Journal of Business Research*, Vol.57, No.12:1402-1408, 2004.

Chiles, T. H. and J. F. McMackin, "Integrating variable risk preferences, trust, and transaction cost economics", *Academy of Management Review*, Vol. 21: 73-99, 1996.

Citrin, A., D. Stern, E. Spangenberg and M. Clark, "Consumer need for tactile input. An Internet retailing challenge", *Journal of Business Research*, Vol.56, No.11:915-922, 2003.

Coursaris, C. and K. Hassanein, "Understanding M-commerce. A consumer-centric model", *Quarterly Journal of Electronic Commerce*, Vol.3, No.3: 247-271, 2002.

Crabtree, B. F. and W. Miller, *Doing Qualitative Research.* Sage: Newbury Park, 1992.

Cross, S. and L. Madson, "Models of the self: self-constructuals and gender", *Psychological Bulletin*, Vol. 122:5-37, 1997.

Cunningham, I. and W. Cunningham, "The urban in-home shopper: Socio-economic and attitudinal characteristics", *Journal of Retailing*, Vol. 49, No.1:42-57, 1973.

Dahlen, M., "Learning the web: Internet User Experience and Response to Web Marketing in Sweden", *Journal of Interactive Advertising*, Vol.3, No.1, http://www.jiad.org/vol3/no1/dahlen/index.html, 2002.

Darian, J., "In home shopping: Are there consumer segment?", *Journal of Retailing*, Vol. 63, No.2:163-186, 1987.
Davis, F., "Perceived usefulness, perceived ease of use and user acceptance of information technology" *MIS Quarterly*, Vol.13, No. 3:319-340, 1989.
Davison, W., T. Dorrington and N. McCoy, *Electronic shopping: The consumer views*. Management Horizons: Columbus: Ohio, 1982.
De Ruyter, K. and N. Scholl, "Positioning Qualitative Market Research: from Theory and Practice", *Qualitative Market Research: an International Journal*, Vol.1, No.1:7-14, 1998.
Dholakia, R. and O. Uusitalo, "Switching to Electronic Stores: Consumer Characteristics and the Perception of Shopping Benefits", *International Journal of Retail and Distribution Management*, Vol.30, No.10:459-469, 2002.
Dholakia, R., "Going shopping: key determinants of shopping behaviours and motivations", *International Journal of Retail and Distribution Management*, Vol. 27, No. 4:.154-165, 1999.
Dholakia, R. R. and N. Dholakia, "Mobility and markets: Emerging outlines of M-commerce", *Journal of Business Research*, Vol.57: 1391-1396, 2004.
Donthu, N. and A. Garcia, "The Internet shopper", *Journal of Advertising Research*, Vol. 39, No. 2: 52-58, 1999.
Eastin, M., "Diffusion of E-commerce: An analysis of the adoption of four E-commerce activities", *Telematics and Informatics*, Vol.19:251-267, 2002.
Eastlick, M. and S. Lotz, "Profiling potential adopters and non-adopters of an interactive electronic shopping medium", *International Journal of Retail & Distribution Management*, Vol. 27, No. 6:209-223, 1999.
Epaynews.com, "Statistics for mobile commerce", http://www.epaynews.com/statistics/mcommstats.html, 9.03.04.
Eroglu, S., K. Machleit and L. Davis, "Empirical testing of a model of online store atmospherics and shopper responses", *Psychology and Marketing*, Vol.20, No.2: 139-150,2003.
Figge, S., "Situation-dependent services: A challenger for mobile network operators", *Journal of Business Research*, Vol.57: 1416-1422, 2004.
Gerstheimer, O. and C. Lupp, "Needs versus technology: The challenge to design third-generation mobile applications", *Journal of Business Research*, Vol.57: 1409-1415, 2004.
Gilbert, D., L. Lee-Kelly and M. Barton, "Technophobia, gender influences and consumer decision-making for technology-related products", *European Journal of Innovation Management*, Vol.6, No. 4: 253-263, 2003.
Gillet, P., "A profile of urban in-home shoppers", *Journal of Marketing*, Vol. 34:42-49, July 1970.
Girard, T., R. Silverblatt and P. Korgankoar, "Influence of Product Class on Preference for Shopping on the Internet", *Journal of Computer Mediated Communications*, Vol. 8, No. 1, http://www.ascusc.org/jcmc/vol8/issue1/girard.html, 2002.
Goldsmith, R., "Explaining and Predicting Consumer Intention to Purchase Over the Internet: An Exploratory Study", *Journal of Marketing*, Vol.66:22-28, Spring 2002.
González, C., "Impact of perceived legibility and perceived stimulation of electronic catalogues on consumer satisfaction", 28th EMAC Conference, Berlin, 1999.
Hair, J., R. Anderson, R. Tatham and W. Black, *Multivariate Data Analysis with Readings*, Prentice-Hall, Upper Saddle River, NJ, 1998.
Hawfield, K. and E. Lyons, "Conventional wisdom about women and Internet use: refuting traditional perceptions", http: //www.2000.ogsm.vanderbilt.edu/student.projects/women/conventional_wisdom.htm, 1998.
Hirschman, E., "Innovativeness, novelty seeking and consumer creativity", *Journal of Consumer Research*, Vol.7, No. 3:283-295, 1980.
Hoffman, D., T. Novak and P. Chatterjee, "Commercial Scenarios for the Web: Opportunities and Challenges", *Journal of Computer Mediated Communications*, Vol.1, No.3, http://www.ascusc.org/jcmc/vol1/issue3/ hoffman, 1995.
Hofstede, G., *Culture's consequences: International differences in work relates values*. Sage Publications: Newbury Park (CA), 1980.
Hung, S.Y., C. Y. Ku and C. M. Chang, "Critical factors of WAP services adoption; an empirical study", *Electronic Commerce Research and Applications* Vol.2, No.1: 42-60, 2003.
Jarvenpaa, S., N. Tractinsky, L. Saarinen and M. Vitale, "Consumer Trust in an Internet Store: a cross cultural validation" *Journal of Computer Mediated Communications*, Vol. 5, No. 2, http://www.ascusc.org/jcmc/vol5/issue2/jarvenpaa.html, 1999.
Joines, J., C. Scherer and D. Scheufele, "Exploring Motivations for Consumer Web use and their implications for E-commerce", *Journal of Consumer Marketing*, Vol.20, No. 2:90-108, 2003.
Korgaonkar, P. and G. Moschis, "Consumer adoption of videotext services", *Journal of Direct Marketing*, Vol.1: 63-71, 1987.

Kumar, K. and C. Zahn, "Mobile communications: Evolution and impact on business operations", *Technovation*, Vol.23: 515-520, 2003.

Larose, R. and D. Atkin, "Audio text and the reinvention of the telephone as mass medium", *Journalism Quaterly* Vol.69:413-421, 1992.

Lehrer. M., "National lead markets and the design competition for 3G network applications", *Journal of Business Research*, Vol.57: 1397-1401, 2004.

Leung, K. and J. Antypas, "Improving returns on M-commerce investment", *Journal of Business Strategy*, Vol.22, No. 5: 12-14, 2001.

Li, H., C. Kuo and M. Russell, "The Impact of perceived Channel Utilities, Shopping Orientations, and demographics on the Consumer's Online Buying Behaviour", *Journal of Computer Mediated Communications*, Vol.5, No.2, http://www.ascusc.org/jcmc/vol5/issue2/hairong.html, 1999.

Liberal, J., "La venta directa facturó 184.000 millones en 1996", *Super Aral Lineal*, No.1340:68-70, June, 1997.

Lohse, G. L. and P. Spiller, "Electronic shopping" Communications of the ACM, Vol.41, No. 7: 81-87, 1998.

Lohse, G., S. Bellman and E. Johnson, "Consumer buying behaviour on the Internet: findings from panel data", *Journal of Interactive Marketing*, Vol.14, No.1:15-29, 2000.

Lu, J., C. Yu, C. Liu and J. Yao, "Technology acceptance Model for wireless Internet", *Internet Research: Electronic Networking Applications and Policy*, Vol. 13, No. 3:206-222, 2003.

Luarn, P. and H. H. Lin, "Toward and understanding of the behavioural intention to use mobile banking", *Computers in Human Behaviour*, http://www.elsevier.com, 2004.

Markus, H. and S. Kitayama, "Culture and the self: implications for cognition, emotion and motivation", *Psychology Review*, Vol. 98:224-252, April 1991.

Markus, H. and D. Oyserman, "Gender and thought: the role of the self-concept" in Cradfort, M and Gentry, M. Eds. Gender and thought: psychological perspectives. Springer-Verlag: New York, pp. 100-127, 1989.

May, E. and S. Greyser, "From-home Shopping: Where is It Leading?" in Pellegrini, L. Reddy, S., Retail and Marketing Channels-Economic and Marketing Perspectives on Producer-Distributor Relationships. Routledge: London, 1989.

Modahl, M., *Now or never*. Harper Collins: New York, 2000.

Mulhern, F., "Retail Marketing: From distribution to integration" International, *Journal of Research in Marketing*, Vol.14, No.2:103-124, 1997.

Netsize, *Developing the multimedia mobile market*, The Netsize guide, pp.1-81, 2004.

NG-Kruelle, C., P. A. Swatman and D. S. Rebne, "The price of convenience: Privacy and mobile commerce", *Quarterly Journal of Electronic Commerce*, Vol.3, No. 3:273-285, 2002.

Park, C. and Y. Kim, "Identifying key factors affecting consumer purchase behaviour in an online shopping context", *International Journal of Retail and Distribution Management*, Vol.31, No. 1:16-29, 2003.

Peterson, R. A., G. Albaum and N. M. Ridway, "Consumer who buy from direct sales companies", *Journal of Retailing*, Vol.65, No.3:273-286, 1989.

Reynolds, F. and Darden, W., "Intermarket patronage: A psycho graphic study of consumer out shoppers", *Journal of Marketing*, Vol. 36:50-54, April 1972.

Reynolds, F., "An analysis of catalogue buying behaviour", *Journal of Marketing*, Vol. 38:48-56, July 1974.

Reynolds, J., "ECommerce: a critical review", *International Journal of Retail and Distribution Management*, Vol. 28, No.10:417-444, 2000.

Rogers, E. M., *Diffusion of Innovations* (Fifth Ed.), The Free Press: New York, 2003.

Rohm, A. and V. Swaminathan, "A typology of online shoppers based on shopping motivations", *Journal of Business Research*, Vol. 57, No.12:748-757, 2004.

Rosenberg, L. and E. Hirschman, "Retailing without stores", *Harvard Business Review*, Vol. 58, No.4:103-112, 1980.

Schiffman, L. and L. Kanuk, *Consumer Behaviour (8th Ed.)*. Prentice Hall: New Jersey, 2003.

Sharma, A. and J. Sheth, "Web-based marketing. The coming revolution in marketing thought and strategy", *Journal of Business Research*, Vol. 57: 696-702, 2004.

Sheth, J., "Emerging trends for the retailing industry", *Journal of Retailing*, Vol. 59, No.3:6-18, 1983.

Siegel, C., *Internet Marketing: Foundations and Applications*. Houghton Mifflin Company: Boston, 2003.

Sim, L. and S. Koi, "Singapore's Internet shoppers and their impact on traditional shopping patterns", *Journal of Retailing and Consumer Services*, Vol.9, No.2:115-124, 2002.

Sivanad, C., M. Geeta and M. Sulep, "Barriers to mobile Internet banking services adoption: an empirical study in Klang Valley of Malaysia", *Internet Business Review* , Vol.1:1-17, October, 2004.

Srinivasan, S., R. Anderson and K. Ponnavolu, "Customer loyalty in e-commerce: an exploration of its antecedents and consequences", *Journal of Retailing*, Vol. 78, No.1:41-50, 2002.

Steckel, J., "On-line shopping: how many will come to the party? And when they will get there?" *Working paper, Stern School of Business*, New York University: New York, 2000.

Steenkamp, J., F. ter Hofstede and M. Wedel, "A cross-national investigation into the individual and national antecedents of consumer innovativeness", *Journal of Marketing*, Vol. 63:55-69, April 1999.

Swaminathan, V., E. Lepkowska-White and B. Rao, "Browsers or Buyers in Cyberspace? An Investigation of Factors Influencing Electronic Exchange", http://www.ascusc.org/jcmc/vol5/issue2/swaminathan.html, 1999.

Szymanski, D. M. and R. T. Hise, "E-Satisfaction: An initial examination", *Journal of Retailing*, Vol. 76, No. 3: 309-322, 2000.

Telecommunications Market Commission (TMC) "Informe anual 2002", http://www.cmt.es (2.04.03).

Thomphson, I., "New direct channels" in Home Shopping: The Revolution in Direct Sales, Thomson: England, pp. 23-40, 1997.

Trocchia, P. and S. Janda, "A phenomenological investigation of Internet usage among older individuals", *Journal of Consumer Marketing*, Vol.17, No.7:605-616, 2000.

Van Birgelen, M., K. De Ruyter, A. De Jong and M. Wetzels, "Customer evaluations of alter-sales service contact modes: an empirical analysis of national culture's consequences", *International Journal of Research in Marketing*, Vol.19:43-64, 2002.

Vrechopoulos, A., G. Siomkos and G. Doukidis, "Internet shopping adoption by Greek consumers", *European Journal of Innovation Management*, Vol.4, No.3:142-152, 2001.

Wireless Week, Wireless Week 2004, Buying numbers:30, 2004.

Wotruba, T. and M. Privoba, "Direct selling in an emerging market economy: A comparison of central Europe with the U.S." in T. Wotruba, Proceedings of the International Academic Symposium on Direct Selling in Central and Eastern Europe, Direct Selling Education Foundation: Washington, DC, pp. 87-193, 1995.

Wu, J.H. and S. C. Wang, "What drives mobile commerce?. An empirical evaluation of the revised technology acceptance model", *Information & Management*, http://www.elsevier.com, 2004.

Yang, K.C., "Exploring factors affecting the adoption of mobile commerce in Singapore" *Telematics and Informatics*, http://www.sciencedirect.com/science, (14.01.05).