Linking Trust to Use Intention for Technology-Enabled Bank Channels: The Role of Trusting Intentions

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ABSTRACT

The present research is an attempt to better understand the role of trust in the adoption of technology-based service channels, namely Internet and phone banking. The study conceptualizes and measures trust, distinguishing the cognitive and affective component of trust (the trusting beliefs), the behavioral component of trust (trusting intentions), and the purchase behavior (intention to use), suggesting a mediating role of trusting intentions. Then it tests a model that combines the effect of trusting beliefs and trusting intentions together with the Technology Acceptance Model variables, privacy, and security as well as individual characteristics. Results from 762 retail bank customers revealed a strong mediating role of trusting intention on the intention to use and similar patterns of relationship for the two technology-based bank channels. Several implications for managers and further research are discussed. © 2010 Wiley Periodicals, Inc.

The growing importance of the Internet and more generally of information and communication technologies as new marketing and sales channels and the opportunities they create for companies have led an important stream of research to focus on the adoption process of these channels by consumers.

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Especially in the financial sector, new technologies have been recognized as one of the most important factors that shape the industry trends, provoking changes in both the structure of banking distribution channels (Barnatt, 1998; Mols, 1999) and customer behavior (Barnatt, 1998; Jayawardhena & Foley, 2000). Alternative bank channels, such as Internet, phone, mobile, and TV, can create a strong competitive advantage through differentiation, value to the customer, and cost reduction. Thus, the channel mix decisions are among the most complex but also most strategic marketing decisions for bank executives (Mols, 1999; Thornton & White, 2001).

In this context, the building of consumers' trust in such technology-mediated environments is pointed as a critical challenge for managers and a key research topic for academics (e.g., Schlosser, White, & Lloyd, 2006; Yang, et al., 2006). An important body of research has established the significant role of trust in the acceptance of e-technologies in general and e-commerce in particular. Yet, one can observe a great disparity in the approaches of conceptualisation and measurement of trust as well as in the relationship between trust and technology acceptance variables.

This disparity may be attributed to several reasons. First, trust has been measured in many different ways, ranging from uni-dimensional scales to two, three, or four multi-item dimensions (Jarvenpaa, Tractinsky, & Vitale, 2000; McKnight, Choudhury, & Kacmar, 2002; Pavlou, 2003). Second, trust has been measured in different technology-related contexts, such as Web sites, e-retailers, e-banking, e-shops of existing, well-known companies versus pure online players, as well as in different product categories reflecting various degrees of involvement and risk, pointing that the influence of trust may be contingent upon the context of e-technology use (Wang et al., 2003; Schlosser, White, & Lloyd, 2006).

Also, trust has been measured at different levels, namely company level, Web site, or e-shop level. Particularly in the case of existing, "brick-and-mortar" companies, such as banks, that introduce new sales, distribution, or transaction channels, trust should be assessed also at the channel level. Finally, the predictive effect of trust on the adoption of e-channels as well as the total explanation of the use intention of these channels has been found to be very variable, depending on the various other factors included in the related empirical studies (Pavlou, 2003; Grabner-Krauter & Kaluscha, 2003; Njite & Parsa, 2005).

This article focuses on two banking channels, phone banking and Internet banking, and attempts to contribute to the existing body of literature on trust and the adoption of technology-enabled channels in several ways. First, it conceptualizes and measures separately the cognitive and affective component of trust (the trusting beliefs), the behavioral component of trust (trusting intentions), and the behavioral intention (intention to use). Trusting intentions have been given relatively little attention and in some cases have been measured more as use intention and less as a trust construct (Schlosser, White, & Lloyd, 2006). In this study trusting intentions are tested as a mediator variable between trusting beliefs and use intentions. Second, the two constructs of trusting beliefs and intentions are measured at a channel—and not company—level. Such an approach is particularly meaningful in the banking context, since, for most customers, trust in the bank is already established through past experience with "traditional" channels and other means; what matters in the adoption of technology-enabled channels are trust attitude and behavior towards this specific

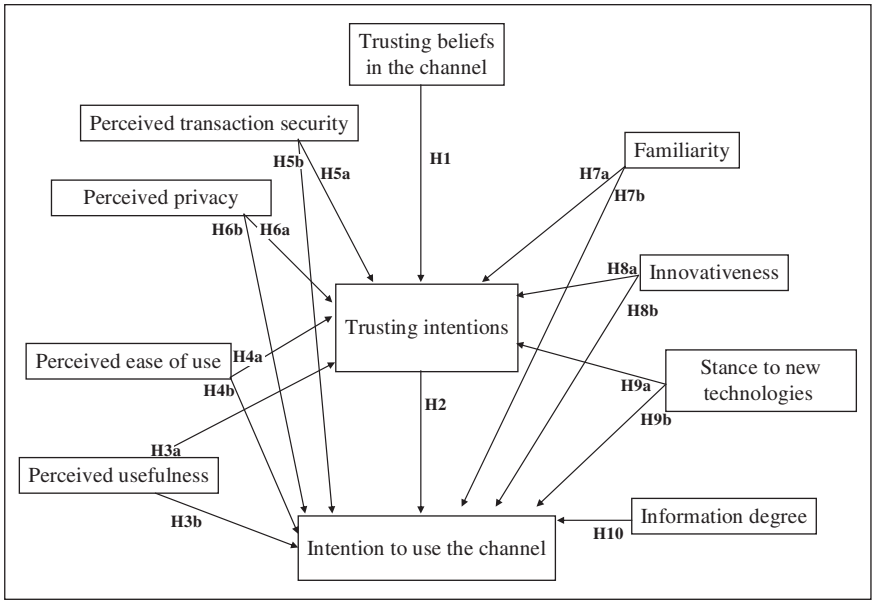

Figure 1. The research model.

environment. Third, the proposed model tests together a number of variables that have been thus far studied mostly in an isolated manner. Finally, it allows us to establish whether the two channels have similar adoption patterns or not. Comparative research on alternative technology-based channels has been often encouraged and some evidence already exists supporting that the adoption of different channels is explained by different factors (Meuter et al., 2000; Curran & Meuter, 2005).

The following sections present the conceptual model and state the related hypotheses, then describe the research methodology and report the results of an empirical study designed to test the research hypotheses. Finally, the implications of our study and suggestions for future research are discussed.

CONCEPTUAL BACKGROUND AND RESEARCH FRAMEWORK

The research model of the study, together with its hypotheses, is shown in Figure 1. Its theoretical background is based on the Technology Acceptance Model (TAM) and the trust literature, as suggested by previous work combining these two fields, notably in the context of e-commerce (e.g., Pavlou, 2003, Gefen, Karahanna, & Straub, 2003).

TAM draws on the fundamental sequence of the Theory of Reasoned Action (TRA) (Fishbein & Ajzen, 1975), implying that beliefs lead to attitudes which in turn drive behavioral intentions and finally behavior. TAM introduced the key beliefs of perceived ease of use and perceived usefulness as predictors of behavioral intentions in the context of technology adoption (e.g., Davis, 1989; Gefen, Karahanna, & Straub, 2003). Further, most TAM-based studies concentrate on explaining the intention to use the technology and omit attitude in the model.

Attitude, in fact, is not part of Davis's (1989) own, more concise, version of TAM, and subsequent research has mainly focused on the direct relationships between perceived ease of use and perceived usefulness on one hand, and intention to use on the other (Gefen, Karahanna, & Straub, 2003; Venkatesh & Davis, 2000; Pavlou, 2003; Taylor & Todd, 1995; Chau, 1996).

Trust-related literature also postulates the sequence of influence of trusting beliefs on attitude, intention, and behavior and has been extensively used to confirm the impact of trust, privacy, and security beliefs on behavioral intention, specifically towards e-technologies (e.g., McKnight, Choudhury, & Kacmar, 2002; Gefen, Karahanna, & Straub, 2003; Yousafzai, Pallister, & Foxall, 2005).

Finally, individual characteristics have proved to impact intention to use or actual use of new technologies, especially in the early stages of their introduction (i.e., Meuter, et al., 2005). Hereafter previous research supporting the variables included in the model and their relationships is reviewed.

Trusting Beliefs and Trusting Intention

Trust in general has been given many different definitions, depending on the various angles through which it has been analyzed in disciplines such as economics (Williamson, 1975), sociology (Lewis & Weigert, 1985), social psychology (Blau, 1964), and marketing (Moorman, Deshpande, & Zaltman, 1993; Ganesan, 1994; Sirdeshmukh, Sing, & Sabol, 2002). However, because of the multidimensionality of the meaning of trust and its dynamic role, there is no general agreement on its definition (Young & Wilkinson, 1989; Rousseau et al., 1998).

Trust is most commonly defined as a belief in a person's competence to perform a specific task or an expectancy that the promise of an individual can be relied upon (Rotter, 1971; Morgan & Hunt, 1994) or as a willingness to rely or to depend on an exchange partner (Moorman, Deshpande, & Zaltman, 1993; Kim, Ferrin, & Rao, 2008). As has been pointed out by several researchers, these definitions reflect two components of the trust construct, a cognitive aspect (i.e., trusting beliefs) and a behavioral aspect (i.e., trusting intentions) (Sirdeshmukh, Singh, & Sabol, 2002; McKnight, Cummings, & Chervany, 1998; Yousafzai, Pallister, & Foxall, 2005). The behavioral willingness is proposed as a necessary ingredient of trust, as it indicates a greater commitment to trust. Thus, it is suggested that trusting beliefs are a necessary but not sufficient condition for trust to exist, because increasing trusting beliefs will not always have a corresponding positive effect on trusting intentions and thus both belief and behavioral intention components must be present for trust to exist (Moorman, Deshpande, & Zaltman, 1993; Schlosser, White, & Lloyd, 2006).

One can observe that there is no general agreement on the components that constitute the trusting beliefs. Building on a synthesis of the conceptual and empirical work on trust adapted to an electronic context, McKnight, Choudhury, and Kacmar (2002) and McKnight and Chervany (2002) have suggested a typology of the construct which covers more than 90% of the 65 most important articles and books on the subject. This conceptualization describes trusting beliefs as one's beliefs that the other party has one or more characteristics beneficial to oneself. Trusting beliefs are described through four distinctive components: Competence, one's belief that the other party has *the ability or power* to do what one needs to be done; Benevolence, one's belief that the other party *cares about* and is *motivated to act in one's interest*; Integrity, one's belief that the other party makes *good-faith*

agreements, tells the truth, acts ethically and *fulfills promises*; and Predictability, one's belief that the other party's actions *are consistent over time* and *can be forecasted* in a given situation.

In further discussion of these four components, McKnight and Chervany (2002) argue that in a context where the subject has low experience with the object of trust—as in the case of our research, where respondents were non-users of Internet and phone banking—the dimensions of Benevolence and Integrity may group to one, and show a greater influence: "*Some or all of these trusting beliefs will probably merge together into one construct when the trustor knows little about the trustee, but as parties get to know each other, the trustor will be able to differentiate among the trusting beliefs more discretely. The two most likely to merge are integrity and benevolence, since they both imply that the trustee will do the trustor good instead of harm*" (p. 50). Their proposition has not been empirically tested, but is in line with previous work in service (Johnson & Grayson, 2005) and business-to-business (Mollering, 2002) markets, intra-company (McAllister, 1995), and social relationships (Lewis & Weigert, 1985) that has referred to cognition-based (competence) and affect-based (benevolence, integrity) trust.

Taking into account the lack of consensus on the structure of trusting beliefs, in the present study McKnight and Chervany's (2002) most exhaustive four-dimensional definition of trust was adopted and tested in the specific context of the two technology-based bank channels.

As far as trusting intentions in an e-context are concerned, they have been defined as a person-specific construct that embodies the readiness to depend upon or to rely upon another party and a willingness that is not based on having control or power over the other party (McKnight, Cummings, & Chervany, 1998; Yousafzai, Pallister, & Foxall, 2005). Also, trusting intentions have been premised to include not only the willingness to depend but also the subjective probability of depending (McKnight, Choudhury, & Kacmar, 2002; McKnight & Chervany, 2002).

Further, causal links can be established between trusting beliefs and trusting intentions. In fact, beliefs, intentions, and behaviors fit together in a meaningful way as they are defined to be cohesive constructs, one leading to or predicting another. That is, beliefs (trusting beliefs) lead to intentions (trusting intentions) which, in turn, become manifest in behaviors (trusting behaviors) (McKnight & Chervany, 2002; Yousafzai, Pallister, & Foxall, 2005; Schlosser, White, & Lloyd, 2006). When one has trusting beliefs about another, one will be willing to depend on that party (trusting intention) and if one intends to depend on that party, then s/he will behave in ways that manifest that intention to depend (trusting behavior).

Coming to the issue of distinguishing trusting intentions from use intentions (i.e., trusting behaviors), research is rather mixed and ambiguous. While some authors have measured trust intentions as use intentions (Grabner-Krauter & Kaluscha, 2003; Schlosser, White, & Lloyd, 2006), others seem to have measured trust intentions as distinct construct (Kim et al., 2004; Yousafzai, Pallister, & Foxall, 2005).

However, considering trusting intentions as use intentions seems mixing a willingness to rely or depend on someone or something, a trust-based construct, with use intentions, such as the specific probability to buy or use something. Use intention is an integrative construct based on more predictors than trust, which expresses the discreet probability to use something specific in a representative

time frame (Fishbein & Ajzen, 1975; Pavlou & Fygenson, 2006). Hence, the present work argues for the need to distinguish between the willingness to rely on the Internet/phone banking medium for making some transactions and the probability to use the Internet/phone banking for making specific transactions for the next six- or twelve-month period of one's life. In this vein, McKnight and Chervany (2002) and McKnight, Choudhury, and Kacmar (2002) have suggested that the construct of "trusting intention" is a mediating variable between "trusting beliefs" and "trust-related behaviors." Such a mediating role of trusting intentions may explain the weak effect or the absence of direct effect between trusting beliefs and use intentions observed in some empirical studies (Bhattacherjee, 2002; Pavlou, 2003; Gefen & Straub, 2004).

In the present study these three constructs are measured separately and, according to the preceding discussion, their relationships are hypothesized as follows:

H1: Trusting beliefs in each e-banking channel affect positively trusting intention towards the channel.

H2: Trusting intention towards the channel affects positively the use intention for the channel.

Perceived Usefulness and Perceived Ease of Use

The Technology Acceptance Model (Davis, 1989) is one of the most widely used models predicting the use intention of information and communication technology systems. While it was originally developed to predict the use of information systems by users in a work environment, it has, since then, been extensively applied to explain the factors that influence the adoption of e-commerce and other on line systems, either with its original form or in an extended version (e.g., Davis, 1989; Taylor & Todd, 1995; Venkatesh & Davis, 2000; Gefen, Karahanna, & Straub, 2003). These studies have repeatedly confirmed the relevance of the TAM model, yet its explanation power varies considerably from study to study. In line with previous empirical work, in the present study Internet banking and phone banking are considered as information systems incorporating new information and communication technologies (Locket & Littler, 1997; Pikkarainen et al., 2004).

Perceived usefulness and perceived ease of use are the two basic variables constituting the beliefs that influence the attitude, the behavioral intention, and finally, the actual use of the potential information system users. Empirical work on the relationships among these variables has revealed various results. In some studies, "usefulness" has no direct affect on attitudes (Davis, 1993; Venkatesh & Davis, 2000), while it relates to "ease of use" and influences directly use intention and/or actual use (Venkatesh & Davis, 2000; Pikkarainen et al., 2004). In other studies, the direct relation of "usefulness" to "use intention" is not confirmed (Jackson, Chow, & Leitch, 1997). Recently, Ravi, Carr, and Vidya Sagar (2006), using different classification models to profile users and non-users of Internet banking found that both perceived usefulness and ease of use predicted the use of e-banking.

Based on this background, the following hypotheses are posited:

H3a: Perceived usefulness has a positive influence on trusting intention for each e-banking channel.

H3b: Perceived usefulness has a positive influence on use intention for each e-banking channel.

H4a: Perceived ease of use has a positive influence on trusting intention for each e-banking channel.

H4b: Perceived ease of use has a positive influence on use intention for each e-banking channel.

Perceived Transaction Security and Perceived Privacy

Privacy and security are issues of growing concern for consumers and seem to be among the main obstacles for e-channels adoption and online transactions (Kim, Ferrin, & Rao, 2008; De Ruyter, Wetzels, & Kleijnen, 2001). Many researchers have confirmed that security and privacy have an influence on consumers' attitudes toward and use intentions of e-commerce (Grabner-Krauter & Kaluscha, 2003; Yousafzai, Pallister, & Foxall, 2005; Liu et al., 2004). Consequently, the following hypotheses are suggested:

H5a: Perceived transaction security has a positive influence on trusting intention for each e-banking channel.

H5b: Perceived transaction security has a positive influence on use intention for each e-banking channel.

H6a: Perceived privacy has a positive influence on trusting intention for each e-banking channel.

H6b: Perceived privacy has a positive influence on use intention for each e-banking channel.

Individual Characteristics

Individual characteristics have proved to impact intention to use or actual use (Meuter et al., 2005), especially in the early stages of the introduction of new technologies, as is the case for Internet and phone banking.

Familiarity. Familiarity refers to knowledge and experience of a person with the technology, in our case the Internet and the phone. Gefen's empirical findings (2000) supported that familiarity in an online context is one of the factors that influence—directly or indirectly—the willingness to use a Web site both for information or transaction purposes. Familiarity has also been studied as a control variable in the relation between trust and use intention (Gefen & Straub, 2004). The impact of familiarity on the willingness to transact has also been supported in a retail Internet banking context (Bhattacherjee, 2002). In accordance with the above, the following hypotheses were formed:

H7a: Familiarity with Internet and digital phone services has a positive influence on trusting intention of Internet banking and phone banking, respectively.

H7b: Familiarity with Internet and digital phone services has a positive influence on use intention of Internet banking and phone banking, respectively.

Innovativeness. Innovativeness refers to a consumer's tendency to try or be the first to buy new products and services and has been examined by many researchers in different environments (Goldsmith & Hofacker, 1991). In an e-commerce context, most researchers have observed a positive relation between the degree of respondents innovativeness and their attitudes towards e-commerce as well as between innovativeness and the use of e-channels (Donthu & Garcia, 1999; Blake, Neuendorf, & Valdiserri, 2003; Chang, Cheung, & Lai, 2005).

H8a: Innovativeness has a positive influence on customers' trusting intention of each e-banking channel.

H8b: Innovativeness has a positive influence on customers' use intention of each e-banking channel.

Stance to New Technologies. The general attitude of a person towards new technologies is believed to have a positive influence on the adoption of technology-based channels. Studies having examined stance to new technologies as a factor impacting the adoption and use intention of an innovation, of a new information system or of a new e-channel have found its influence to be significant (Dickerson & Gentry, 1983; Marshall & Heslop, 1988). In the present study, this construct is considered as an important factor for the building of trusting intention and the prediction of use intention.

H9a: Stance to new technologies has a positive influence on trusting intention for each e-banking channel.

H9b: Stance to new technologies has a positive influence on use intention for each e-banking channel.

Level of Customer Information. The lack of knowledge about the availability and the advantages of e-banking services has been identified as an inhibiting factor in adoption of such channels (Sathye, 1999). Pikkarainen et al. (2004), in an enhanced TAM study for the adoption of e-banking, revealed that the awareness of and the amount of information about e-channels that bank customers have was a critical factor for its adoption and influenced directly its use intention. More recently, Gerrard, Barton, and Devlin (2006), in a qualitative study, found that the third most frequently mentioned reason for not using Internet banking was the lack of awareness about the service. Furthermore, the role of information about the existence and the advantages of alternative bank channels for their adoption was one of the key issues mentioned by bank managers in the qualitative study preceding the design of the survey.

H10: The level of customer information for each channel has a positive influence on use intention for the channel.

RESEARCH METHODOLOGY

In order to test our hypotheses, a large-scale bank customer survey was designed and conducted under the auspices of the Hellenic Bank Association. The top six Greek banks, which represent 72% of total bank assets in Greece, agreed to participate in the study by giving to the researchers access to their branches for data collection. Prior to the design of the survey, a qualitative study was conducted with bank managers in order to elicit priority issues regarding alternative bank channels, opinions on the factors affecting their adoption by retail customers, and to obtain input for the questionnaire. Twelve executives (four senior and eight middle management) coming from the six banks participating in the data collection were personally interviewed. These interviews revealed that the two priority channels are Internet and phone banking, which are in the late introduction–early growth stage, while mobile banking applications are still in their infancy and are expected to grow rather slowly. Trust was mentioned as a key factor leading customers to try and adopt these channels, while privacy and security issues were identified as key concerns for customers, inhibiting their willingness to use the channels. The amount of information customers have on the availability and the benefits of e- and phone banking was also considered by managers as an important factor for accelerating the adoption of these channels.

Data Collection and Sample

Before the data collection, a pilot study was conducted in order to test both the questionnaire and the customer approach. Seventy-four questionnaires were filled through personal interviews inside four bank branches. The response rate of this pilot study was 9% and the mean time of each interview 29 minutes. This pre-test led to wording corrections and to the improvement of the customer approach.

For the final survey, retail bank customers of the banks that participated in the research were personally interviewed. The interviews were conducted inside 20 branches of the six banks in the Attica region, Athens, Greece. The number of branches per bank was determined according to the population size and the number of bank branches in this region; branches were selected randomly. Inside each branch, a random systematic sampling was adopted during the whole working day and in a fortnight time frame. The sample obtained consisted of 762 usable questionnaires, the response rate was 13.4%, and the mean time of each interview 23 minutes.

Since the purpose of the study was to investigate the factors that explain the use intention of two innovative channels, respondents were filtered as branch and ATM users who do not use any other bank channel. The profile of the sample is shown in Table 1. The comparison of the demographics of the sample with those of the population allowed us to conclude that the sample was representative of banks' customers at a national level. In addition, the sample size was large enough to support the needs of the applied multivariate analysis of Structural Equation Modeling (Bentler & Chou, 1987; Hair et al., 1998).

Table 1. Demographics of the Sample and Population.

		Sample	Population (bank customers)*
Gender	male	50.1%	52%
	female	49.9%	48%
Age	18–29	29.1%	28%
	30–49	35.3%	40%
	50–59	19.6%	18%
	60+	16.0%	14%
Education	Lower than high school	19.2%	24%
	High school	45.4%	48%
	College	15.7%	12%
	Graduate or higher	19.7%	16%

Source: Hellenic Bank Federation, 2002.

Variables and Their Measures

The items used in the questionnaire are shown in Appendix A. Trusting beliefs in the channel were measured as mentioned above through the four components of competence, integrity, benevolence, and predictability on multiple-item scales (McKnight, Choudhury, & Kacmar, 2002; McKnight & Chervany, 2002). Scales validated in previous research were used, adjusted to the specific context of Internet and phone banking (Doney & Cannon, 1997; Mayer & Davis, 1999; McKnight, Choudhury, & Kacmar, 2002); however, because adjustments of some items were considerable the scale was considered as new. The "trusting intention" variable was adapted from McKnight, Choudhury, and Kacmar (2002) and McKnight and Chervany (2002), but, for the same reason, it was treated as new scale. The "use intention" variable was measured as a single element. "Innovativeness" was measured though five items adapted from Oliver and Bearden (1985) and Goldsmith and Hofacker (1991). "Stance to new technologies" was measured using five items coming from the work of Dickerson and Gentry (1983) and Kim and Prabhakar (2002). "Familiarity" items were taken from the scales of Griffin, Babin, and Attaway (1996). "Perceived transaction security" and "perceived privacy" variables were measured using scales validated in previous research, adjusted to the specific context of Internet and phone banking (Jarvenpaa, Tractinsky, & Vitale, 2000). Finally, "perceived usefulness" and "perceived ease of use" were adopted from TAM (Davis, 1989) and adjusted to the specific channels context. For all measures a 7-point Likert scale was used.

Measurement Validation, Purification, and Psychometric Properties

Since some scale items were adapted to the specific context of the research, an exploratory factor analysis (EFA) was first conducted, followed by a confirmatory factor analysis (CFA) (Hair et al., 1998). The EFA method used to extract the factors was the "Principal Component Analysis" followed by the "Varimax" rotation. The analysis revealed the following results:

1. The four dimensions of "trusting beliefs" were grouped into two, the first merging "competence" and "predictability," and the second grouping "benevolence"

and "integrity." This result is consistent with the cognitive and affective structure of trusting beliefs, suggested by some authors but not empirically established in the context of technology-based channels, as reviewed in the literature section (McKnight & Chervany, 2002; Johnson & Grayson, 2005; Mollering, 2002; McAllister, 1995; Lewis & Weigert, 1985). Following this finding, in the subsequent analysis were introduced those two dimensions of cognitive (competence and predictability) and affective (benevolence and integrity) trusting beliefs.

2. "Perceived security transaction" and "perceived privacy" formed two distinct factors.
3. The "trusting intention" and the "use intention" constructs formed two distinct factors, confirming the hypothesis that there is a clear distinction between them.
4. The "familiarity," "innovativeness," and "stance to new technologies" constructs formed a separate factor each.

It is worth noting that the same factors were formed for both Internet and phone banking. Following these results, a CFA was carried out, using structural equation modeling (SEM) (Byrne, 1998), in order to purify the measures employed in this study, examine the dimensionality of the scales, and assess their psychometric properties. Table 2 presents the results.

All indices of goodness of fit and the psychometric properties of the scales (composite reliability, convergent validity, and discriminant validity) are within the accepted levels (Bagozzi & Yi, 1988; Hair et al., 1998).

RESULTS AND HYPOTHESES TESTING

In order to test our hypotheses, a Structural Equation Modeling analysis was run (AMOS 5.0). Results of the two structural models for Internet and phone banking are shown on Tables 3 and 4, respectively.

To a large extent similar patterns are observed for Internet and phone banking. Differences between the two channels concern the role of (a) the two TAM variables (perceived ease of use and perceived usefulness) and (b) two individual characteristics, innovativeness and stance to new technologies. Specifically,

- Hypothesis 1, stating the influence of trusting beliefs on trusting intentions, is confirmed for both channels, for the affective component of trust. The strength of this relationship is not only significant but also quite strong, among the three strongest of the model.
- H2, stating the influence of trusting intentions on channel's use intention, is confirmed for both channels, revealing this link as the model's strongest effect for phone and the second strongest effect for Internet banking.
- H3a, stating the influence of perceived usefulness on trusting intentions, is confirmed for both channels, while H3b stating the influence of perceived usefulness on use intention is confirmed only for the Internet banking.

Table 2. Confirmatory Factor Analysis Results.

Variables	CMIN/DF	GFI	AGFI	CFI	RMSEA	Reliability	Convergent Validity	Discriminant Validity
Affective Internet Banking Trust	3.220	0.971	0.947	0.984	0.054	0.89	0.57	**0.933**
Cognitive Internet Banking Trust						0.91	0.62	1.002
Affective Phone Banking Trust	3.614	0.968	0.940	0.980	0.059	0.89	0.58	**0.947**
Cognitive Phone Banking Trust						0.91	0.62	1.006
Perceived Transaction Security, Internet Banking	3.206	0.984	0.944	0.991	0.076	0.84	0.64	**0.947**
Perceived Privacy, Internet Banking						0.87	0.70	1.037
Perceived Transaction Security, Phone Banking	3.894	0.989	0.966	0.993	0.062	0.86	0.67	1.023
Perceived Privacy, Phone Banking						0.88	0.71	1.082
Perceived Usefulness, Internet Banking	2.164	0.990	0.978	0.995	0.039	0.84	0.55	2.014
Perceived Ease of Use, Internet Banking						0.94	0.81	2.950
Perceived Usefulness, Phone Banking	1.587	0.992	0.984	0.997	0.028	0.82	0.54	1.779
Perceived Ease of Use, Phone Banking						0.93	0.79	2.593
Innovativeness	1.400	0.998	0.991	0.999	0.023	0.85	0.60	
Stance to New Technologies	4.354	0.995	0.946	0.988	0.068	0.79	0.48	
Familiarity with Internet/Digital Phone Services	The variable was measured with 3 items					0.94/0.93	0.85/0.81	
Trusting Intention	The variable was measured with 3 items					0.88	0.71	

Table 3. Results for Internet Banking.

Paths and Significant Loadings	Standardized Coefficients
Trusting Intention ← Affective Channel Trust	0.304
Use Intention ← Trusting Intention	0.352
Use Intention ← Perceived Usefulness	0.104
Trusting Intention ← Perceived Usefulness	0.127
Trusting Intention ← Perceived Security	0.355
Use Intention ← Familiarity	0.106
Trusting Intention ← Stance to New Technologies	0.147
Use Intention ← Stance to New Technologies	0.261
Use Intention ← Level of Information	0.174

All coefficients are significant at 0.01. Fit indices: CMIN/d.f.: 2141/754=2.840, RMSEA: 0.049, GFI: 0.875, AGFI: 0.857, CFI: 0.938, TLI: 0.932.

Table 4. Results for Phone Banking

Paths and Significant Loadings	Standardized Coefficients
Trusting Intention ← Affective Channel Trust	0.335
Use Intention ← Trusting Intention	0.401
Trusting Intention ← Perceived Usefulness	0.115
Use Intention ← Perceived Easy of Use	0.076*
Trusting Intention ← Perceived Security	0.358
Use Intention ← Innovativeness	0.103
Trusting Intention ← Stance to New Technologies	0.074*
Use Intention ← Level of Information	0.187

Coefficients are significant at 0.01. * Significant at 0.05. Fit indices: CMIN/d.f.: 1845/753=2.450, RMSEA: 0.044, GFI: 0.888, AGFI: 0.872, CFI: 0.946, TLI: 0.941.

- H4a, stating the influence of perceived ease of use on trusting intentions, is rejected for both channels, while H4b, stating the influence of perceived ease of use on use intention, is confirmed only for the phone banking.
- H5a, stating the influence of perceived transaction security on trusting intentions, is confirmed for both channels, with a relatively strong impact; H5b, stating the influence of perceived transaction security on use intention, is rejected for both channels.
- H6a, stating the influence of perceived privacy on trusting intentions, is rejected for both channels. H6b, stating the influence of perceived privacy on use intention, is also rejected for both channels.
- H7a, stating the influence of familiarity on trusting intentions, is rejected for both channels. H7b, stating the influence of familiarity on use intention, is confirmed only for Internet banking.
- H8, stating the influence of innovativeness on trusting intentions, is rejected for both channels. H8b, stating the influence of innovativeness on use intention, is confirmed for phone banking and rejected for Internet banking.
- H9a, stating the influence of stance to new technologies on trusting intentions, is confirmed for both channels. H9b, stating the influence of stance to new technologies on use intention, is confirmed only for Internet banking.

- Finally, H10, stating the influence of level of customer information on use intention, is confirmed for both channels.

DISCUSSION AND IMPLICATIONS

The main objective of this paper was to conceptualize and measure trusting intention as a distinct construct and then to test its mediating role in building intention to use Internet and phone as bank transaction channels.

Previous studies had addressed this issue in a rather ambiguous way, some authors having measured trust intentions as use intentions (i.e., Grabner-Krauter & Kaluscha, 2003; Schlosser, White, & Lloyd, 2006), while others have considered trust intentions as a distinct construct (Kim et al., 2004; Yousafzai, Pallister, & Foxall, 2005). Our results show that although related, trusting intention and trusting behaviors (use intention) are two distinct constructs. Further, the links between trusting beliefs, trusting intention, and use intention have the highest coefficients, indicating that this chain of effects constitutes the backbone of the model. Trusting intention, as a mediator between trusting beliefs and trusting behavior (use intention), proved to be the most important variable in explaining the use intention for both channels.

This finding confirms the mediating role of trusting intention in the trusting beliefs–use intention relationship suggested by recent research (McKnight & Chervany, 2002; McKnight, Choudhury, & Kacmar, 2002; Grabner-Krauter & Kaluscha, 2003). To our knowledge, this is the first time that these three constructs have been measured distinctly and their links empirically tested in market relationships, particularly in the context of financial services or technology-enabled channels. The establishment of the mediating role of trusting intentions contributes to a better understanding of the distinction among trusting beliefs, trusting intentions, and behavioral intentions and enriches both the TAM-based and the trust-related theoretical background presented in the literature review section.

Considering the link between trusting beliefs and trusting intention, it proved, in our case, to be based on the affective beliefs of benevolence and integrity, while the effect of cognitive trusting beliefs (competence and predictability) was not significant. This result can be explained by the fact that respondents were non-users of Internet and phone banking and, thus, knew little about the benefits of these channels and were not familiar with or informed about them. In the absence of these factors, customers would tend to rely on these new banking channels mainly if they believe that these channels and the bank that offers them operate with moral sense, integrity, transparency, and goodwill. This is consistent with McKnight and Chervany's (2002) proposition that when someone does not know the object of trust (which is the case here), s/he will rely mostly on the benevolence and integrity beliefs. Probably, when customers engage in Internet or phone banking transactions in the future and gain experience with them, different relationships may evolve.

As far as the total model is concerned, the similar patterns of relationships among variables for Internet and phone banking suggest that the observed patterns are robust. The effects on trusting intention are the same for both channels: trusting intention is affected by affective trusting beliefs, perceived transaction security, perceived usefulness, and stance to new technologies.

Effects on use intention are somewhat different between channels: In the case of Internet banking, use intention is influenced by perceived usefulness, familiarity, and stance to new technologies, while the intention to use phone banking is influenced by perceived ease of use and innovativeness. These differences can probably be attributed to the fact that consumers are less familiar with the Internet, as compared to the digital phone technology, and consider the Internet as a channel that incorporates much more technology than the phone; consequently the positive stance towards technology and the level of familiarity play an important role for the Internet as a banking transaction technology. On the other hand, customers are very familiar with the technology of the digital phone, but conducting banking transactions with it is something very new to them; as a result, the degree of innovativeness and the ease of use become important factors for its bank-use adoption.

Finally, it is worth noting that the level of customer information about the channel, a variable that has very seldom been studied in relation to e-channels, proved to have not only a significant effect, but an effect that is stronger than that of the TAM variables. This finding confirms earlier preliminary evidence that customers' awareness of and the amount of information about e-channels were critical factors for their adoption (Pikkarainen et al., 2004, Gerrard, Barton, & Devlin, 2006).

From a managerial perspective, it has been widely stated that marketing managers face the challenge of establishing consumers' trust in a variety of contexts, but doing so in computer-mediated environments may be particularly difficult (Naquin & Paulson, 2003; Schlosser, White, & Lloyd, 2006). The results of the present study offer grounds for several propositions for action.

The first substantive issue concerns the building of positive trusting beliefs. The important role of the affective trusting beliefs revealed by this study can help managers to find ways to accelerate alternative channels' adoption. Results show that customers will be most likely to adopt these channels if they believe that the bank will treat them fairly, especially in the case of a problem with their transactions over the new channels, if they believe that banks have established rules, polices, and procedures that make the delivery of transactions safe, and if there is a framework of transparency and integrity for these channels. These are the key elements to be clearly established and communicated to customers.

Then, managers need to consider the other factors that ultimately build intention to use, through the main driver, trusting intention. The marketing mix actions should focus on transaction security, on channels' usefulness (mainly for Internet banking), and on channels' ease of use (mainly for phone banking). In addition, the quality and quantity of information about the advantages of new channels has to be a communication priority for achieving this goal. Such information should emphasize arguments such as usefulness (low cost, convenience), ease of use, and transparency.

Concerning the important issue of transaction security, to make customers feel safe in using alternative channels banks should explain the potential risks of personal data loss, hacking, "phishing," and other security issues and inform customers about banks' procedures to handle privacy and security problems. Going a step further, managers could educate customers on the security behaviors customers themselves should adopt in order to minimize risks associated with such issues.

Last but not least, positioning new channels on trust and targeting customers who are innovative and have a positive stance to new technologies could be suggested as an effective marketing strategy for speeding up the adoption of these channels and creating a sustainable channel competitive advantage.

Limitations and Future Research

As with any field research, this work and its conclusions are not free of limitations. A first limitation refers to the cultural context of the study. Even if these results are representative for Greece, it can be expected that cultural differences influence the individual characteristics of innovativeness and stance to new technologies as well as the ways trust is built (Cyr, 2008; Kim, 2008). Additionally, although this study controlled for the familiarity of respondents with the related technology, the level of Internet penetration and more generally the stage of development of new technologies in a country may influence the acceptance of alternative bank channels.

Finally, another limitation refers to the variables included in the conceptual framework. Although this study examined many variables derived from references on trust, distribution channels, e-commerce, and technology acceptance, other context-specific or individual variables may contribute to explaining the use intention.

Thus, the present findings need to be confirmed by replicating the study in different cultural contexts and in bank markets of various stages of alternative channels growth. Further confirmation would also include testing the proposed model for other technology-based bank channels, such as mobile or TV banking and for specific bank transactions. Different e-banking channels will allow the validation of the scales used in this study to measure trusting beliefs in a channel as well as the resulting two-dimensional structure of affective and cognitive trust. Including different bank transactions would help to better understand the use intention–building process. Since trust and security are important factors in shaping use intention, different levels of transaction complexity and risk—for instance, information versus monetary bank transactions—will probably yield different levels of use intention.

An extension of the proposed framework could include variables such as customer experience, self-confidence, risk taking, products holding, and parallel use of alternative channels. In fact it would be useful to measure the effect of trust and the rest of the variables studied not only on use intention but also on the degree of current use (frequency, number and type of transactions, number of channels).

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APPENDIX A

Scale Items Concerning Channel Trust

benev_1	I believe that the [Internet/phone banking] of my bank is designed so as to meet my needs and wishes.
benev_2	I believe that for the [. . .] my bank has established norms and procedures for my transactions to be secure.
benev_3	I believe that should a problem occur with my transactions through [. . .], my bank will not exploit me.
benev_4	Generally, I believe that the [. . .] of my bank is designed to operate in good will regarding my transactions.
integr_5	I believe that the [. . .] of my bank keeps its promises.
integr_6	I believe that the transactions via my bank's [. . .] are characterized by integrity.
integr_7	I believe that should a problem occur with my transactions via [. . .], my bank will treat me fairly.
integr_8	Generally, I believe that my transactions via [. . .] of my bank are characterized by transparency.
compet_9	I believe that the [. . .] of my bank is fast and efficient.
compet_10	I believe that the [. . .] of my bank is designed so as to manage my transactions reliably.
compet_11	I believe that the [. . .] of my bank is capable of providing me with the desired service level.
compet_12	Generally, I believe that the [. . .] of my bank can effectively process my transactions.
predict_13	I believe that my transactions via my bank's [. . .] are always managed in the same manner.
predict_14	I believe that the [. . .] operates as expected, according to my banks promises.
predict_15	Generally, I know what to expect from my bank's [. . .].

Scale Items Concerning Perceived Privacy and Security

secur_1	The existing technology guarantees secure banking transactions via [Internet/phone banking].
secur _2	Most banks provide the procedures needed for secure banking transactions via [. . .].
secur _3	The existing legal and institutional framework guarantee sufficiently the security of banking transactions via [. . .].
secur _4	Generally, I believe that the banking transactions via [. . .] are secure.
priva_5	The existing technology guarantees privacy via [. . .].
priva_6	Most banks provide the procedures needed for privacy via [. . .].
priva_7	The existing legal and institutional framework guarantee sufficiently the privacy of banking transactions via [. . .].
priva_8	Generally, I believe that personal information that is carried via [. . .] is secure.

Scale Items Concerning Perceived Usefulness and Ease of Use

pusef_1	The use of [Internet/phone banking] would help me perform my banking transactions faster.
pusef_2	The use of [. . .] would help me save money in my banking transactions.
pusef_3	The use of [. . .] would facilitate the delivery of my banking transactions.

(Continued)

APPENDIX A (*Continued*)

pusef_4	Generally, the use of [. . .] would be useful in performing my banking transactions.
pease_5	It would be easy for me to learn how to use [. . .].
pease_6	It would be easy for me to develop skills in order to use [. . .] for my banking transactions.
pease_7	It would be easy to remember how to use [. . .] for my banking transactions.
pease_8	Generally, I would find it easy to process my banking transactions via [. . .].

Scale Items Concerning Trusting Intention and Use Intention

trint_1	In order to deliver some of my banking transactions, I feel that I could trust the [Internet/phone banking] of my bank.
trint_2	In order to deliver some of my banking transactions, I feel that I could rely on the [. . .] of my bank.
trint_3	In order to deliver some of my banking transactions, I would hesitate to trust the [. . .] of my bank.
usint_gen	What is the probability to start using each one of the following channels of your bank in order to process some of your banking transactions in the next 12 months?

Scale Items Concerning Familiarity

fam_1	I have experience in using the [Internet/phone services].
fam_2	I know very well to handle the [. . .].
fam_3	Generally, I am familiar with the use of [. . .].

Scale Items Concerning Innovativeness

inno_1	I like to try new and different things.
inno_2	Usually, I am among the first ones who try new products.
inno_3	I like to experiment with new ways of doing things.
inno_4	I like taking risk when I buy something.
inno_5	I am among the last among my friends who buy a new product.

Scale Items Concerning Stance to New Technologies

ntech_1	I prefer to handle my money affairs without using any electronic medium.
ntech_2	One has to be very cautious when using new technologies.
ntech_3	I do not like things that are automated or depend on new technologies.
ntech_4	I feel comfortable using technology.
ntech_5	I prefer the comfort of technology to the personal face-to-face service.

Scale Items Concerning Level of Customer Information on the Channel

ninfo_1	I believe to be (totally . . . not at all) informed about the possibilities offered by phone/Internet banking (i.e., banking transactions through phone and Internet).