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INTERNET BANKING USER ACCEPTANCE: EVIDENCE FROM GREECE AND BULGARIA

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Abstract

Up to now, research studies in Greece and Bulgaria have not paid sufficient attention in exploring the reasons affecting the acceptance of Internet Banking services in those countries. Using the decomposed Theory of Planned Behaviour (decomposed TPB) and based on data collected from a sample of 247 respondents of both countries – 118 from Bulgaria and 129 from Greece, we found, in general, an overall good fit of the sample while the hypotheses acceptance varied from country to country. Overall, we showed that in both countries, subjective norm, along with attitude and perceived behavioral control, were able to explain adequately the users' behavioral intention.

Key words: *internet banking, user acceptance, decomposed theory of planned behaviour, behavioural intention*

1. INTRODUCTION

During the last decades the banking sector has proved to be highly competitive. One reason could be that it is only in the last years that the banks have decided to adopt marketing techniques (Durkin and Howcroft, 2003). Since there is a constant struggle among the banking institutions to maintain and acquire a greater proportion of their clientele, they have turned to Information Technology (IT) in order to find alternative sources to attract new customers. The first "virtual bank" is the Automatic Teller Machine (Liao *et al*., 1999), which was introduced in 1960 in US banks. Another term used in academic literature instead of virtual banking is the term "non-branch bank" (Liao *et al*., 1999; Shih and Fang, 2004). The introduction of the ATMs was followed by the development of Phone Banking Services, mail services and, ultimately, the formation of Internet Banking distribution channel (Shih and Fang, 2004). Internet Banking, along with Mobile Banking, are the latest innovations in the banking sector and are regarded as supplementary distribution channels.

Since there is significant lack in relevant research both in Greece and Bulgaria, we intend with this study to investigate users' acceptance of Internet Banking services in the two countries. In order to identify user acceptance of Internet Banking services, this study adopted and tested the decomposed Theory of Planned Behaviour (TPB). The rest of the paper is structured as follows: the main concepts on internet banking are presented in section two while the theoretical background is discussed is section three. The research model and the hypotheses are developed in section four while research methodology and empirical results are presented in section five. Finally, section six concludes the study.

2. INTERNET BANKING

Rotchanakitumnuai and Speece (2003) make clear that Internet Banking allows customers to have direct access to their financial information and to undertake financial transactions without the need to visit a bank. Hence, websites demonstrating or advertising the banks' products do not allow the user to conduct transactions that are not considered as Internet Banking services (Pikkarainen *et al*., 2004). Additionally, a bank's website that provides only information inquiry transactions, such as checking the balance of a deposit account or the payment amount of a credit card, and does not allow monetary transactions, is also not characterised as Internet Banking (Sayar and Wolfe, 2007).

2.1. Providers' perspective

Even though the banks worldwide have invested billions in developing Internet Banking services, there is still need for ATMs to withdraw cash and it is necessary to visit a bank branch in order to sign contracts or mortgages. Nevertheless, Internet Banking technology is an intermediary that offers many actual, social and psychological advantages to the institution, which has invested in it (Sayar and Wolfe, 2007). The most important factor that led banks to turn to the particular distribution channel is the savings in transaction cost and maintenance, especially when it is compared to the traditional branch network (Shih and Fang, 2004). Moreover, with the construction of an appealing, effective and useful web site, banks are able to attract prospect "Web-based" customers and existing Internet users (Rotchanakitumnuai and Speece, 2003) and retain their existing clientele (Sarel and Marmorstein, 2003) by offering alternative and more specialised services.

Even though the benefits of using Internet Banking are facilitating and indisputable, surveys conducted during the last years have found that the actual users of Internet Banking are still a tiny proportion of the aggregation of bank customers (Sarel and Marmorstein, 2003; Gerrard *et al*., 2006), excluding Scandinavian economies (Pikkarainen *et al*., 2004).

2.2. Customers' perspective

Several surveys have proved that Internet Banking is a rather costless distribution channel from the customers' point of view (Rotchanakitumnuai and Speece, 2003; Shih and Fang, 2004; Pikkarainen *et al*., 2004). Moreover, Internet Banking is a convenient and effective application which *allows* any individual customer – retail or corporate – to manage his/her accounts 24 hours a day, it is accessible from any location, as long there is access to Internet, and the information provided is current and immediate without any intermediary situation needed (Tan and Teo, 2000). The fact that there is an increasing number of bank customers with recourse to Internet Banking, indicates the tendency to a more self–service mode, because traditional branch banking demands more time and effort (Pikkarainen *et al*., 2004; Jaruwachirathanakul and Fink, 2005) and accommodates the procedures (DeYoung *et al*., 2007).

On the other hand, a sounder question about the customers' perception on Internet Banking would be: "What are the main factors that discourage individuals use and benefit from Internet Banking?" Gerrard *et al*. (2006) studied the barriers to the adoption of Internet Banking from bank customers, and concluded that the most important factors are: *lack of trust in Internet and Internet transactions*, *no perceived need to adopt Internet Banking (inertia)*, *lack of knowledge about the specific service and lack of experience*, *inaccessibility to Internet and pricing concerns* (access to internet requires PC as well as appropriate software and hardware), and *IT fatigue* (due to every day contact with PC in work). Other studies revealed as dominant factors of Internet Banking user acceptance *the individual's*

social influence, computer self–efficacy and demographic characteristics (Durkin and Howcroft, 2003).

3. THEORETICAL BACKGROUND

This study is based on the decomposed Theory of Planned Behaviour (decomposed TPB), developed by Taylor and Todd (1995). Decomposed TPB is, respectively, based on the traditional Theory of Planned Behaviour (TPB), combined with the Theory of Reasoned Action (TRA) and Technology Acceptance Model (TAM).

3.1. Theory of Reasoned Action (TRA)

Fishbein and Ajzen (1975) demonstrated TRA as a model in social psychology that can explain virtually any human behaviour. It assumes that individuals are usually quite rational and make systematic evaluation of information made available to them. TRA includes the following general perceptions: *(a)* attitude, *(b)* subjective norm, *(c)* behavioural intention, and *(d)* behaviour. Moreover, Fishbein and Ajzen (1975) identified two factors affecting the individual's *intention*: The first one is the personal evaluation – positive or negative – that the person has set as a standard, and refers to *attitudes*, while the second factor is the person's perception of the social pressure put on him/her in order to realise or not the requested task, and is represented by the use of *subjective norm*.

3.2. Traditional Theory of Planned Behaviour (TPB)

The TPB was introduced by Ajzen (1985). TPB encompasses the TRA and extends it. Both theories establish that behaviour is a direct function of behavioural intention (Shih and Fang, 2004). However, the TPB differs from the TRA, since it includes a new construct, the *Perceived Behavioural Control* (PBC). PBC has been added to account for conditions where the individuals have no control over their behaviour. Ajzen (1991, p. 188) give the following definitions for attitude, subjective norm and PBC:

- *Attitude*: Refers to the degree to which an individual has a favorable or unfavorable evaluation of appraisal of the behaviour in question.
- *Subjective Norm*: Refers to the perceived social pressure to perform or not to perform the bahaviour.
- *Perceived Behavioural Control*: Refers to the perceived ease or difficulty of performing the behaviour and it is assumed to reflect past experience as well as anticipated impediments and obstacles.

3.3. Technology Acceptance Model (TAM)

TAM is based TRA and TPB. According to Davis (1989), who initially proposed TAM, it is based on two determinants: *Perceived Usefulness* and *Perceived Ease of Use*. "Perceived usefulness refers to the degree to which a person believes that using a particular system would enhance his or her job performance", whereas "perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort" (Davis, 1989, p. 320). Luarn and Lin (2005) claim that both TRA and TPB are basically psychological theories concerning human behaviour, while TAM is an application specified to IS usage. Therefore when academics do some kind of research on how users accept or reject information systems (IS) they usually tend to adopt TAM (Jaruwachirathanakul and Fink, 2005).

4. RESEARCH MODEL AND RESEARCH HYPOTHESIS

The decomposed TPB has been selected as the guiding framework for the current research model. The most important reason for this is the findings of Taylor and Todd's research (1995) where they compared TPB and decomposed TPB and concluded that there is an added value as a result of the decomposition, in terms of increased explanatory power and a better, more precise, understanding of the antecedents of behaviour. Moreover, the fact that this model incorporates constructs like compatibility and trialability, among others, which were originally proposed by other theories such as Innovation Diffusion Theory (IDT), enhances its validity. Thus, decomposed TPB is preferred from the traditional TPB.

According to IDT, *relative advantage* refers to the degree that the under examination innovation (in this case, Internet Banking) provides higher advantages that supersede the practices of its forerunner (Teo and Pok, 2003). These advantages may incorporate several factors such as user satisfaction, image enhancement, convenience and economic profit (Rogers, 1983).

Compatibility represents "the degree to which the innovation fits with the potential adopter's existing values, previous experience and current needs" (Shih and Fang, 2004, p. 216). Taylor and Todd (1995) stated that when the attributes of an innovation tend to correspond perfectly to users' needs, then it is more probable for these users to adopt the innovation. Tan and Teo (2000) indicate that Internet Banking is compatible with the average profile of the modern day banking customer, who is already familiar with the Internet and computer–literate. Hence, it is expected that a computer–oriented individual is more likely to perceive Internet Banking to be more compatible with his/her lifestyle.

Rogers (1983) defined *trialability* as the degree to which one can experiment with an innovation on a limited basis before making an adoption or rejection decision. He argued that if customers are given the opportunity to test, learn and experiment the Internet Banking application on a limited basis, then certain doubts and fears might be overcome.

Based on different motivation theories, socio-economic factors can be categorised in two groups, according to the source and nature of the acquired outcome: the extrinsic and intrinsic motivation. Extrinsic motivation occurs when the tested performance of an activity is realised because it is perceived to provide benefits that are distinct from the activity itself. Paradigms of extrinsic motivations are *perceived usefulness* (PEU) and *perceived ease of use* (PU), two determinants of attitude. The outcome of these two factors has a direct positive or negative impact on the usage of the IT package, thus, they are perceived as economic factors regarding attitude (Hsu and Chiu, 2004). On the other hand, intrinsic motivation refers to the realisation of an activity for no other reason than the pleasure of its own performance. The realisation or otherwise of an intrinsic motivational factor is not anticipated to affect economically the IT package, thus, intrinsic factors are considered non economic factors regarding attitude (Hsu and Chiu, 2004).

Perceived playfulness is a typical example of intrinsic motivational factors. The term was introduced in IT literature from Davis *et al*. (1992) and Igbaria *et al*. (1994) and it is a value that is usually tested through TAM-based models. Like *perceived playfulness*, PEU and PU are traditionally the key factors of the TAM, but there is a plethora of past literature (Hsu and Chiu, 2004; Lin, 2007; Teo and Pok, 2003; To *et al*., 2008), which confirm the significance of these determinants in models based on decomposed TPB. Taylor and Todd (1995) stated that PEU is a factor that affects mainly non-experienced users of the innovation, while the individuals who are familiarised with the usage of the innovation have "overcome" the need of software convenience and they look for attributes of the innovation that will improve their

work environment and the total usefulness of the innovation. Therefore, it is hypothesised that:

***H1*:** Relative advantage will have a positive impact on an individual's attitude.

***H2*:** Compatibility will have a positive impact on an individual's attitude.

***H3*:** Trialability will have a positive impact on an individual's attitude.

***H4*:** Perceived playfulness will have a positive impact on an individual's attitude.

***H5*:** Perceived ease of use (PEU) will have a positive impact on an individual's attitude.

***H6*:** Perceived usefulness (PU) will have a positive impact on an individual's attitude.

Subjective norm is usually separated in interpersonal and external influences (Lin, 2007 and Bhattacherjee, 2000). Others tested a different approach by classifying subjective norms into peer influence, business relation's influence and superiors' influence (To *et al*., 2008). Interpersonal influences enclose beliefs "imposed" on the individual from friends, family and generally his/her narrow social circle, whereas external regards influential beliefs retrieved by mass media, field experts, government and others. In the current study, we choose to qualify for *subjective influences* only the beliefs expressed by the individual's close environment. Therefore, it is hypothesised that:

***H7*:** Subjective influences will have a positive impact on an individual's subjective norm.

Self-efficacy along with *facilitating conditions* and *controllability* combined or solely, comprise three of the most significant constructs of *perceived behaviour control* (PBC). Previous literature presents the term of Internet self-efficacy (ISE) as a substitute construct instead of the original self-efficacy of Ajzen. Self-efficacy, however, is a central concept of Albert Bandura's social cognitive theory, which is defined as 'people's judgments of their capabilities to organise and execute courses of actions required to attain designated types of performance' (Bandura, 1986, p. 361). Investigating the factors affecting Internet self-efficacy, Lassar *et al*. (2004) found that ISE is positively related to actualised innovation – opinion leadership, frequency of web usage, individual's income and use of Internet for utilitarian purpose, whereas hedonic (for enjoyment purpose) use of web affects negatively ISE (Lassar *et al*., 2004). In any case, recent literature confirms that Internet self-efficacy is a powerful determinant of PBC. Facilitating conditions is a concept originally proposed by Triandis (1977) theory of interpersonal behaviour. Facilitating conditions of Internet Banking embody all the physical (time and money) and technical resources that are required in order to establish Internet connection and realise the Internet Banking service (Hernandez and Mazzon, 2006). Improved facilitating conditions of Internet Banking are expected to assist potential or existing users adopt and perform Internet Banking services with greater pleasure. Therefore, we hypothesise that:

***H8*:** Internet self-efficacy (ISE) will have a positive impact on an individual's perceived behavioural control (PBC).

***H9*:** Facilitating conditions will have a positive impact on an individual's perceived behavioural control (PBC).

Ajzen (1985) claimed that *attitude* is the primal factor of key influence to the *behavioural intention* of an individual. Additionally, it is worth to be mentioned that Ajzen (1991, p. 188) claims that 'the relative importance of attitude, subjective norm, and perceived behavioural control in the prediction of intention is expected to vary across behaviors and situations'. However, attitude is the key construct in TRA, TAM, TPB and decomposed TPB models

(Shih and Fang, 2004) and we consider it like this. Previously, it was stated that attitudinal beliefs, along with subjective norm and perceived behavioural control, are the components of an individual's behavioural intention in traditional TPB approach (Ajzen and Madden, 1986). According to the previous scholars, *attitude* is defined as the belief that performing a specific action will lead to a specific outcome, weighted by an evaluation of the appeal of the outcome (Taylor and Todd, 1995, p. 140). It is apparent that when an individual's attitudinal belief about an object, service or innovation is high, there is a greater possibility that it will affect positively his/her behavioural intention (To *et al*., 2008). Thus,

> ***H10*:** Attitudinal beliefs will cause a positive impact on an individual's behavioural intention.

It is clearly stated in the literature (see Taylor and Todd, 1991) that *Subjective norm* is (a) one determinant of intention (along with the attitude and perceived behavioural control) and (b) formed as individual's normative belief concerning particular referent weighted by the motivation to comply with that referent. Moreover, subjective norm reflects on the individuals the perception of what the opinions of his/her narrow social environment are on whether he/she should or not perform the under investigation task, therefore, it is directly and positively related to the user's behavioural intention (Tan and Teo, 2000). Thus, the hypothesis is developed as follows:

> ***H11*:** Subjective norm will cause a positive impact on an individual's behavioural intention.

Ajzen (1985) made an amendment of his initial theory of reasoned action (TRA) by adding a new determinant of behavioural intention, the *Perceived Behavioural Control* (PBC) developing the Theory of Planned Behaviour (TPB). PBC refers to the perceived ease or difficulty of performing the behaviour and it is assumed to reflect past experience as well as anticipated impediments or obstacles (Ajzen, 1991, p. 188). The power of the specific value in explaining *behavioural intention* can be retrieved, if we test the two theories, TRA and TPB, and compare their explanatory power. However, it should be kept in mind that PBC has a predictive utility only in the cases when the behaviour is not fully under the volitional control of the individuals, i.e. it is not hundred per cent up to them to do something. If individuals believe that the behaviour examined is under their volitional control, then PBC has no influence of behaviour (see: Armitage and Conner, 2001). Despite all this, we focus in the fact that there is significant superiority of TPB against TRA in almost every research. See for example at: Taylor and Todd (1995), Shih and Fang (2004), Hung and Chang (2005) and Lin (2007). The greater is the perception of an individual that he/she is in a position to control his/her behaviour in the specific performance, the greater the possibility to affect positively his/her behavioural intention is. Thus, the hypothesis is developed as follows:

> ***H12*:** Perceived behavioural control (PBC) will cause a positive impact on an individual's behavioural intention.

A graphical representation of the above analysis is presented in Figure 1.

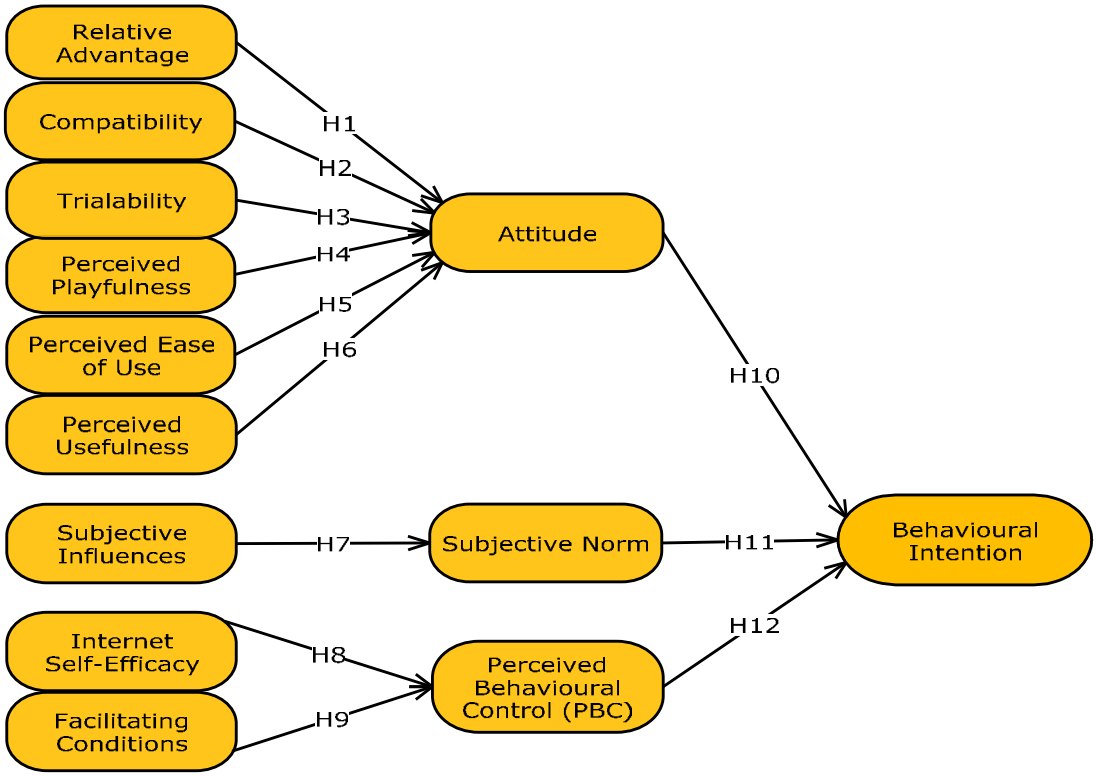

Fig. 1. Graphical representation of the model.

4. RESEARCH METHODOLOGY

5.1. Data collection

The study was conducted during the first semester of 2008 in both Greece and Bulgaria. The participants in this survey were all Internet users, regardless of whether or not they used Internet Banking. Two hundred questionnaires were distributed in each country: In Greece the questionnaires were distributed in the capital Athens (approximately 4 million citizens), Thessaloniki (approximately 1.2 million citizens) and Kavala, a medium-sized city in Northern Greece with a population reaching 80,000 citizens. Respectively, in Bulgaria the questionnaires were distributed in the capital Sofia (approximately 1.3 million citizens), the next most populated city of Bulgaria, Plovdiv (approximately 380,000 citizens) and in a developing city, Sandanski, with a population reaching to 30,000 citizens. From the total of 400 questionnaires, 247 responses were obtained as complete and usable – 129 responses from Greece and 118 from Bulgaria. The response rate was 61.75%.

The majority of the respondents of internet users in Bulgaria are male (67.8 per cent) whereas in Greece this percentage is equally distributed between male and female citizens (male: 52.7 per cent, female: 47.3 per cent). Tables 1 and 2 below show the different brackets of the ages of the subjects and their responses as to whether or not they use the Internet Banking services. In our study's sample, it is clear that both in Greece and Bulgaria most of the Internet users belong in the bracket of ages between 25 and 35. Citizens older than 45 years seem that have not yet adopted the use of Internet in extend degree.

Another useful observation is that the Internet has been widely introduced to the Bulgarian citizens only in recent years. Most of the respondents (77.1 per cent) claim that they have

been using the Internet for only the past 3 years (or less). On the contrary, the Internet appears to be a part of every day life of the 63 per cent of the Greek respondents who have used the Internet for more than 3 years and more intensely than the Bulgarians (45 per cent of the Greek respondents are connected to the Internet for more than 10 hours per week) (see Tables 3 and 4).

Moreover, an important factor affecting in negative way the use of Internet and Internet Banking in Bulgaria, is the difficulty of Bulgarian households to obtain PCs in their homes (see: http://www.nsi.bg/IKT_e/IKT.htm). According to the Bulgarian National Statistical Institute (data refers to 2007), only 23.3 per cent of Bulgarian households have direct access to a personal computer. Our study also verifies this output, since only 26.3 per cent of Bulgarian respondents replied that they have access to the Internet from their home – 49.2 per cent have access to the Internet only from their work, whereas 24.6 per cent access the Internet from an Internet Café. On the other hand, more than the half (62.8 per cent) of Greek households own a PC (see Tables 5 and 6).

Table 1. Frequencies and percentages regarding ages of the Greek respondents and whether or not they use Internet Banking.

Age		Do you use Internet Banking?		Total
		Yes	No	
18-24	Count	7	22	29
	Percentage	24.1%	75.9%	100.0%
25-35	Count	43	31	74
	Percentage	58.1%	41.9%	100.0%
36-45	Count	8	3	11
	Percentage	72.7%	27.3%	100.0%
46-55	Count	6	7	13
	Percentage	46.2%	53.8%	100.0%
> 56	Count	1	1	2
	Percentage	50.0%	50.0%	100.0%
Total	Count	65	64	129
	Percentage	50.4%	49.6%	100.0%

Table 2. Frequencies and percentages regarding ages of the Bulgarian respondents and whether or not they use Internet Banking.

Age		Do you use Internet Banking?		Total
		Yes	No	
18-24	Count	13	10	23
	Percentage	56.5%	43.5%	100.0%
25-35	Count	10	35	45
	Percentage	22.2%	77.8%	100.0%
36-45	Count	11	30	41
	Percentage	26.8%	73.2%	100.0%
46-55	Count	9	0	9
	Percentage	100.0%	0.0%	100.0%
> 56	Count	0	0	0
	Percentage	0.0%	0.0%	100.0%
Total	Count	43	75	118
	Percentage	36.4%	63.6%	100.0%

Table 3. Frequencies and percentages regarding the time that the Greek residents access their Internet services.

How much time are you connected to the Internet?	Frequency	Percent
Less than 1 hour per week	5	3.8
1 – 4 hours per week	20	15.5
4 – 10 hours per week	46	35.7
More than 10 hours per week	58	45.0
Total	129	100.0

Table 4. Frequencies and percentages regarding the time that the Bulgarian residents access their Internet services.

How much time are you connected to the Internet?	Frequency	Percent
Less than 1 hour per week	28	23.7
1 – 4 hours per week	35	29.7
4 – 10 hours per week	25	21.2
More than 10 hours per week	30	25.4
Total	118	100.0

Table 5. Frequencies and percentages regarding the places where Greek residents can have access to their Internet Banking services.

I have access to the Internet Banking services from:	Frequency	Percent
My House	81	62.8
My Working Place	40	31.0
An Internet Café	6	4.7
Another Place	2	1.6
Total	129	100.0

Table 6. Frequencies and percentages regarding the places where Bulgarian residents can have access to their Internet Banking services.

I have access to the Internet Banking services from:	Frequency	Percent
My House	31	26.3
My Working Place	58	49.2
An Internet Café	29	24.6
Another Place	0	0.0
Total	118	100.0

5.2. Measurements

The questionnaire consists of 48 questions that represent the model hypotheses. Thirty-three of them are used to explain the independent variables of the model (relative advantage, complexity, trialability, perceived playfulness, perceived ease of use, perceived usefulness, subjective influences, Internet self-efficacy and facilitating conditions), while the other fifteen questions illustrate the dependent variables (attitude, subjective norm, perceived behavioural control and behavioural intention). Table 7 presents all the items.

Table 7. Questionnaire Items.

Construct	Question	
Relative Advantage	X1	The use of Internet Banking saves time
	X2	The use of Internet Banking has more advantages
	X3	The use of Internet Banking offers me personalised services
	X4	Internet Banking enables me to have access to timely information services
Compatibility	X5	Internet Banking is compatible with my lifestyle
	X6	Using Internet Banking fits well with the way I like to manage my finances
	X7	Using Internet Banking to conduct banking transactions fits into my work profile
Trialability	X8	I want to be able to use Internet Banking on trial basis to see what it can do
	X9	I want to be able to try Internet Banking for one month

Perceived Playfulness	X10	I find the use of Internet interesting
	X11	I find the use of Internet enjoyable
	X12	I find the use of Internet exciting
	X13	I find the use of Internet funny
Perceived Ease of Use	X14	Learning to operate Internet Banking would be easy for me
	X15	I find it easy to do what I want in Internet Banking
	X16	Interaction with Internet Banking doesn't require lot of mental effort for me
Perceived Usefulness	X17	Using Internet Banking would improve my performance in conducting my banking transactions
	X18	Using Internet Banking would improve my productivity in banking transactions
	X19	Using Internet Banking would enhance my effectiveness in conducting banking transactions
Subjective Influences	X20	My family would think that I should use Internet Banking
	X21	Generally, I want to do what my family thinks I should do
	X22	My friends would think that I should use Internet Banking
	X23	Generally, I want to do what my friends think I should do
Internet Self-Efficacy	X24	I feel confident that I can complete an Internet Banking transaction
	X25	I feel confident visiting the Web-site by entering its address
	X26	I feel confident navigating the bank's Web-site by following hyperlinks
	X27	I feel confident finding information regarding Internet Banking via search engines
	X28	
	X29	
	X30	I feel confident finding information about Internet Banking in Web-sites or portals
Facilitating Conditions	X31	I possess the necessary equipment to use Internet Banking
	X32	I have enough time to use Internet Banking
	X33	I have enough money to use Internet Banking
Attitude	Y1	I feel using Internet Banking is a wise idea
	Y2	I feel using Internet Banking is a good idea
	Y3	I like to use Internet Banking

Subjective Norm	Y4	Most of my friends who are important to me believe that using Internet Banking is a wise idea
	Y5	Most of my friends who are important to me believe that using Internet Banking is a good idea
	Y6	Most of my friends who are important to me believe that I should use Internet Banking
	Y7	Most of my family members who are important to me believe that using Internet Banking is a wise idea
	Y8	Most of my family members who are important to me believe that using Internet Banking is a good idea
	Y9	Most of my family members who are important to me believe that I should use Internet Banking
Perceived Behavioural Control	Y10	I could use Internet Banking services
	Y11	I have the resources to use Internet Banking
	Y12	I have the knowledge to use Internet Banking
	Y13	I have the ability to use Internet Banking services
Behavioural Intention	Y14	I plan to use Internet Banking
	Y15	I intend to use Internet Banking within three months

5.2.1 Items / Questions of Independent Variables

The questions X1 – X4, which were used to measure relative advantage, along with questions X5 – X7 (complexity) were retrieved from the studies of Shih and Fang (2004), and Tan and Teo (2000). Questions X8 and X9 (trialability) were adopted from Tan and Teo (2000) while X10 – X13 (perceived playfulness) from Hsu and Chiu (2003). Items X14 – X16 (perceived ease of use) and X17 – X19 (perceived usefulness) were retrieved from a study conducted by Wu and Chen (2005), and they were slightly moderated in order to fit our study. Items X20 – X23 (subjective influences) were adopted from the questionnaire of Shih and Fang (2004), X24 – X30 from Hsu and Chiu (2004) (slightly modified) and, finally, items X31 – X33 were retrieved from the study of Lin (2007).

5.2.2 Items / Questions of Dependent Variables

All questions used for our study to measure the dependent variables: attitude, subjective norm, perceived behavioural control and behavioural intention (items Y1 – Y15), were entirely adopted from Shih and Fang (2004). In the investigation model, only behavioural intention could be considered to serve as dependent variable. However, attitude, subjective norms and perceived behavioural control are considered as dependent variables in relation to their predictors (see: Figure 1).

5.3. Factor Analysis

In order to determine the validity of the questionnaire we conducted factor analysis for the two samples (Greek and Bulgarian). The value of KMO index is 0.654 for the Greek sample, which is greater than 0.5 and slightly lower than 0.7, and therefore, we will proceed with the

factor analysis. A total of thirteen factors with eigenvalues greater than 0.884 were identified, which explain 82.991 per cent of the total variance. On the other hand, the Bulgarian KMO index was found to be 0.717, which makes it an excellent sample for conducting factor analysis. In the Bulgarian sample thirteen factors with eigenvalues greater than 0.576 have been found, which explained 93.177 per cent of the sample total variance[1].

5.4 Reliability Analysis

The internal consistency of the questionnaire was assessed by examining the coefficient alpha scores[2]. With regard to the Greek sample, Table 8 below indicates that, apart from facilitating conditions ($\alpha = 0.370 < 0.70$), all the remaining constructs appeared to have good internal consistency with values that varied from 0.698 (normative influences) to 0.900 (subjective norm).

Table 8. Reliability Analysis for each construct.

Factors	Cronbach's Alpha Greek	Cronbach's Alpha Bulgaria
Relative Advantage	0.724	0.716
Compatibility	0.863	0.917
Trialability	0.851	0.721
Perceived Playfulness / Perceived Enjoyment	0.895	0.760
Perceived Ease of Use	0.800	0.861
Perceived Usefulness	0.809	0.796
Normative Influences	0.698	0.390
Internet Self – Efficacy	0.889	0.974
Facilitating Conditions	0.370	0.493
Attitude	0.888	0.900
Subjective Norm	0.900	0.923
Perceived Behavioural Control	0.832	0.783
Behavioural Intention	0.874	0.898

On the other hand, the Bulgarian sample showed that both facilitating conditions ($\alpha = 0.493 < 0.70$) and normative influences ($\alpha = 0.390 < 0.70$) had low levels of internal consistency, whereas the other items appeared to be consistent, with values that varied from 0.716 (relative advantage) to 0.923 (subjective norm).

5.5. Confirmatory Factor Analysis

To test the structure of the questionnaire, a Confirmatory Factor Analysis (CFA) was performed. The results from this analysis showed that the model fit the data (Greek and Bulgarian) reasonably well. Table 9 indicates the total of the under investigation indices, the respective values of each sample, and the indicative values of acceptance.

[1] Analytical results on total variance for both samples are available upon request.
[2] See table 7 for the items of each construct - Analytical results for both samples are available upon request

Table 9. Observed indexes of the Greek and Bulgarian samples[3].

Indexes	Values for Greek Sample	Values for Bulgarian Sample	Indicative Values
X^2	1050.00	1175.72	
X^2/df	1.0174	1.1393	< 3.00
CFI	1.00	1.00	> 0.90
GFI	0.81	0.70	0.50 < GFI < 1.00
AGFI	0.79	0.66	0.50 < AGFI <1.00
RMSEA	0.009	0.035	< 0.10
RMSR	0.14	0.20	< 0.10

The previous results indicate that, apart from the RMSR index, which is not acceptable for both samples, all the other indices presented good fit for the Greek and the Bulgarian sample.

In addition to the previous measurements, we produced the standard estimates of the samples, and the T-student statistic calculations of each hypothesis. By the extent of the solutions we were able to evaluate whether or not each construct and hypothesis was in a position to measure adequately the sample's structure. When a hypothesis' standardised value is negative, then the null hypothesis is not valid. However, in order to have more certified results, we had to combine the outputs of the standard estimates of the samples with the solutions of the T-student statistic calculations of each hypothesis. Values of the solutions coloured red indicate low levels of significance. Thus, there were four cases we could expect:

(i) Positive standardised solution and significant T-values.

(ii) Negative standardised solution and significant T-values.

(iii) Positive standardised solution and non-significant T-values.

(iv) Negative standardised solution and non-significant T-values.

In the first case we accepted the null hypothesis, in the second we rejected the null hypothesis, whereas if the third and forth cases occurred, the null hypothesis was partially accepted or rejected, respectively. Tables 10 and 11 display the final decisions for every hypothesis we tested in the current study, for the Greek and Bulgarian sample, respectively.

[3] Analytical results from LISREL for Goodness of Fit Statistics for both samples are available upon request

Table 10. Hypotheses test outputs with path coefficients (Greek Sample).

Hypotheses	Standardised Solution	T-Values	Decision
H1: Relative advantage has a positive impact on an individual's attitude.	- 0.11	- 0.37	Reject
H2: Compatibility has a positive impact on an individual's attitude.	- 0.08	- 0.36	Reject
H3: Trialability has a positive impact on an individual's attitude.	- 0.08	- 0.66	Reject
H4: Perceived playfulness has a positive impact on an individual's attitude.	0.03	0.20	Partially accept
H5: Perceived ease of use has a positive impact on an individual's attitude.	0.80	2.92	Accept
H6: Perceived usefulness has a positive impact on an individual's attitude.	0.13	0.50	Partially accept
H7: Subjective influences have a positive impact on an individual's subjective norm.	0.89	5.34	Accept
H8: Internet self-efficacy has a positive impact on an individual's perceived behavioural control	- 0.12	- 0.51	Reject
H9: Facilitating conditions have a positive impact on an individual's perceived behavioural control	1.12	5.43	Accept
H10: Attitudinal beliefs cause a positive impact on an individual's behavioural intention	0.05	0.31	Partially accept
H11: Subjective norms cause a positive impact on an individual's behavioural intention.	0.04	0.40	Partially accept
H12: Perceived Behavioural Control causes a positive impact on an individual's behavioural intention	0.59	3.38	Accept

Table 11. Hypotheses test outputs with path coefficients (Bulgarian Sample).

Hypotheses	Standardised Solution	T-Values	Decision
H1: Relative advantage has a positive impact on an individual's attitude.	0.68	1.29	Partially accept
H2: Compatibility has a positive impact on an individual's attitude.	- 0.74	- 1.03	Reject
H3: Trialability has a positive impact on an individual's attitude.	- 0.23	- 1.02	Reject
H4: Perceived playfulness has a positive impact on an individual's attitude.	- 0.26	- 0.54	Reject
H5: Perceived ease of use has a positive impact on an individual's attitude.	0.29	0.42	Partially accept
H6: Perceived usefulness has a positive impact on an individual's attitude.	0.83	2.61	Accept
H7: Subjective influences have a positive impact on an individual's subjective norm.	0.80	6.10	Accept
H8: Internet self-efficacy has a positive impact on an individual's perceived behavioural control	2.50	2.48	Accept
H9: Facilitating conditions have a positive impact on an individual's perceived behavioural control	- 1.64	- 1.75	Reject
H10: Attitudinal beliefs cause a positive impact on an individual's behavioural intention	0.25	1.42	Partially accept
H11: Subjective norms cause a positive impact on an individual's behavioural intention.	0.09	0.57	Partially accept
H12: Perceived Behavioural Control causes a positive impact on an individual's behavioural intention	0.44	1.93	Partially accept

Figures 2 and 3 display the modifications performed in the initial model of our study, indicating the hypotheses confirmed in each country.

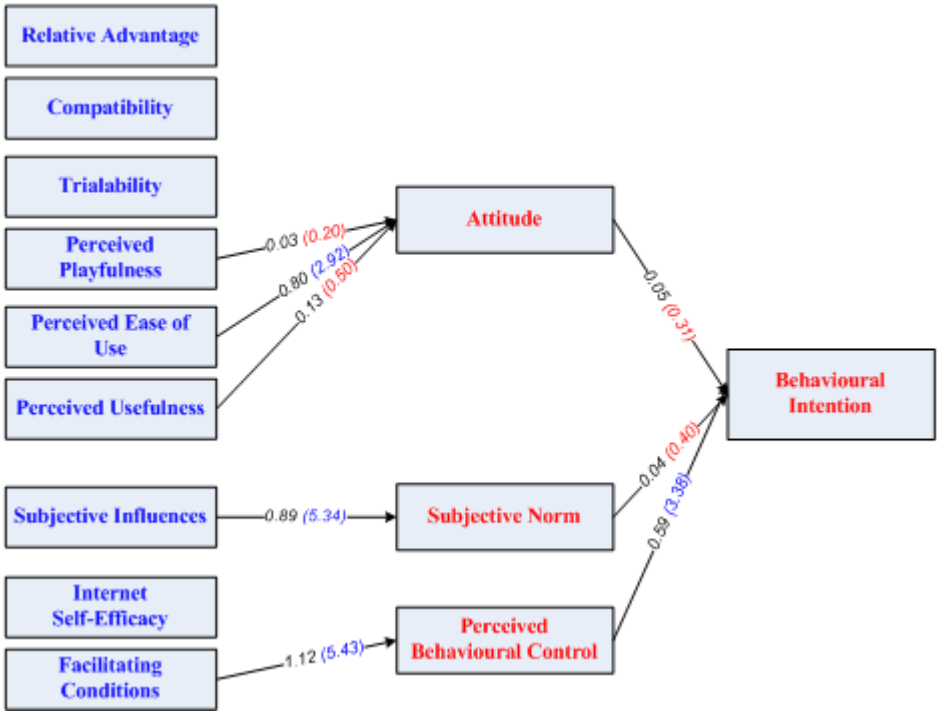

Fig. 2. Final acceptance model for the Greek sample with Standardised Solutions and T-Values.

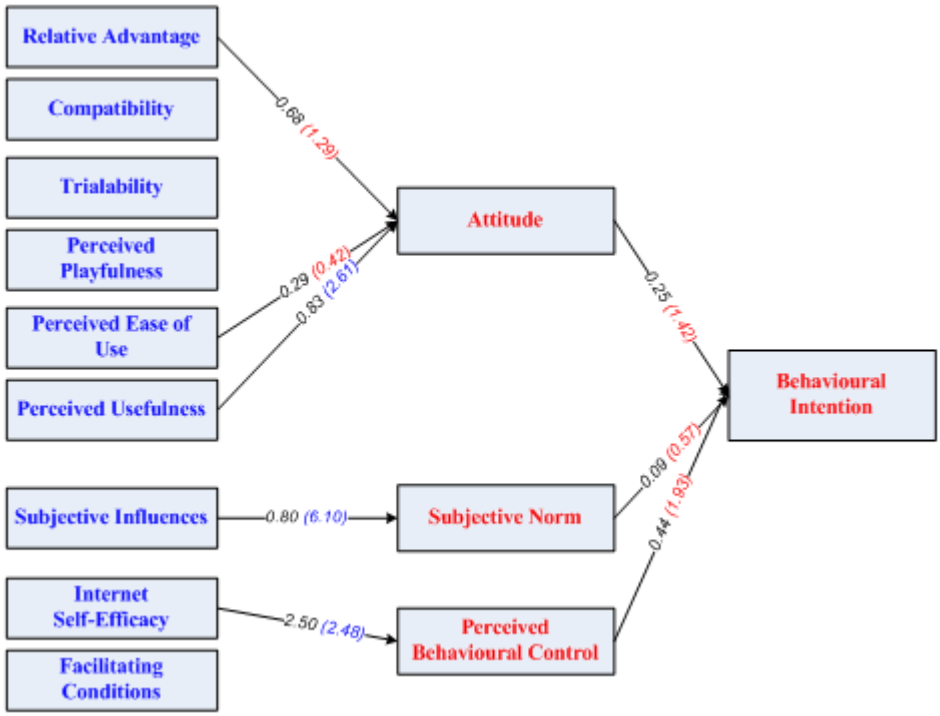

Fig. 3. Final acceptance model for the Bulgarian sample with Standardised Solutions and T-Values.

6. DISCUSSION AND CONCLUSIONS

The findings of our study showed, primarily, that both Greece and Bulgaria exhibit a good fit of adjustment and that the tested model, exploring both samples, have quite strong explanatory power.

Analytically, it is shown that in both countries, attitude, subjective norm and perceived behavioural control can satisfactory explain the primary construct (behavioural intention). Even though past studies have identified low significance of subjective norm in Internet Banking user acceptance (Shih and Fang, 2004; Hsu and Chiu, 2004), our study contradicts this finding. Subjective norm, along with attitude and perceived behavioural control were able to explain adequately the users' behavioural intention. The fact that subjective norm has been found significant in both countries can be justified, as it is observed by Todd and Taylor's (1995), that it is more possible for subjective norm to be significant, when applied to individuals with low levels of experience. Regarding attitude, relative advantage was found significant in Bulgaria and non-significant in Greece. According to previous studies on Internet Banking, relative advantage is one of the most powerful constructs of attitude. This outcome was a contradiction, since we would expect that Bulgarian respondents would claim that relative advantage was not significant and the Greeks the opposite.

Compatibility and trialability have been rejected since they failed to explain adequately the attitude in both countries. The reason why compatibility was not considered from the users as non-significant factor of attitude was probably the fact that in both countries the Internet was introduced during the last decade. Even though the residents of Greece are more familiarised with the Internet, apparently they do not consider this way of conducting banking transactions to be compatible with their way of life. For the Bulgarian respondents it was an expected outcome, since the Internet is considered as a luxury in Bulgaria (Kossev, 2005). On the other hand, trialability concluded in a paradox, since even if it is also a characteristic attribute of the inexperienced users, it did not seem to affect significantly attitude in Greece and Bulgaria.

Perceived playfulness was found significant in Greece and non-significant in Bulgaria. This was also an outcome we did not expect; perceived internet enjoyment is more powerful for the users that turn to the internet for amusement. Thus, since the internet has only been introduced in the last decade in Bulgaria and that it is only in recent years that its usage has been promoted by the Bulgarian government, it would be anticipated that the majority of the respondents would use the Internet for entertainment purposes and not for their work. The Greek respondents seem to choose the Internet mainly for entertainment purposes instead of a job assistant tool.

Perceived ease of use and perceived usefulness were found to have great significance and they positively explain the attitude in both samples; this result is compatible with past studies (Hung and Chang, 2005; and Lin, 2005). It is an expected assumption since the individual's perceived ease of use and usefulness are very important factors, especially when the innovation to which it is referring is a secondary, supplementary technology.

Regarding subjective norm, its only component, subjective influence, was found highly significant in both countries consistent with past studies (see: Tan and Teo, 2000; Wu, 2004 and Shih and Fang, 2004).

As for the Perceived behavioural control, the results were completely different in the two samples of our study: In Greece Internet self-efficacy was found non-significant, whereas facilitating conditions hypothesis was accepted. The Bulgarian respondents, on the opposite

hand, claimed that internet self-efficacy was a significant construct of PBC, while facilitating conditions was not.

In conclusion, our results may have implications for research and practice. Since there is lack of prior research on the intention to adopt Internet banking in both countries, our study could be considered as the stimulus for further research, with perhaps, different sample and more complex models. Moreover, this study could even be extended and applied in other countries operating in similar conditions to explore if comparable results are achieved.

Some suggestions for further research could be the enclosure of trust, security and perceived risk as determinants of attitude and how they affect the individuals in adopting Internet Banking services. Moreover, we could attempt to decompose Perceived Behavioural Control into Self-efficacy, Government Support and Technological support. This segmentation of PBC is retrieved by the study of Hernandez and Mazzon (2006), which was performed in Brazil, an emerging economy, with remarkable results.

Past research has shown that internet banking provides banks with a competitive advantage via the improvement of the quality of costumer services and by the reduction of the operational costs. Since the decomposed TPB indicates the factors which are important to the adoption of internet banking, one may consider that the results of this study have both managerial and marketing implications for practitioners.

Internet banking has started to become broadly accepted. So, to develop, maintain, and improve customer relationships is a vital factor for the today's competitive world. Thus, the revealed results of this study give a signal of what should be consider as important factors affecting the adoption of internet banking in both countries. Our proposal is either to validate or further explore relevant factors through further research and focused on those results to properly advice the communities.

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