Interaction channel choice in a multichannel environment, an empirical study

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Abstract

Purpose – The purpose of this paper is to investigate consumer channel preferences and the motives that induce consumers to use a particular channel in a context of multichannel contact.

Design/methodology/approach – This paper analyses some factors that influence consumer behaviour in channel selection through an empirical study in the financial sector. Some hypotheses are presented and tested.

Findings – The paper reveals the influence of some variables (perceived convenience, social relationships, knowledge of channel and privacy) on the channel selected (counter, ATM or internet) for the performance of certain operations with the company.

Research limitations/implications – To generalise these findings this study needs to be replicated in other geographical areas and companies.

Practical implications – The multichannel contact centre is one of the fundamental pillars of customer relationship management. It is not enough simply to have the necessary technology (hardware, software and telecommunications). Companies must investigate consumer channel preferences and the motives that induce consumers to use a particular channel.

Originality/value – This study is a reflection on the new environment of the relationship between companies and their clients due to the influence of new information and communication technologies. In this new context, knowledge of the consumer is as necessary as knowledge of the technology.

Keywords Channel relationships, Relationship marketing, Customer relations, Internet, Banking, Spain

Paper type Research paper

Introduction

The development of communication and information technologies has encouraged the emergence of new communication channels that have enhanced the options available to businesses for building relationships with clients: for communication activities, customer distribution, customer satisfaction control, post-sale service, etc. Nowadays simultaneous use of various channels is increasingly more important, which gives rise to the need for a multichannel contact strategy for clients. Barrutia (2002) asserts that businesses should seek a multichannel configuration that provides "channel advantages", because each channel presents some differential strengths, but at the same time presents limitations and complications, in this way, the use of a single channel limits performance in the market to what that channel is capable of doing particularly well. Likewise, desires and different expectations from clients can require different information and contact strategies (Johnson and Greco, 2003).

Offering products to clients through various channels will become more common because of the pressure to have online presence that many businesses have experienced. Many businesses abandon their monochannel business models in favour of multichannel strategies in which the operations carried out in the store are tied to electronic commerce operations, catalogue sales and "call centres". If current trends are in any way indicative, the reliance on a single channel is likely to be the exception rather than the rule (Haydock, 2000; Cruz, 2000; Black *et al.*, 2002; Schoenbachler and Gordon, 2002). Under these circumstances, we should keep in mind that online activities cannot be planned individually, but they should be considered in the most extensive context for marketing activities carried out in conjunction with conventional marketing channels (Peterson *et al.*, 1997).

The multichannel strategy favours complementariness and the development of synergies between the different channels activated by the company, so the various stages of the purchase process can be done using one channel and the rest using other channels. An example that corroborates this is that contributed by Merrick (2000), who discovered that more than one-third of American buyers of second hand vehicles use the internet at some point during the purchase process.

Before companies develop multichannel strategies, they must understand the criteria consumers use to choose between available channels and the circumstances under which one channel might be preferred over the rest (Black *et al.*, 2002). Understanding the factors that will lead consumers to purchase from one channel rather than another gives increasingly important input to channel design and management (Balasubramanian, 1998). In this sense Nicholson *et al.* (2002) sought to understand why consumers sometimes select certain specific ways of purchasing. But channel selection has received relatively little attention in the literature on distribution channels; instead researchers have focused mainly on understanding and analyzing channel design and management. As for research into consumer behaviour, when looking at channel selection this type of research has fundamentally been centred on the problem of store choice (Black *et al.*, 2002).

Rangaswamy and Bruggen (2005) investigated what types of people have a greater tendency to buy from various channels, why and in what circumstances they prefer one channel over another, and what factors incite or dissuade them in the process. For Balasubramanian *et al.* (2005) consumers show a more complex purchase behaviour in the emerging multichannel environment. A deeper knowledge is needed about how, when, and why consumers choose some specific channels when they buy. According to Kumar and Venkatesan (2005), the academic literature contains very little empirical research into the characteristics of the consumer and the factors associated with the supplier with regard to multichannel purchasing.

This research looks into the influence of certain variables on consumer channel selection when it is made in a multichannel contact environment. Specifically into whether individual variables (desire for privacy and social relations) and channel variables (knowledge and convenience of the channel) influence the customer's selection of the personal or non-personal channel. The multichannel environment is characterised by the possibility that the consumer can select the channel, the company previously having developed a contact strategy to make different interaction channels

available to its clients. We must remember that research into this subject is very scarce, and there are very few theoretical and empirical studies.

In this paper, the main theoretical background is first reviewed. Then, four hypotheses based on previous qualitative studies are stated. In order to test these hypotheses, empirical research was carried out in the banking industry. Afterwards the results are discussed. Finally the paper ends by stating the conclusions, and discussing its business implications, limitations and possibilities for future research.

Multichannel strategy

With a multichannel strategy, clients have alternative ways of interacting with a business. As an alternative to the traditional service delivery (face to face), companies are using "voice to voice" (toll-free telephone support) and "bit to bit" (online service delivery) modes, as well as combinations thereof, to deliver their service (Wiertz *et al.* 2002). Rangaswamy and Bruggen (2005) define multichannel marketing as the marketing strategies for reaching clients who use more than one channel to interact with businesses. This strategy has received different denominations such as "click and brick" (Nicholson *et al.*, 2002) or "clicks and mortar" (Katros, 2000).

Multichannel marketing is not equivalent to traditional marketing of multiple channels, in which a company interacts with different segments of clients through different channels. In multichannel marketing, clients can use alternative channels at their discretion and have the option of changing channels whenever they want (Rangaswamy and Bruggen, 2005). Similarly, Payne and Frow (2004) define the multichannel strategy as the use of the full range of commercially viable channels to serve customers, and the integration of those channels without attempting to influence the channel that the customer wishes to use. The conceptual difference from the classical marketing of multiple channels is in the freedom of channel selection and the lack of obligation to use channels previously designed to reach a determined segment. Besides, the multiple channel strategy focuses on product distribution, while the multichannel strategy has a more extensive perspective that focuses on any interaction with the client and is therefore a fundamental element in the relationship marketing.

An essential factor of the multichannel strategy is the coordination of channels. According to Steinfield *et al.* (2002), buyers may move from one channel to another at different stages of a single transaction. When truly integrated channels are provided, many paths are possible, including movement between physical and virtual channels at the same stage in the process. For Windham (2000) there are many combinations that consumers may wish to use when deciding on a specific purchase.

Nicholson *et al.* (2002) demonstrate in their study that multichannel strategies encourage multichannel purchase behaviour and develop consumer inventiveness to combine and integrate available channels. Consumers want to use different media in the purchase process. They positively value the possibility of internet use to compare prices, promotions, and stock in the nearest store. They appreciate having the option of buying online and of picking up the product in the nearest store, of buying in the store and having the merchandise delivered to their house or of returning merchandise to the store or through the mail. In this sense, the internet is not a replacement for physical stores, but a very valuable complement. Retailers must explore how to better employ

technology to help consumers progress through the stages of the purchase process (Burke, 2002; Strauss *et al.*, 2003).

In this context, one business objective is to distribute resources through a combination of channels to satisfy clients and to maximise benefits. Therefore, understanding what drives customers' relative evaluations and use of alternative channels is an important first step in creating complementary synergies across the expanding range of channel formats (Montoya-Weiss *et al.*, 2003).

Channel selection

Scientific literature on multichannel strategies is very scarce. Black *et al.* (2002) report that the greater part of the research on distribution channels has focused on the adoption of new channels as an alternative to the existing ones. For example, Jasper and Ouellette (1994) examined the impact of the different forms of perceived risk and the tendency to seek information in the direct purchase of clothes. Eastlick and Liu (1997) studied television purchases and their attributes, while Gehrt and Yale (1996) explored the importance of convenience as a determiner for choosing to purchase by catalogue. Subsequently, Liang and Huang (1998) developed a model based on transaction prices to explore the degree to which the internet can be accepted as a distribution channel for a collection of products that included books, shoes, toothpaste, microwaves and flowers. Nicholson *et al.* (2002) analysed five dimensions of the situational influences applied to the multichannel purchase: physical, social, temporary perspective, definition of task, and state. Burke (2002) found that the majority of consumers expressed a preference for using multiple channels when shopping although the study reveals that different media can play different roles in the stages of the purchase process. Consumers prefer to use media that represent the characteristics of the specific products that they are buying. In a study carried out by Schoenbachler and Gordon (2002) the authors sought to understand multichannel customers and their motivation for buying through a single channel or through various. The main factors they discovered were perceived risk, past experience with direct marketing, the motivation to buy through one channel, the category of product/service and the design of the web site.

In the financial services sector, multichannel strategies have been employed for a long time. Although scarce, there have been some scientific studies carried out in the retail banking field. Even though channel selection is a central theme in the financial services marketing literature, the dominant tendency has been the study of the factors that influence the adoption of new channels. This pattern is clearly illustrated in the reviews of the literature carried out by Hewer and Howcroft (1999) and by Howcroft *et al.* (2002). In these reviews, the main factors influencing adoption are convenience and the user friendliness of the technology (Moutinho and Meidan, 1989; Rugimbana, 1995; Marr and Prendergast, 1993; Lockett and Litter, 1997), while for the non-adopters the preference was to deal with a person (Zeithaml and Gilly, 1987) in addition to considering the safety, risk and complexity of the channel (Leblanc, 1990). In terms of the technologies analysed, the literature in the field of financial services marketing is focused on the use of the ATM (Zeithaml and Gilly, 1987; Rugimbana, 1995; Marr and Prendergast, 1993). In the 1990s there was a change toward telephone banking (Lockett

and Litter, 1997) and more recently the studies have centred on internet banking (Daniel and Storey, 1997; Morrison and Roberts, 1998; Aladwani, 2001; Bradley and Stewart, 2003). The assembly of technological channels grouped under the concept of virtual banking has also been studied (Liao *et al.*, 1999).

In their qualitative study on financial services Black *et al.* (2002) categorised the variables that influence channel selection into four groups. The first group was formed by the characteristics of the consumer and included consumer confidence, socioeconomic characteristics, age and way of life, motivation, emotional answers and ethics. A second group was made up of the variables of the product itself such as complexity, price and perceived risk. The third group was composed of channel variables such as accessibility, channel cost and risk. Finally, the fourth group considered organisational factors such as company reputation, brand image, size, longevity and the ranking of available channels.

Hypothesis development

One omission in research is the lack of empirically tested scales that allow the measurement of variables that are not directly observable.

Using the classification system developed by Black *et al.* (2002), this paper studies how two types of variables influence customer behaviour in selecting their interaction channel: individual variables (desire for privacy and social relations) and channel variables (knowledge and convenience). Both types are variables of individuals: the first does not take the channel into account, and the second does.

In terms of consumer behaviour, two types of behaviour are considered: consumer behaviour characterised by the use of the traditional personal contact channel, whose technological component is nil, and that characterised by the lack of the use of personal channels, which is based on technology and self-service, specifically, on access by means of the internet and ATM. An analogous classification was used by Liao *et al.* (1999) when they differentiated in the banking sector between the use of branch offices and the use of virtual banking, the ATM and the telephone would be included among these channels. Similarly, Kumar and Venkatesan (2005) found that the clients that use online media are also inclined to buy from multiple channels.

Desire for social relationships

The traditional channels provide a social interaction that the internet lacks. People may prefer dealing with a person rather than an electronic medium. In this sense, certain people give a lot of importance to personal contact.

It seems clear that the presence or absence of other people, along with social roles and opportunities for interaction, influence channel selection. Consumers may consider shopping expeditions as an opportunity to socialise and maintain social interactions. For certain purchases, the presence of other people may increase utility because it provides an opportunity to create and maintain human ties (Howcroft *et al.*, 2002; Nicholson *et al.*, 2002; Marshall and Helsop, 1988; Leblanc, 1990; Lewis, 1991; Black *et al.*, 2002; Balasubramanian *et al.*, 2005).

Therefore, we propose the following hypothesis to be verified:

H1. The desire for social relationships increases the use of personal channels.

Privacy
In the context of the internet, privacy is used to refer to users' worries about the acquisition and subsequent use of information generated or acquired about them on the internet. In this work, the concept changes slightly and refers to the reluctance to share personal information with other people and the desire to keep such information private, this desire can promote the use of impersonal channels. In certain circumstances a lack of personal contact can be desirable, particularly for embarrassing purchases. Consumers may prefer online channels to avoid such negative emotions as shame or guilt. Additionally, consumers with an aversion to social interactions may prefer to make their purchases online (Black *et al.*, 2002; Lewis, 1991; Balasubramanian *et al.*, 2005). From this literature the following hypothesis emerges:

H2. The desire for privacy increases the likelihood of using impersonal channels.

Skill, ability to use a channel
The ability to use a channel is a determining variable for its use. Although all clients feel comfortable with the conventional methods based on personal contact, the channels based on technology present more difficulties. And, high levels of confidence in using a technology correspond to a stronger feeling of being in control. The effort that the consumers are willing to dedicate to the purchase online may vary with their experience with computers and web sites. In any case, users of a channel should be familiarised and comfortable with the technology employed; otherwise they will reject it (Black *et al.*, 2002; Schoenbachler and Gordon, 2002; Marshall and Helsop, 1988; Rugimbana, 1995; Daniel, 1998; Montoya-Weiss *et al.*, 2003; Balasubramanian *et al.*, 2005). Knowledge of the technology need not be complete, not everyone claims to be an expert on the processes that can be performed using a specific technology, although partial knowledge may lead to limited use of a specific channel.

From the studies carried out the following hypothesis arises:

H3. High levels of operational knowledge of a channel increase the likelihood of its use.

Convenience
New communication and information technologies and self-service systems provide some utilities of space and time which, if they are perceived, can be valued by the consumers. Around the clock availability that eliminates the time pressure to make decisions, the lack of a need to wait in line and other conveniences are elements of non-personal channels that can influence consumer decisions. These benefits can create the perception that the quality of service of a channel is superior and, therefore, increase the preference for its use (Black *et al.*, 2002; Schoenbachler and Gordon, 2002; Sarro, 2002; Rugimbana, 1995; Lockett and Litter, 1997; Daniel, 1998; Howcroft *et al.*, 2002; Marshall and Helsop, 1988; Montoya-Weiss *et al.*, 2003).

From the studies carried out the following hypothesis arises:

H4. The greater the perception of the convenience of a channel the greater the likelihood of its use.

The hypotheses presented can be seen in schematic form in Figure 1.

Research method
An empirical study was carried out in the financial sector, specifically among the clientele of a savings bank in Spain. Because it is an individual business, the effects of organisational factors were not considered (Black *et al.*, 2002). The financial sector was chosen because it is an information intensive business in which information technology plays an increasingly significant role (Liao *et al.*, 1999). Moreover, the financial sector is a sector that has a long history of developing new interaction channels with clients. This leads us to think that the users of financial services are used to multichannel strategies. This is therefore a potentially interesting sector for study in the context of this work and might permit the extrapolation of the results of this study to other sectors.

A questionnaire based on prior studies was drawn up which was intended to measure the constructs used in the study. We presented multi-item scales for each construct. Each item consisted of a proposal for which the interviewees had to rate their degree of agreement or disagreement. This was measured using Likert-like statements with values ranging from 0 to 10. The interviewees were also asked which channel they used to perform different operations with the financial company.

The questionnaire was tested in two branch offices to detect any errors. The errors found were corrected to obtain the final questionnaire. The answers were obtained through the personal survey carried out by two pollsters prepared for such purpose. The interviews were carried out in 20 branch offices from different towns and districts. The respondents were randomly selected from the people inside the branch office. The pollsters had to select people who were being attended at the counter and also those who were using the ATM. The fieldwork was done during the months of April and May of 2005 and 440 surveys were collected, all of them valid, from the branch offices of the financial company. Statistical processing was done using the programs SPSS v. 10, SPAD v. 3.5 and EQS v. 6.1.

Variable to be explained: channel selection
The "consumer behaviour" variable was measured by dichotomous variables that assessed the use or lack of use of different channels (counter, ATM, internet, telephone) for the performance of certain operations with the company.

Use of the telephone was practically nonexistent, and with respect to the products referred to as long-term investments, loans and insurance, the most frequently used channel was the counter – the rest of the channels were used by less than 10 per cent of the subjects. Therefore, this study will focus on the use of the counter, ATM and
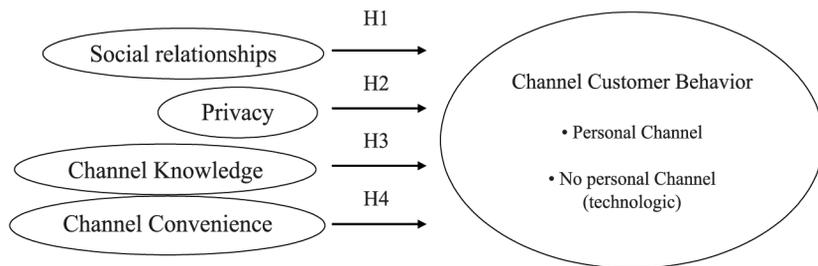
Figure 1.
Theoretical model

internet, for consulting bank accounts, withdrawing money (except for internet) and performing bank transfers (except for the ATM).

Seven nominal variables were used (uses/does not use); therefore, a multiple correspondence analysis was carried out using the SPAD program to reduce the dimension to a synthetic variable that represents user behaviour. This analysis showed that the main value retained 39.47 per cent variance, a sufficient value for an analysis of this type.

The values of the modalities studied in the first factor are reflected in Table I.

As shown in Table I, the positive values correspond to the use of personal channels and not to the use of technological channels, and the negative values correspond to the use of technological channels. Therefore, we can state that the first factor represents the preference for the use of channels that are more or less personal (or with smaller or greater presence of technology). It should be remembered that the internet requires a greater familiarity with technology than the ATM, as it is necessary to start up the computer and to use a browser. The separation between branch office banking and virtual banking in a dichotomous variable was already used in the empirical study carried out by Liao *et al.* (1999), although in this study it is a continuous variable. Finally the factorial scoring for factor one was collected for each individual as the value to explain for the rest of analyzed variables. This variable has an average of 0 and a standard deviation of 0.56.

Evaluation of measurement scales

The literature reports a series of variables that are influential in channel selection. These variables are not directly observable and in order to measure them multi-item scales were used. These scales should fulfil the desirable psychometric properties. A confirmatory factorial analysis model was used to contrast the reliability and validity of these scales. We used a measure model with six variables: desire for social relationships (SR), desire for privacy (privacy), knowledge of the internet (KINT), convenience of internet (CINT), knowledge of the ATM (KATM) and convenience of the ATM (CATM). This model was estimated by the robust maximum likelihood

Modalities		Coordinate in 1st factor
Withdrawal ATM	No	1.33
Consulting ATM	No	1.09
Withdrawal counter	Yes	0.66
Consulting counter	Yes	0.53
Consulting internet	No	0.30
Transfer counter	Yes	0.22
Transfer internet	No	0.19
Transfer counter	No	−0.43
Consulting ATM	Yes	−0.47
Withdrawal ATM	Yes	−0.47
Withdrawal counter	No	−0.84
Consulting internet	Yes	−0.87
Consulting counter	No	−0.91
Transfer internet	Yes	−1.18

Table I.
Values of modalities in
the first factor

method on the variance and covariance matrix and the goodness of fit indices reached acceptable levels (χ^2 Satorra-Bentler = 462.20 (df = 215, $p < 0.00002$); CFI = 0.984; RMSEA = 0.069). Table II shows the factorial loads of each item with respect to the construct that it measures, and also the statistical t of each load and its R^2. The data in Table II verify convergent validity as the values of the loads are significant and R^2 are sufficiently high, and the values of the average variance extracted (AVE) (Fornell and Larker, 1981) surpass the critical value of 0.5. Sufficiently high values for the reliability composed coefficient (ρ) were also achieved, verifying the reliability of the scales used.

Following Fornell and Larker's (1981) approach for evaluating the discriminant validity, the average variance extracted and the square correlation for every possible pair of factors were calculated. The results, presented in Table III, showed that the average variance extracted for each latent variable was greater than the squared

Construct	Item	Factorial load (λ)	t statistic (to λ)	R^2	Reliability coefficient (ρ)	AVE
SR (social relationships)	SR1	0.757	13.45	0.574	0.761	0.523
	SR2	0.539	7.71	0.290		
	SR3	0.840	17.15	0.705		
Privacy	privac1	0.854	19.26	0.729	0.959	0.853
	privac2	0.972	26.82	0.944		
	privac3	0.929	22.13	0.863		
	privac4	0.937	25.61	0.878		
KATM (knowledge of the ATM)	KATM1	0.990	31.69	0.980	0.977	0.915
	KATM2	0.987	33.08	0.975		
	KATM3	0.939	28.36	0.882		
	KATM4	0.909	30.09	0.826		
CATM (convenience of the ATM)	CATM1	0.943	23.77	0.890	0.967	0.881
	CATM2	0.958	29.71	0.918		
	CATM3	0.922	30.59	0.849		
	CATM4	0.932	27.60	0.868		
KINT (knowledge of internet)	KINT1	0.980	93.67	0.960	0.978	0.919
	KINT2	0.963	60.47	0.927		
	KINT3	0.987	87.60	0.974		
	KINT4	0.902	40.11	0.813		
CINT (convenience of internet)	CINT1	0.878	27.34	0.770	0.960	0.857
	CINT2	0.882	38.51	0.778		
	CINT3	0.964	42.96	0.929		
	CINT4	0.975	53.93	0.950		

Table II.
Standardised factorial loads, t statistic, R^2 coefficient, reliability composed coefficient and AVE from measure model

	SR	Privacy	KATM	CATM	KINT	CINT
SR	0.52					
Privacy	0.03	0.85				
KATM	0.18	0.02	0.91			
CATM	0.16	0.03	0.90	0.88		
KINT	0.14	0.00	0.20	0.14	0.91	
CINT	0.13	0.03	0.16	0.11	0.55	0.85

Table III.
Square correlation between constructs and average variance extracted (in the diagonal)

correlation for the same pair, indicating that each construct was a distinct construct. Except for Knowledge of ATM (KATM) and convenience of ATM (CATM) that is practically equal (0.02).

To further test the discriminant validity, the sequential Chi square method was used (Anderson and Gerbing, 1988). In this method, an unconstrained structural model that shows all the constructs to freely correlate, and a constrained model which fixes the value of the correlation between a pair of constructs equal to unity (this presumes the two constructs are alike), are compared. The measurement model is re-estimated. The Chi square thus obtained is compared against the Chi square of the unconstrained model. The comparative fit indices (CFI) of the constrained and unconstrained models are also compared. The difference between the Chi square coefficients of the constrained and unconstrained models is computed. If the difference value is less than the critical value associated with the difference in degrees of freedom between two models, the hypothesised constraint is accepted and the two constructs are considered to be equal. If the difference is more, the two constructs are said to be distinct and discriminant validity is established.

In the present study, to certify the divergent validity of the constructs Knowledge of the ATM (KATM) and Convenience of the ATM (CATM), we estimated a measure model with the covariance among these latent variables constrained to 1. This model presented a χ^2 Satorra-Bentler $= 663.09$ (df $= 216$, $p < 0.00000$), CFI $= 0.970$ and RMSEA $= 0.069$. As can be appreciated, the increment in χ^2 is 335.97, a significant deterioration of the model because it is greater than a χ^2 with 1 degree of freedom for a 0.05 level of confidence (which is 3.84). This weakening suggests the divergence of both constructs.

The items finally used are shown in Table IV.

Results and discussion

The hypotheses presented were verified by a confirmatory factorial analysis of the model presented. The model shows acceptable fit (see Figure 2) despite a root mean squared residual of approximation slightly greater than is desirable (less than 0.08 or 0.09). The 90 per cent confidence interval of RMSEA is (0.105, 0.115), which may be because the model is small.

The desire for social relationships construct has a coefficient that is both significant and positive ($\beta = +0.185$, $t = 5.16$), therefore, we can state that the fourth hypothesis, "A greater social orientation increases the use of personal channels", has received empirical support. This consequently confirms that the desire to deal with a person rather than a technological medium influences consumer behaviour. The possible preference for human interaction causes the consumer to avoid using technological channels.

The desire that data considered personal are shared with nobody has also been confirmed. The prior qualitative studies predicted that this might be a prominent variable, and this study shows how it has a real influence and has the expected sign ($\beta = -0.101$, $t = -2.81$). In this case the sign is negative; therefore, self-service through technological media increases the level of privacy. In spite of its influence, one must consider that this is the variable that least affects consumer behaviour in the

Item code	Text	Source
SR1	I prefer to go to the counter because relationships among people are necessary	Developed for this study
SR2	The people at the counter are nice and attentive	Developed for this study
SR3	Going to the branch office is a good way of relating to people	Black *et al.* (2002)
privac1	I prefer not to go to the counter because it is not private enough	Developed for this study
privac2	The person serving me shouldn't know my operations	Developed for this study
privac3	I would rather that the people at the counter did not make any comments	Developed for this study
privac4	I prefer not to speak to anyone while doing my banking	Developed for this study
KATM1	It is easy to use an ATM	Rugimbana (1995)
KATM2	I understand all the options of an ATM	Rugimbana (1995)
KATM3	I do not have any problems in using the ATM	Developed for this study
KATM4	At the ATM I do all the operations that I need to	Developed for this study
CATM1	I appreciate that the ATM provides 24 hour service	Black *et al.* (2002), Rugimbana (1995)
CATM2	I save time using the ATM	Black *et al.* (2002), Rugimbana (1995)
CATM3	I get better service thanks to the ATM	Black *et al.* (2002), Montoya-Weiss *et al.*(2003)
CATM4	I find that the ATM works very well	Rugimbana (1995)
KINT1	I know how to surf the net	Montoya-Weiss *et al.* (2003)
KINT2	I habitually surf the internet	Montoya-Weiss *et al.* (2003)
KINT3	I know how a browser works	Developed for this study
KINT4	I often use e-mail	Developed for this study
CINT1	I get better service thanks to the internet	Black *et al.* (2002), Montoya-Weiss *et al.*, 2003)
CINT2	It is important to be able to perform banking operations outside of office hours	Black *et al.* (2002)
CINT3	I appreciate not having to wait in line thanks to the internet	Black *et al.* (2002)
CINT4	I appreciate that operations can be done by internet from anywhere	Black *et al.* (2002)

Table IV.
Items used in the constructs

selection of the channel of interaction. This affirms that the second hypothesis, "The desire for privacy increases the likelihood of the use of impersonal channels" is empirically tested.

The variable "channel operating knowledge", that is to say, the customer ability to use a particular channel, is broken down into the knowledge of the use of the ATMs and the knowledge of the use of internet. The results for the ATM channel ($\beta = -0.315$, $t = -11.79$) and for the internet channel ($\beta = -0.179$, $t = -5.05$) confirm, in both cases, that knowledge has a significant effect on the choice of channels
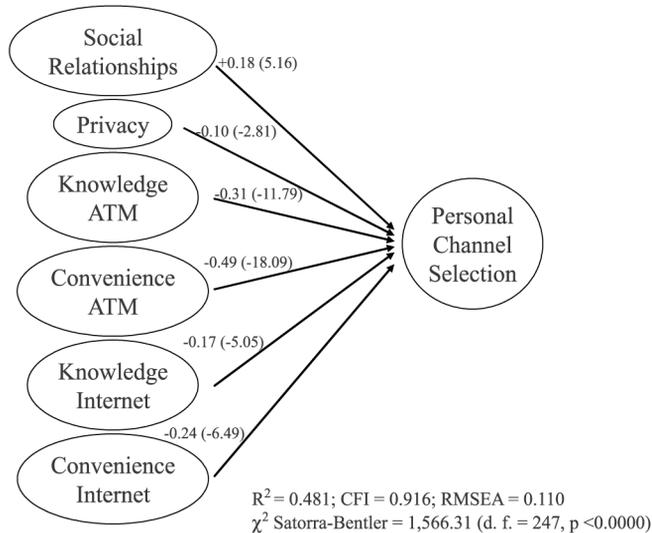
Figure 2.
Structural model with
factor loadings and
t-values in brackets

and that the sign is the one expected. In principle, the third hypothesis is also corroborated: "Knowing how a channel works increases the likelihood of its use". This result is also supported by the study presented by Liao *et al.* (1999) on virtual banking, which reports that user friendliness facilitates channel choice.

Channel convenience was broken down into two elements: convenience perceived in the use of the ATM and convenience perceived in the use of internet. Both conveniences are significant, both for the ATM channel ($\beta = -0.494$, $t = -18.09$) and the internet channel ($\beta = -0.247$, $t = -6.49$). Both variable influences present the sign expected (use of the channel scale increases if personal channels were more frequently used and decreases with ATM and internet use). The convenience obtained by using an ATM is the main determining factor for the preference for technological channels over personal channels. We can state that the fourth hypothesis, "The greater the perceived convenience of a channel, the greater the likelihood of its use", after the empirical contrast is accepted. This result is consistent with the study carried out by Liao *et al.* (1999) in which relative advantage and demonstrable results were found to be the most influential factors in the adoption of virtual banking. The work of Rugimbana (1995), focused exclusively on the use of the ATM, also found empirical evidence for the effect of convenience (relative advantage) on the tendency to use ATMs.

Conclusions and business implications

This study is a reflection on the new environment of the relationship between businesses and their clients due to the influence of new information and communication technologies. This environment is fundamentally characterised by a context of multichannel interaction and the company should respond with an integrated strategy of multichannel contact. Such a strategy would facilitate the

customer to "move" among the channels in order to go through the different stages of the sale process and would work toward meeting the objective of increasing clients' overall satisfaction.

The multichannel contact centre is one of the fundamental pillars of "customer relationship management" known by the acronym CRM. It is not enough simply to have the necessary technology (hardware, software and telecommunications). Companies must investigate consumer channel preferences and the motives that induce them to use a particular channel or not. In this new context, knowledge of the consumer is as necessary as the technology.

We studied the financial sector because it is one of the sectors that has more thoroughly explored multichannel strategies and has become representative in the use of these strategies. In this sense, it is an innovative sector, and the conclusions drawn from it can be transferred, with caution, to other sectors.

The variable "channel selection in a multichannel environment" was structured in a variable that ranges from the preference for channels with direct personal contact (this would be the classical channel with interactions with the contact personnel of the company) to the preference for technological channels (self-service without face-to-face contact with any employee). Though this approach has previously been applied, in this study it has been structured for empirical contrast through a multiple correspondence analysis on dichotomous behaviour variables.

The variable that most influenced consumer behaviour was the perceived convenience of the ATM. It is clear that improving this perception is the best way to obtain wider channel utilisation, although before making a business decision, in addition to comparing the prices of each channel, the level of customer satisfaction with each channel should be considered.

The "desire for social relationships" factor also proved significant. According to the theoretical background, this element is more valued by older people. These relationships occur in the bank's branch offices and would therefore go against the use of technological media. This raises the question of the need to study different segments of the population and the corresponding channels they choose and feel most satisfied with. Perhaps older people collectively seek social interaction, have a certain aversion to technology and are, therefore, potential personal channel users.

Knowledge of channel operation proved significant as predicted. A better knowledge of the internet will provoke greater use of electronic banking. From this perspective, administrative initiatives to promote internet use should be well received.

Privacy also proved a significant factor, although its levels of influence were low. internet is a medium that some authors have qualified as "intimate", it is a channel with the conditions for obtaining greater sincerity and therefore the internet user may value that nobody knows about certain bank operations. This property may be highly appreciated by some groups.

An important issue that emerges from these conclusions is the outsourcing of these bank services. If customers desire to relate to technological channels, there is no need to provide these channels with the institution's own personnel. Banks can even provide such services as call centres, software and database management from other countries. Banks should reflect on customer convenience and value creation.

Limitations and future research
The limitations of this study were caused by the lack of previous empirical research and tested scales. It would be interesting to apply the variables used here to other studies to confirm the reliability and validity of the scales used and, in particular, the discriminant validity between them. The causal model has a good enough fit but its RMSEA could be improved. New empirical studies can reassert the model. It would also be particularly interesting to analyse the variables that, although significant, present surprisingly low factorial loads (knowledge of the channel and desire for privacy).

Future research may study other geographical areas and contrast the results to assess global financial consumer behaviour.

An interesting topic to be studied in depth is the difference between channel choice and channel use. The theory of reasoned action or the more classical hierarchy of effects could be used as a framework for assessing the difference between intentions and behaviour, and the different stages of consumer behaviour in this context.

Technological channels change rapidly, have increasingly more functions and are therefore more convenient. This leads to some questions: Does this technological change motivate people to increase their technological skills? Or, on the other hand, are there some groups of people who will never be comfortable with technological channels? It may be useful to segment customers.

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